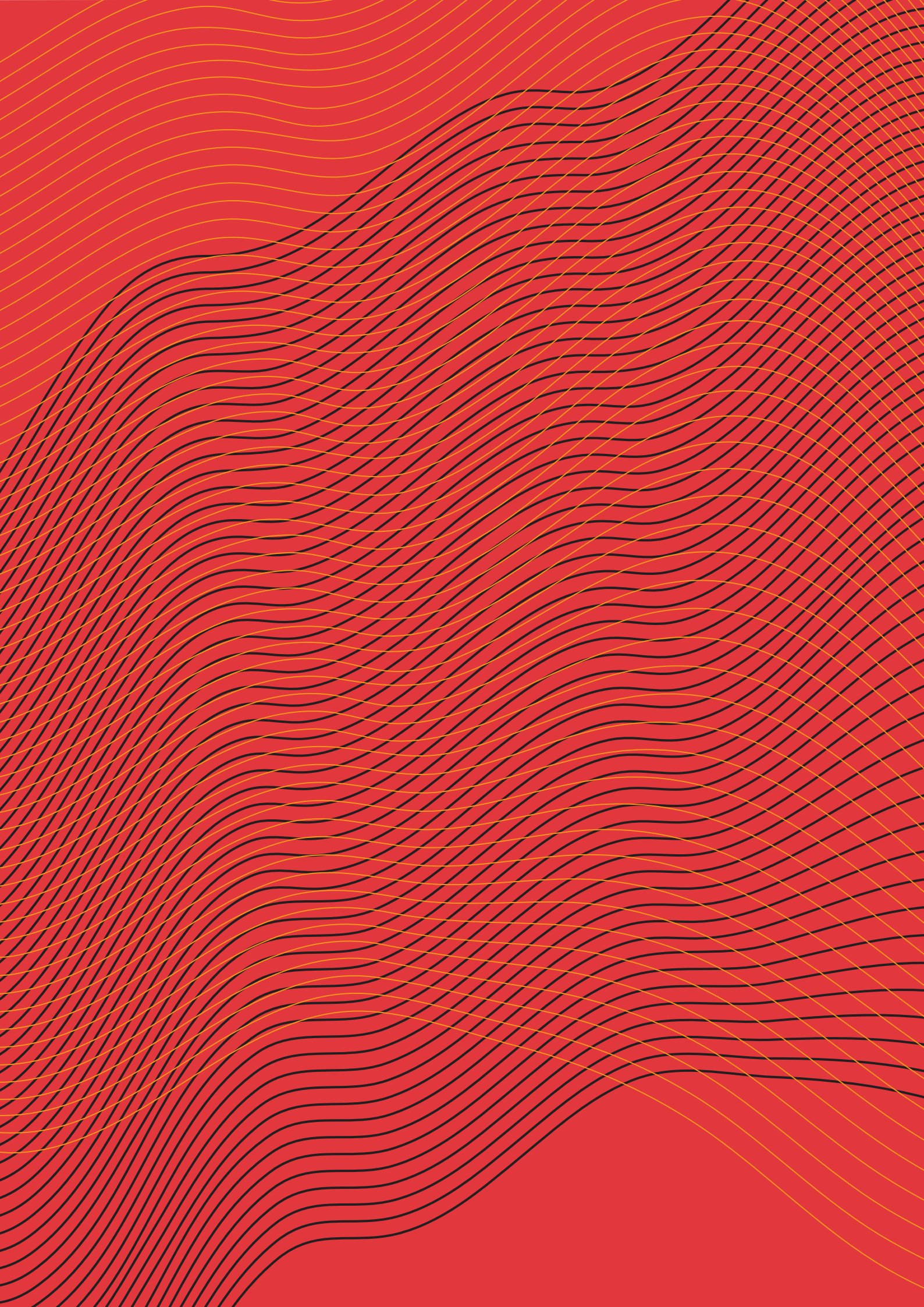
ANNUAL

SCIENTIFIC REPORT 2020

IDIBAPS

FUNDACIÓ CLÍNIC BARCELONA




IDIBAPS


FUNDACIÓ
CLÍNIC
BARCELONA

Published by:
IDIBAPS
Rosselló, 149-153
08036 Barcelona

Editorial board
IDIBAPS Scientific Coordination Office

Art direction & graphic design
marcmontala.com



© IDIBAPS 2021
http://creativecommons.org/licenses/by-nc-sa/4.0/

Images from the IDIBAPS photography competition
have been used to illustrate this document.

ANNUAL SCIENTIFIC REPORT 2020

INDEX

06 **Foreword**
Director's foreword
About us
Staff
Research and innovation outputs
Funding
Institutional projects
Scientific facilities
Training
Patronage
Communication and public engagement
News

58 **Area 1**
Biological aggression and response mechanisms

106 **Area 2**
Respiratory, cardiovascular and renal pathobiology and bioengineering

188 **Area 3**
Liver, digestive system and metabolism

280 **Area 4**
Clinical and experimental neuroscience

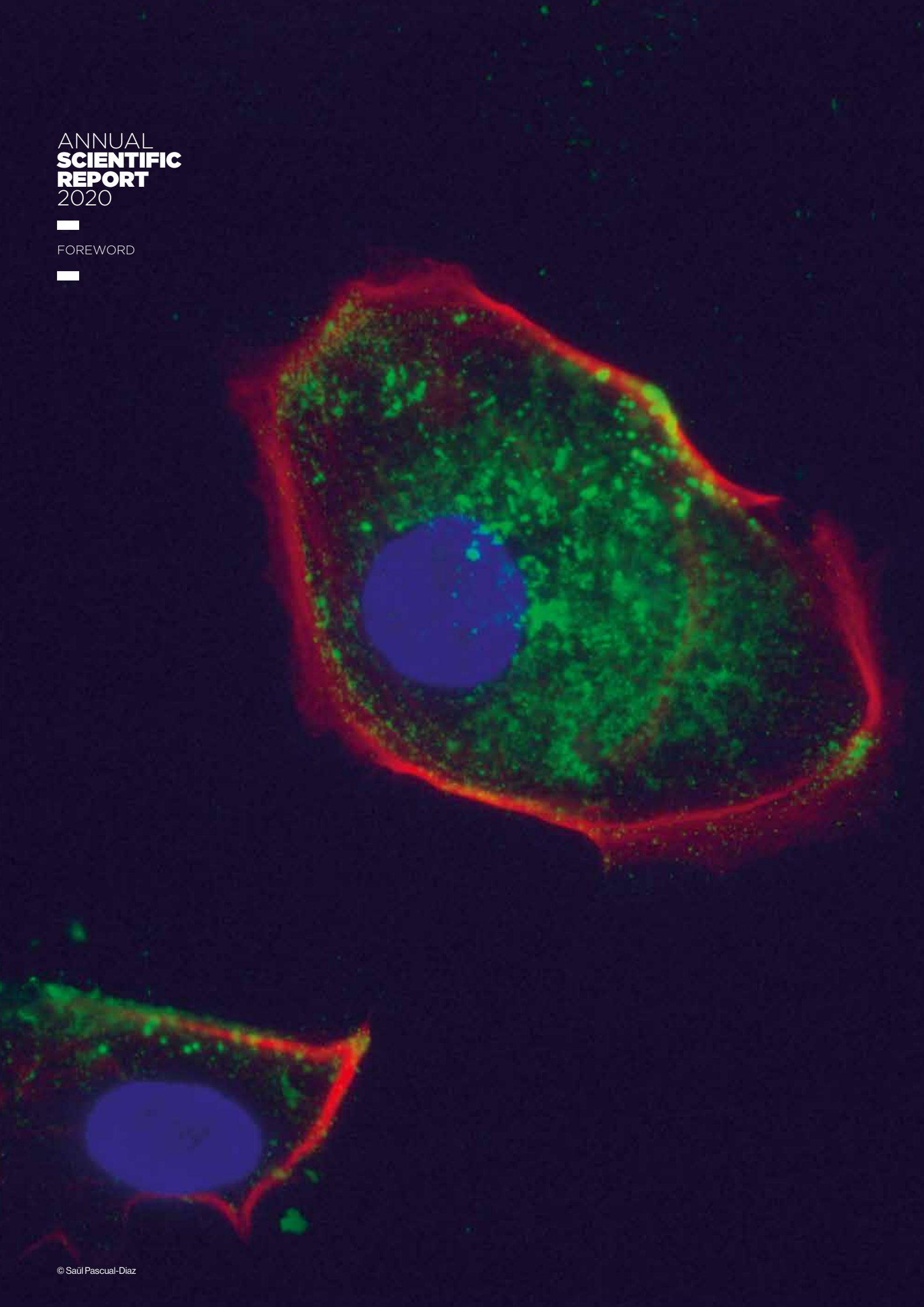
370 **Area 5**
Oncology and haematology

442 **Transversal research groups**

454 **Group leaders index**

ANNUAL **SCIENTIFIC REPORT** 2020

FOREWORD



© Saül Pascual-Diaz

Director's foreword

All our lives will be imprinted forever by the 2020 lingering pandemic experience. It has been a particularly singular year, perhaps one of the most difficult that we will ever face both individually and collectively alike. The SARS CoV-2 has impacted every sphere of our lives: it has profoundly altered our everyday habits, our way of interacting with our colleagues, family and friends, the way in which we work, and how we enjoy our free time. For many people it has also meant the loss of loved ones and/or serious financial problems due to loss of income. This year has emphasized, more than ever, the relevance of science in our society.

In the introductory letter to the annual report for 2019, written in mid-2020, at the height of the pandemic, I already explained the perplexity of the situation that we were facing and the impact it was having on our personal and academic lives. I also highlighted the extraordinary effort of coordination between all the Institutions of our Campus to confront the clinical emergency and at the same preserving as much as possible our research and promote new lines of research on this new disease.

One of the most extraordinary experiences has been the understanding and strong support of the general Society that has crystallized in numerous economical and volunteering initiatives. One year later, I am pleased to confirm that this commitment has been maintained over the course of time and has been translated into specific and palpable facts.

Despite the complexity of the situation and of the implementation at great haste of remote working, research activity did not cease. Rather, to the contrary, our researchers started up 195 projects and 82 trials or observational studies related to coronavirus and COVID-19. Some of the most prominent studies focus on the identification of genes that predict the severity of the disease or on risk factors for patients admitted to ICUs; on the development of therapies based on cellular response, or on the production of specific antibodies against SARS CoV-2. Work is also being carried out on the creation of a virtual control centre to improve patient care, on the study of the long-term effects of the disease and on the development of an innovative vaccine against SARS-CoV-2. In the month of December, Spain's Minister for Science and Innovation, Pedro Duque, visited IDIBAPS to learn first-hand about the research project for this vaccine. As well as the specific projects, and thanks to the efforts of staff, a Biobank of samples from patients with SARS CoV-2 was created and, in a year, it has collected 43,000 samples from some 2,800 donors and has facilitated the work of many researchers.

On PubMed, from 2020 alone, 154 scientific articles can be found with the words “COVID-19 and “IDIBAPS”; a figure that will be amply surpassed in 2021 and that is demonstrative of the work done by our research community to generate new knowledge about the virus and associated disease.

The impact of the pandemics not only triggered the action of our researchers, the commitment of the Society has been impressive with close to 13 million euros collected in donations for the clinical emergency and to promote research. It is impossible to mention all manifestations of this generosity.

In spite of all the limitations forced by the pandemics we have been pushing ahead the implementation of our strategic plan in very relevant actions addressed to reinforce our commitment to support the clinician–scientist career and consolidation of junior group leaders. In these lines, we were able to re-open the 50/50 program in which the IDIBAPS protects the 50% of the time for research of junior staff clinicians of the Hospital Clinic. Drs Georgina Espígol and Rosa Muñoz working in the areas of vasculitis and allergy, respectively, were the new incorporation to the program. Dr Jordi Camps was promoted to Junior group leader with his group of Translational Genomics of Colorectal Cancer. Following the recommendations of the plan we have been reviewed the criteria of the IDIBAPS groups, their leaders and the different steps of the scientific career. A major effort was also devoted to establish the methodology for the prescribed evaluation of all the groups of the institution. I would like also to highlight the renewal of the Biobank ISO 9001:2015 certification and the Communication Office’s accreditation as a FECYT (Spanish Foundation for Science and Technology) Scientific Culture Unit, as indicators of the high quality work of our units.

The excellent research activity of IDIBAPS beyond the impact of COVID-19 continue to be revealed by the high number and quality of articles published in 2020. We reached 1,416 original articles, a figure significantly higher than previous years with 68% of them published in journals in the first quartile, 33% in the first decile, and 206 in top journals with an impact factor higher than ten. In addition, 583 of the 1,416 original articles, 41%, were led by IDIBAPS scientists. These are good indicators of the quantity and quality of our research.

This significant increase in scientific production is not only the consequence of studies on COVID-19 since it has occurred in all areas of knowledge of the IDIBAPS indicating the relatively homogenous growth of our Institution. It is impossible to summarise all the findings made by our researchers over the course of 2020, but some examples worth mentioning are the identification of an epigenetic clock that reflects the proliferative history of tumor cells and predicts the clinical evolution of patients with cancer published in *Nature Cancer*; a study published in *Science* that describes a new and previously unknown immunological defence mechanism orchestrated by lipid droplets that attract and eliminate invasive pathogens, and the description of the mechanisms of action of neurons involved in working memory published in *Nature Neuroscience*.

The influential activity of our researchers is also shown by the publication of 81 editorial and 317 reviews also in high rank journals, as well as the publication of 85 clinical guides, a volume much higher than in previous years (45 in 2019, 39 in 2018 and also 39 in 2017). The relevance of Hepatology research in our Institution was also highlighted by a comparative study revealing that Hospital Clínic – IDIBAPS is the world's most influential institution in this area based on a compilation of the most cited articles published between 1950 and 2017. The study specially mentions that two researchers from the institution, Drs Jordi Bruix and Josep Maria Llovet, are the most often cited in the world of hepatology. This is not the only recognition that has been received by professionals from our institution, as nine researchers have been included in the list of the world's most influential scientists, published by Clarivate Analytics. The list identifies the experts that are found in the most cited 1% of their speciality in different areas of study. I had the honour of receiving the Gregorio Marañón National Research Prize in the area of Medicine awarded by the Spanish Ministry of Science and Innovation, a recognition that would not have been possible without the creative environment of our Institution.

Our science aims to have a transforming impact in our Society. In this sense four spin-offs were created. During 2020, 13 new patent applications were filed: 6 priority patents, 5 PCTs, and 2 patent entered into National Phases in several countries. Besides, 8 new license agreements were signed with national and international companies.

The year 2020 was also a key year for us because the Catalan Government of the Generalitat, at its Executive Council meeting held on 15 December, approved the plan to promote integration of the scientific and management activity of IDIBAPS and the Fundació Clínic. This Governmental agreement represents the start of the process of integration of the two institutions on the Clínic campus. With the unification of these two research institutions, we expect to facilitate the management of our research and improve our organisational efficiency.

One of the primary activities of our institution is promoting education of the new generations of scientists and promoting scientific knowledge and culture among citizens. In 2020, 88 doctoral students presented their theses. In spite of the pandemics we were able to organize 13 Institutional seminars conducted, with 105 clinical classroom courses and 5 sessions of the Stepping-Stone training programme, which provides young researchers with non-scientific skills and tools to help them in the development of their careers.

In the science communication sphere activities continued to be organised, such as the 4th edition of the summer school, and our participation in activities such as European Research Night, a public event for science communication that is held every year in over 300 cities across 30 countries in Europe.

Seeing this quick flashback of 2020, we all must feel proud of the effort and achievements of this complex year. They tell us how we all we are prepared to fight and overcome tremendous difficulties. We need to maintain this spirit because our endeavour in science is one of the best paths to improve the life of our society and set the solid ground for a hopeful future.

Elías Campo
Director

About us

The Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS) is a biomedical research institute of excellence. It combines clinical and basic research to accelerate the translation of the knowledge to the benefit of the patients. IDIBAPS is a CERCA (Research Centers of Catalonia) center and was first accredited as Instituto de Investigación Sanitaria (Instituto de Salud Carlos III) in 2009.

Founded in 1996, it is a public consortium formed by the Generalitat de Catalunya, Hospital Clínic de Barcelona, School of Medicine and Health Sciences of the University of Barcelona and, as an associated partner, the CSIC's Barcelona Biomedical Research Institute.

The **IDIBAPS** research community is composed of more than 1,800 people, grouped into 107 groups organized across 5 different areas of knowledge.

AREA 1
Biological aggression and response mechanisms

AREA 2
Respiratory, cardiovascular and renal pathobiology and bioengineering

AREA 3
Liver, digestive system and metabolism

AREA 4
Clinical and experimental neuroscience

AREA 5
Oncology and haematology

Additionally, 3 transversal groups perform research in Primary Care, Nursing, Pharmacology and Clinical Trials.

Institució CERCA
Centres de Recerca de Catalunya

HR EXCELLENCE IN RESEARCH

The Fundació Clínic per a la Recerca Biomèdica (FCRB) is a non-profit foundation set up in 1989 by the Hospital Clínic de Barcelona and the University of Barcelona. Its main mission is to provide administrative support to researchers at Hospital Clínic de Barcelona in the management, development and justification of their scientific activity.

It also works to attract resources for research and, through the Aula Clínic and Eixample Clínic platforms, to promote and disseminate continuous training in the health sciences.

Scientific breakthroughs are never the result of chance. They are the fruit of long-term commitments that involve not only researchers, but also society as a whole.

IDIBAPS - FCRB has made such a commitment, to encourage translational research, innovation and technological progress in the field of biomedicine, through different programmes addressing diseases with a high prevalence, morbidity and mortality in our society.

The data presented in this Annual Scientific Report details the ever-growing scientific achievements made by IDIBAPS-FCRB investigators and their capacity for attracting public and private funding. This enormous potential for capturing resources and their translation into applied results for clinical practice constitute the best guarantee for securing the future of the Institute and its impact on society.

Organisation chart

IDIBAPS-FCRB works to ensure efficiency and quality in the services offered to its research staff, in particular, in the areas of research project management and administration.

Elías Campo, MD PhD
Director of IDIBAPS and of FCRB

Gemma Pedrola
Secretary
direccio@idibaps.org
T. +34 93 312 94 11
CEK, mezzanine floor

Marga Nadal, PhD
Director of Strategy

Arantxa Fernández
Secretary
arantxa.fernandez@idibaps.org
T.+34 93 227 18 30
CEK, mezzanine floor

Daniel Arbós
Head of the Communication Office

Gemma Llaverias
Head of the Scientific Coordination Office

Gemma Pascual
Head of the Institutional Actions Office

Sandra Piquer
Head of IDIBAPS laboratories

Aina Rodríguez
Head of IDIBAPS Core Facilities and Biobank coordinator

Elisenda Vendrell
Head of the Knowledge and Technology Transfer (KTT) Office

Rosa Vilavella
General Manager

Laura Lopera
Secretary
llopera@clinic.cat
T. +34 93 227 18 42
CEK, mezzanine floor

Juan Abolafia
Head of the Pre-Award Office for International Grants

Sergio Camacho
Head of economic planning and Management control

Ernest Costa
Head of the TIC Office

Marta Fernández
Head of the Human Resources Office

Judit Martínez
Head of the Post-award Grants Office

Guillem Masdeu
Head of the Legal Office

Sònia Meléndez
Head of the Finance Department

Cristina Navas
Head of the General Services Office

Sandra Pérez
Head of the Pre-Award Office for National Grants

Núria Vilamajó
Head of Patronage

Governance and structure

Governance is exercised through the following boards and committees:

IDIBAPS BOARD OF GOVERNORS

Conformed by representatives of the different institutions of the consortium, it supervises IDIBAPS actions, budget and results. Its mission is to take scientific decisions in consultation with the Scientific Advisory Board, and to evaluate the implementation of the strategic plan.

CHAIRMAN
Joan Gómez Pallarés
General Director of Research. Departament d'Empresa i Coneixement. Generalitat de Catalunya

VICE-CHAIRMAN
Josep Maria Campistol
General Director of Hospital Clínic de Barcelona

BOARD MEMBERS
Robert Fabregat
General Director of Direcció General de Recerca i Innovació en Salut. Departament de Salut. Generalitat de Catalunya

Domènec Espriu
Research Vice-Dean of Universitat de Barcelona

Lluís Calvo
Institutional Coordinator of Consejo Superior de Investigaciones Científicas (CSIC) in Catalonia

Antoni Trilla
Dean of the School of Medicine and Health Sciences. Universitat de Barcelona.

Elías Campo
Director

Antoni Castells
Medical Director of Hospital Clínic de Barcelona

Roser Cortés
Director of Instituto de Investigaciones Biomédicas de Barcelona (IIBB-CSIC)

SECRETARY
Lluís Rovira
Director of CERCA

THE SCIENTIFIC ADVISORY BOARD

External leading scientists chosen by the Board of Governors, compose this board to advise IDIBAPS on all scientific issues. These leading scientists have in-depth knowledge of the Spanish, European and/or American R+D+I systems as they hold positions in prestigious research institutions.

CHAIRMAN
José María Mato
CIC bioGUNE, Bilbao

BOARD MEMBERS
Jesús Ávila
Centro de Biología Molecular Severo Ochoa (CBM), Madrid

Fernando Arenzana-Seisdedos
Institut Pasteur, Shangai, China

Amparo Cano
Instituto de Investigaciones Biomédicas "Alberto Sols", CSIC-UAM, Madrid

Francisco Fernández Avilés
Hospital Gregorio Marañón, Madrid

Ramon Gomis
IDIBAPS, Barcelona

José López Barneo
Instituto de Biomedicina de Sevilla (IBiS)

Carlos Macaya
Hospital Clínico San Carlos, Madrid

Óscar Marín
King's College London, UK

Federico Mayor
Centro de Biología Molecular Severo Ochoa, Madrid

Pura Muñoz
ICREA, Universitat Pompeu Fabra

Angel Pellicer
NYU School of Medicine, New York, US

Jesús San Miguel
Clínica Universitaria de Navarra

Francisco Sánchez-Madrid
Hospital La Princesa, Madrid

Eugenio Santos
Centro de Investigación del Cáncer (CIC), Salamanca

Antonio Vidal-Puig
Cambridge Phenomics Center, UK

THE STEERING COMMITTEE

It is responsible for the supervision of the progress achieved by the five IDIBAPS research areas, the recruitment of new scientists within the framework of different research programmes, and the evaluation of IDIBAPS training programmes.

CHAIRMAN
Elías Campo
Director

MEMBERS
Neus Agell
Vice-Dean of School of Medicine and Health Sciences. Universitat de Barcelona
Signal transduction and cell cycle group leader

Cristina Fillat
Gene therapy and cancer group leader

Joan Carles García-Pagán
'Hepatic hemodynamics and portal hypertension' group leader.
Research Deputy Director of Hospital Clínic de Barcelona

Josep Maria Llovet
Translational research in hepatic oncology group leader

Anna Planas
Coordinator of the IDIBAPS Research Area 4

Rosa Vilavella
General Manager

SECRETARY
Marga Nadal
Director of Strategy

THE INTERNAL ADVISORY COMMITTEE

IDIBAPS researchers representing all research areas advise the IDIBAPS director to implement the strategic decisions taken by the Board of Governors.

CHAIRMAN
Elías Campo
Director

STEERING COMMITTEE REPRESENTATIVES
Josep Maria Llovet
Translational research in hepatic oncology group leader

Joan Carles García-Pagán
Hepatic hemodynamics and portal hypertension group leader.
Research Deputy Director of Hospital Clínic de Barcelona

INSTITUTIONAL REPRESENTATIVES
Gisela Sugranyes
Physicians' Representatives of Hospital Clínic de Barcelona

Guadalupe Mengod
Deputy Director of Instituto de Investigaciones Biomédicas de Barcelona (IIBB-CSIC)

Neus Agell
Vice-Dean of School of Medicine and Health Sciences. Universitat de Barcelona

Roser Cortés
Director of Instituto de Investigaciones Biomédicas de Barcelona (IIBB-CSIC)

AREA REPRESENTATIVES

AREA 1
Josep Maria Miró, Coordinator
Maria Cinta Cid, Representative

AREA 2
Ramón Farré, Coordinator
Joan Albert Barberà, Representative

AREA 3
Jordi Bruix, Coordinator
Francesc Balaguer, Representative

AREA 4
Anna Planas, Coordinator
Josep Dalmau, Representative

AREA 5
Dolors Colomer, Coordinator
Aleix Prat, Representative

GUEST MEMBERS
Montserrat Batlle
Works Committee President

Antoni Trilla
Dean of the School of Medicine and Health Sciences Universitat de Barcelona

Fàtima Crispi
Researcher of the Fetal and perinatal medicine group

Anna Novials
Pathogenesis and prevention of diabetes group leader

Carmen Peralta
Liver transplantation and graft viability group leader

Azucena Salas
Researcher of the Inflammatory bowel disease group

Antoni Sisó
CAPSBE Primary Care Research Coordinator

SECRETARY
Marga Nadal
Director of Strategy

OTHER COMMITTEES

The Drug Clinical Research Ethics Committee of the HCB
ceic@clinic.cat

The Animal Experimentation Ethics Committee of the UB
ceea@ccit.ub.edu

Biosafety Committee (CBS)
bioseguretat@idibaps.org

Mentoring Committee
coordinacio.cientifica@idibaps.org

Training Committee
stepping.stone@idibaps.org

Clinicians and Research Committee
direccio@idibaps.org

Ombuds Committee
ombudscommittee@idibaps.org

Works council
comite.empresa@idibaps.org
cefcrb@clinic.cat

FCRB BOARD OF GOVERNORS

Board of trustees

PRESIDENT
Joan Elías
Dean of the Universitat de Barcelona

VICE-PRESIDENT
Josep M. Campistol
General Director of the Hospital Clínic de Barcelona

SECRETARY
Antoni Castells
Medical Director of the Hospital Clínic de Barcelona

Board members

Antoni Trilla
Dean of the School of Medicine and Health Sciences. Universitat de Barcelona

Elías Campo
Director

Carles Ponsa
Independent member

Board of governors

PRESIDENT
Josep M. Campistol
General Director of the Hospital Clínic de Barcelona

Board members

Antoni Trilla
Dean of the School of Medicine and health Sciences. Universitat de Barcelona

Elías Campo
Director

Antoni Castells
Medical Director of the Hospital Clínic de Barcelona

SECRETARY
Rosa Vilavella
General Manager

Research areas, teams and groups

AREA 1.
BIOLOGICAL AGRESSION AND RESPONSE MECHANISMS

1.1. Ocular inflammation clinical and experimental studies
1.2. Systemic autoimmune diseases
1.3. Systemic vasculitis
1.4. Molecular and cellular bases of inflammation. Structural and biological mass spectrometry
1.5. Immunogenetics and immunotherapy in autoinflammatory and immune responses
1.6. Immune receptors of the innate and adaptive system
1.7. AIDS and HIV infection
1.8. Endocarditis. Cardiovascular infections. Experimental model
1.9. Emergencies: processes and pathologies
1.10. Infections in solid-organ transplant recipients
1.11. Inflammatory joint diseases (IJDs)
1.12. Nosocomial infection

AREA 2.
RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

2.1. Inflammation and repair in respiratory diseases
2.2. Genetics and urological tumours
2.3. Physiopathological mechanisms of respiratory illnesses
2.4. Translational computing in cardiology
2.5. Translational research in pulmonary vascular diseases cell proliferation and apoptotic mechanisms in pulmonary arterial hypertension
2.6. Familial cardiomyopathies and sudden death syndrome
2.7. Nephro-urological diseases and kidney transplantation
2.8. Vascular cell biology
2.9. Cardiovascular risk nutrition and aging
2.10. Respiratory biophysics and bioengineering
2.11. Arrhythmias and physical activity
2.12. Atrial fibrillation biopathology and therapy
2.13. Breathing disturbances in sleep
2.14. Clinical and experimental respiratory immunoallergy
2.15. Translational research in post-transplant neoplasia
2.16. Atherosclerosis, coronary disease and heart failure
2.17. Cardiac imaging
2.18. Applied research in infectious respiratory diseases and critically ill patients

AREA 3.
LIVER, DIGESTIVE SYSTEM AND METABOLISM

3.1. Hepatic oncology (BCLC)
3.2. Gastrointestinal and pancreatic oncology
3.3. Genetic predisposition to gastrointestinal cancer
3.4. Neuronal control of metabolism (NeuCoMe)
3.5. Inflammation and liver disease
3.6. Angiogenesis in liver disease
3.7. Mitochondrial regulation of cell death and steatohepatitis
3.8. Gene therapy and cancer
3.9. Liver transplantation and graft viability
3.10. Viral toxic and metabolic hepatopathies
3.11. Regulation of liver microcirculation in cirrhosis and hepatic vascular diseases
3.12. Chronic liver diseases molecular mechanisms and clinical consequences
3.13. Liver vascular biology
3.14. Fetal and perinatal medicine
3.15. Metabolic bone disease
3.16. Endocrine disorders. Crosstalk between molecular, metabolic and therapeutic determinants
3.17. Translational research group in new therapeutic and diagnostic strategies in liver diseases
3.18. Translational research in hepatic oncology
3.19. Gynecological endocrinology and human reproduction
3.20. Hepatocellular signaling and cancer
3.21. Pathogenesis and prevention of diabetes
3.22. Inflammatory bowel disease
3.23. Cholestasis
3.24. Protective strategies against hepatic ischemia reperfusion injury
3.25. Inherited metabolic diseases
3.26. Liver cell plasticity and tissue repair
3.27. Pathogenesis and treatment of autoimmunity
3.28. Translational research in diabetes lipids and obesity

AREA 4.
CLINICAL AND EXPERIMENTAL NEUROSCIENCE

- **4.1.** Pathophysiology and treatment of neurodegenerative disorders
- **4.2.** Systems neuropharmacology
- **4.3.** Schizophrenia
- **4.4.** Child and adolescent psychiatry and psychology
- **4.5.** Brain ischemia clinical and experimental studies
- **4.6.** Theoretical neurobiology of cortical circuits
- **4.7.** Pathogenesis of autoimmune neuronal disorders
- **4.8.** Cortical circuit dynamics
- **4.9.** Neurophysiology
- **4.10.** Muscular research and mitochondrial function
- **4.11.** Clinical addictions
- **4.12.** Clinical Neurophysiology
- **4.13.** Neuropsychology
- **4.14.** Advanced imaging in neuroimmunological diseases (ImaginEM)
- **4.15.** Parkinson disease and other neurodegenerative movement disorders clinical and experimental research
- **4.16.** Molecular neuropharmacology
- **4.17.** Imaging of mood- and anxiety-related disorders (IMARD)
- **4.18.** Alzheimer's disease and other cognitive disorders
- **4.19.** Systems neuroscience
- **4.20.** Mechanisms of neurotoxicity and neurodegeneration
- **4.21.** Cellular neurobiology
- **4.22.** Multimodal neuroimaging in high risk and early psychosis
- **4.23.** Neurobiology
- **4.24.** Bipolar and depressive disorders
- **4.25.** Pathogenesis and new treatments in multiple sclerosis

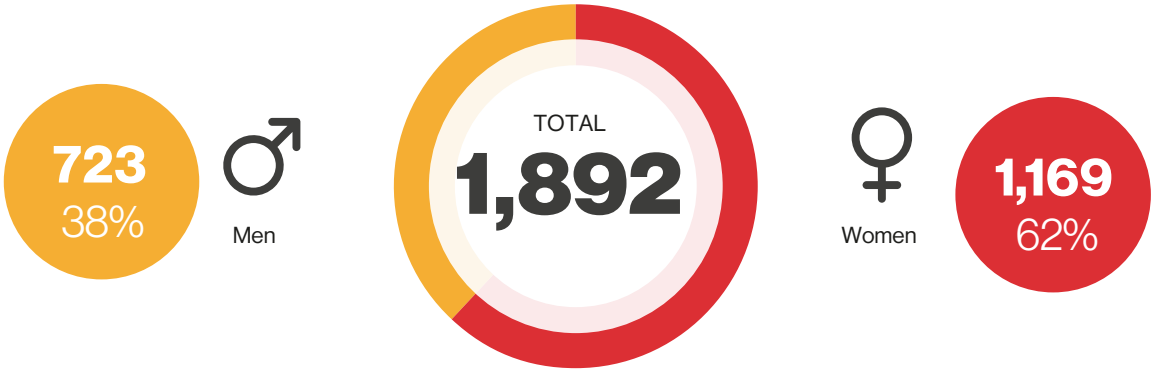
AREA 5.
ONCOLOGY AND HAEMATOLOGY

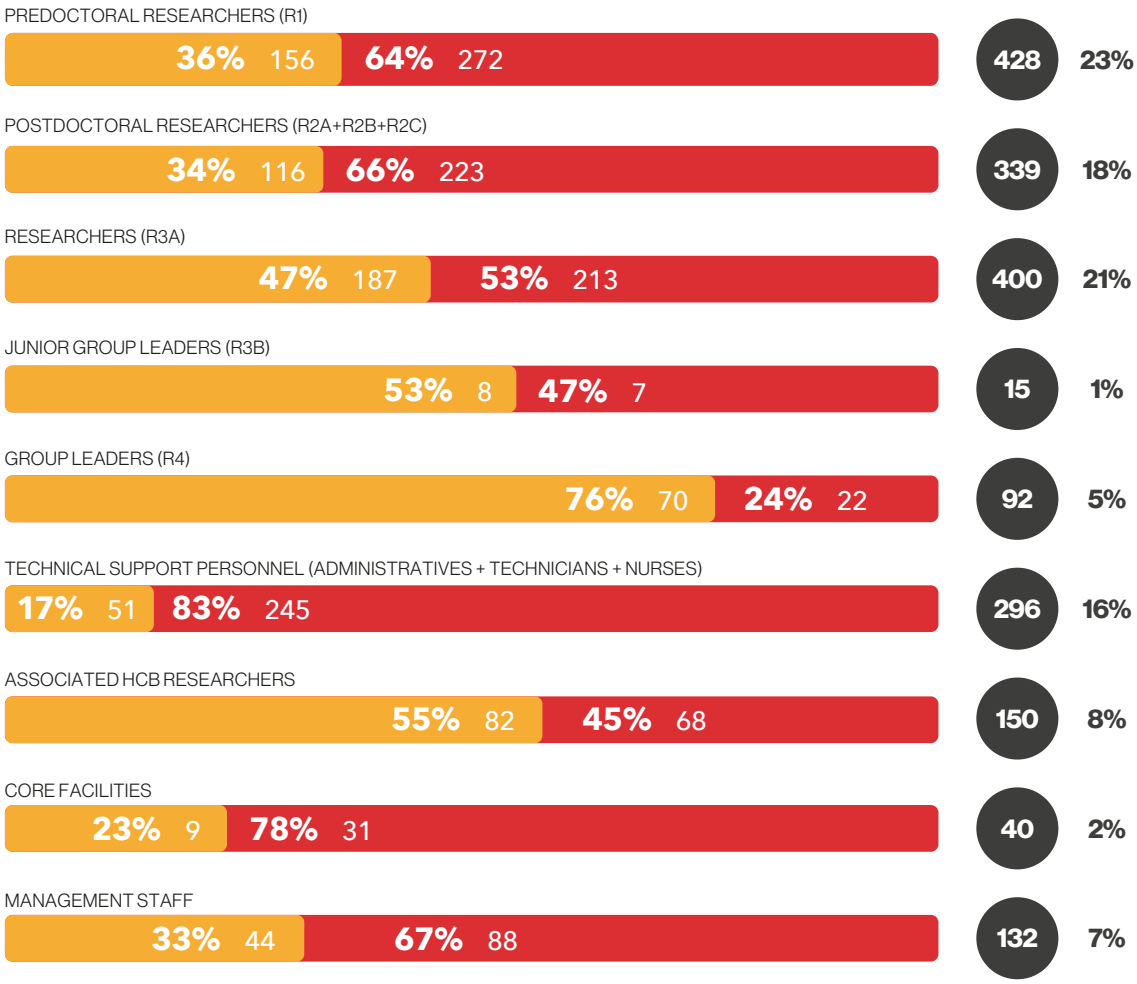
- **5.1.** Signal transduction and cell cycle
- **5.2.** Functional characterization of oncogenic mechanisms in lymphomagenesis
- **5.3.** Myeloma and other monoclonal gammopathies
- **5.4.** Molecular pathology of lymphoid neoplasmss
- **5.5.** Myeloid neoplasms
- **5.6.** Experimental therapies in lymphoid neoplasms
- **5.7.** Molecular pathology of inflammatory conditions and solid tumours
- **5.8.** Endocytosis and intracellular trafficking of proteins and colesterol
- **5.9.** Hemotherapy-hemostasis
- **5.10.** Mechanisms of progression in monoclonal gammopathies
- **5.11.** Lymphoid neoplasms
- **5.12.** Biomedical epigenomics
- **5.13.** Molecular biology of reproduction and development
- **5.14.** Microenvironment in lymphoma pathogenesis and therapy
- **5.15.** Lipid trafficking and disease
- **5.16.** Diagnosis and therapy in oncology
- **5.17.** Transcriptional regulation of gene expression
- **5.18.** Translational genomics and targeted therapies in solid tumours
- **5.19.** Melanoma imaging, genetics and immunology
- **5.20.** Molecular genetics of paediatric lymphomas
- **5.21.** Hematopoietic progenitor cell transplantation

TRANSVERSAL RESEARCH GROUPS

- **T.1.** Clinical pharmacology
- **T.2.** Primary healthcare transversal research group
- **T.3.** Research in nursing

Staff


723
38%
Men
TOTAL
1,892
Women
1,169
62%


PREDOCTORAL RESEARCHERS (R1)
36% 156
64% 272
428
23%
POSTDOCTORAL RESEARCHERS (R2A+R2B+R2C)
34% 116
66% 223
339
18%
RESEARCHERS (R3A)
47% 187
53% 213
400
21%
JUNIOR GROUP LEADERS (R3B)
53% 8
47% 7
15
1%
GROUP LEADERS (R4)
76% 70
24% 22
92
5%
TECHNICAL SUPPORT PERSONNEL (ADMINISTRATIVES + TECHNICIANS + NURSES)
17% 51
83% 245
296
16%
ASSOCIATED HCB RESEARCHERS
55% 82
45% 68
150
8%
CORE FACILITIES
23% 9
78% 31
40
2%
MANAGEMENT STAFF
33% 44
67% 88
132
7%

Recruitment and retention of talent programs

INSTITUCIÓ CATALANA DE RECERCA I ESTUDIS AVANÇATS (ICREA)

ICREA, the Catalan Institute for Research and Advanced Studies, is a foundation supported by the Catalan Government through the Catalan Ministry of Economy and Knowledge that aims to recruit top scientists for the Catalan R&D+I system. Currently IDIBAPS has 7 ICREA Research Professors and 1 ICREA Academy Professor:

Bart Bijnens
Translational computing in cardiology group leader

Josep Dalmau
Pathogenesis of autoimmune neuronal disorders group leader

Josep M. Llovet
Translational research in hepatic oncology group leader

José Ignacio Martín-Subero
Biomedical epigenomics group leader

Albert Pol
Lipid trafficking and disease group leader

Antonio Postigo
Transcriptional regulation of gene expression group leader

María Victoria Sánchez-Vives
Systems neuroscience group leader

Elías Campo (ICREA Academy)
Molecular pathology of lymphoid neoplasms group leader

IDIBAPS 80/20 PROGRAMME

With the final mission to strengthen translational clinical research, IDIBAPS launched this program in 2013. The 80/20 researchers are consolidated clinician scientists from Hospital Clinic and IDIBAPS with strategic research projects to develop. The beneficiaries of this program release 30 hours of their weekly care activities (80% of a full-time dedication) to dedicate them to research It is a 3-year position extendable for 2 additional years prior positive evaluation.

Maria Cinta Cid
Systemic vasculitis group

Josep M. Miró
Endocarditis. Cardiovascular infections. Experimental model group

IDIBAPS 50/50 PROGRAMME

With the final mission to strengthen translational clinical research, IDIBAPS and Hospital Clínic de Barcelona started in 2012 this pioneering program designed to facilitate the combination of research and clinical activity. The 50/50 researchers are young medical staff specialists (MD) with a strong research career (PhD) built up, at least in part, in the most prestigious foreign research centers. These junior clinician scientists are called to be the future translational research group leaders that this institution will need.

Felicia Alexandra Hanzu
Endocrine disorders: crosstalk between molecular and metabolic determinants group leader

Ignacio Revuelta
Translational research in posttransplant neoplasia group leader

Isabel Blanco
Translational research in pulmonary vascular diseases: cell proliferation and apoptotic mechanisms in pulmonary arterial hypertension group leader

Gisela Sugranyes
Multimodal neuroimaging in high risk and early psychosis group leader

Carlos Fernández de Larrea
Mechanisms of progression in monoclonal gammopathies group leader

Eduard Guasch
Arrhythmias and physical activity group leader

Sara Llufriu
Advanced imaging in neuroimmunological diseases group leader

PHD4MD PROGRAMME

The health system requires an increasing number of clinician-scientists with a deep understanding of research and medicine to ensure that discoveries in fundamental research can reach clinical practice. The objective of the PhD4MD programme is to provide medical doctors with advanced hands-on training on the cutting-edge fields and technologies. Ultimately, the medical professionals enrolled in the program will obtain their PhD degree from one of the associated Universities.

Medical professionals who enrol in the PhD4MD programme carry out a project in translational research jointly coordinated by a basic and a clinical research investigators, belonging to one of the four participating institutions: the CRG (Centre for Genomic Regulation), the IRB Barcelona, the IDIBAPS and the VHIR (Vall d'Hebron Research Institute).

The PhD4MD programme was launched for the first time in 2015. During this year, 4 awardees of the programme have been working at IDIBAPS.

Irene López

PROJECT

Splicing factor mutations in hematological malignancies.

PRINCIPAL INVESTIGATORS

Dolors Colomer (IDIBAPS) and Juan Valcárcel (CRG)

Alexandra Pérez

PROJECT

Multiple system atrophy: synuclein regulation and biomarkers discovery.

PRINCIPAL INVESTIGATORS

M José Martí (IDIBAPS) and Gian Tartaglia (CRG)

Francisco Aya

PROJECT

Targeting of BRAF mutant mRNA alternative splicing in melanoma.

PRINCIPAL INVESTIGATORS

Ana Arance (IDIBAPS) and Juan Valcárcel (CRG)

Fernanda Inés Hernández

PROJECT

Cellular senescense in fibrosing interstitial lung diseases

PRINCIPAL INVESTIGATORS

Jacobo Sellarés (IDIBAPS) and Manuel Serrano (IRB)

BITRECS PROGRAMME

Bitrecs

Biomedicine international training research programme for excellent clinician-scientists

Obra Social Fundación "la Caixa"

WEB

www.bitrecs.idibaps.org

BITRECS, Biomedicine international training research programme for excellent clinician-scientists, aims to recruit excellent and highly motivated postdoctoral clinician-scientists to help them become clinician-scientist leaders in the future.

This 60-month project (2017-2022) has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 754550 and from "La Caixa" Foundation (ID 100010434), under the agreement LCF/PR/GN18/50310006.

BITRECS fellows perform their own research projects and focus on their training and career development guided by an IDIBAPS Principal investigator and, in some cases, also by one co-Principal investigator from another institution. They can follow an incoming scheme (36-month fellowship at IDIBAPS) or an outgoing scheme (12-18 month outgoing stay in other worldwide research institutions that has to be followed by a 18-24 month period at IDIBAPS).

Marco Antonio Alba

PROJECT

Development of a 3D model of granulomatous vasculitis: a research tool for investigating immunopathogenic mechanisms of granulomatosis with polyangiitis.

PRINCIPAL INVESTIGATOR/S

Maria Cinta Cid (IDIBAPS)

Helena Ariño

PROJECT

Phenotyping encephalitis through electronic health records (EHR): a computational approach.

PRINCIPAL INVESTIGATOR/S

Josep Dalmau (IDIBAPS)
Robert Stewart (King's College London, United Kingdom)

Lorna Leal

PROJECT

Preparedness for the implementation of preventive and therapeutic vaccine clinical trials: from a specialized immunology laboratory to the planning of clinical trial structures in Africa.

PRINCIPAL INVESTIGATOR/S

Felipe Garcia (IDIBAPS)
Sheena McComack (Imperial College of London and University College London, the United Kingdom)

Gianluigi Li Bassi

PROJECT

The Covid-19 Critical Care Consortium Observational Study and New frontiers in Acute Respiratory Distress Syndrome from Translational Pre-clinical Studies.

PRINCIPAL INVESTIGATOR/S

Antoni Torres (IDIBAPS)
John Fraser (The Prince Charles Hospital, Australia)

Luis Gerardo Rodríguez

PROJECT

BCMA and SLAMF3 (CD229) chimeric antigen receptor T-cell immunotherapy in multiple myeloma.

PRINCIPAL INVESTIGATOR/S

Carlos Ferández de Larrea (IDIBAPS)
Michael Hudecek (University of Würzburg, Germany)

Isabel Valli

PROJECT

Neurodevelopmental influences in youth at high risk for psychosis: a multimodal diagnostic and prognostic model integrating genetic, environmental and neuroimaging data.

PRINCIPAL INVESTIGATOR/S

Gisela Sugranyes (IDIBAPS)

Norma Verdolini

PROJECT

Prodromes and predictors of bipolar disorder: a longitudinal evaluation of patients presenting a first manic episode.

PRINCIPAL INVESTIGATOR/S

Eduard Vieta (IDIBAPS)

Research and innovation outputs

Scientific publications

Publication output and indicators.

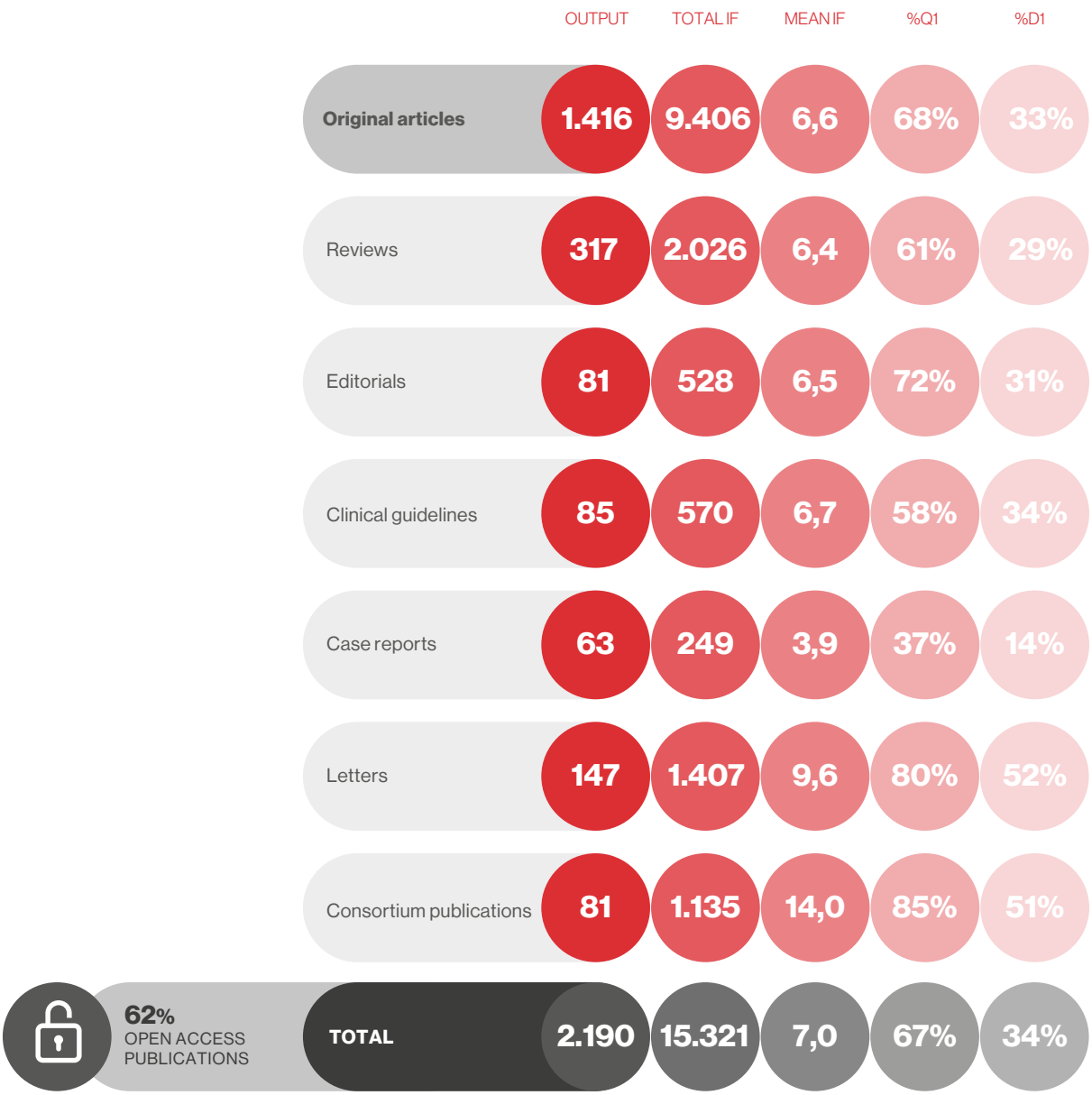


FIGURE LEGEND

Output
Total number of documents published in scholarly journals indexed in the ISI Web of Science.

Total IF
Accumulated impact factor.

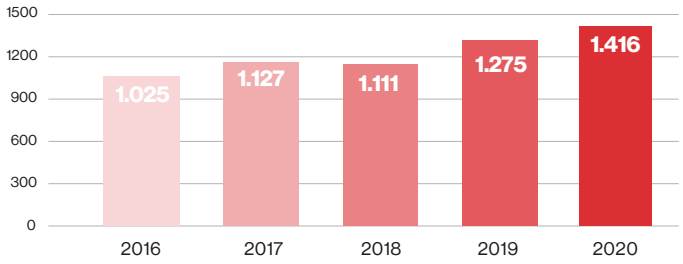
Mean IF
Mean impact factor.

% Q1
% of publications published in journals ranked in the first quartile (top 25%) of their category as ordered by the 2019 Journal Citation Reports.

% D1
% of publications published in journals ranked in the first decile (top 10%) of their category as ordered by the 2019 Journal Citation Reports.

Evolution of the total number of original articles (A) and the total number of original articles per area (B).

A) Number of original articles



B) Number of original articles per area

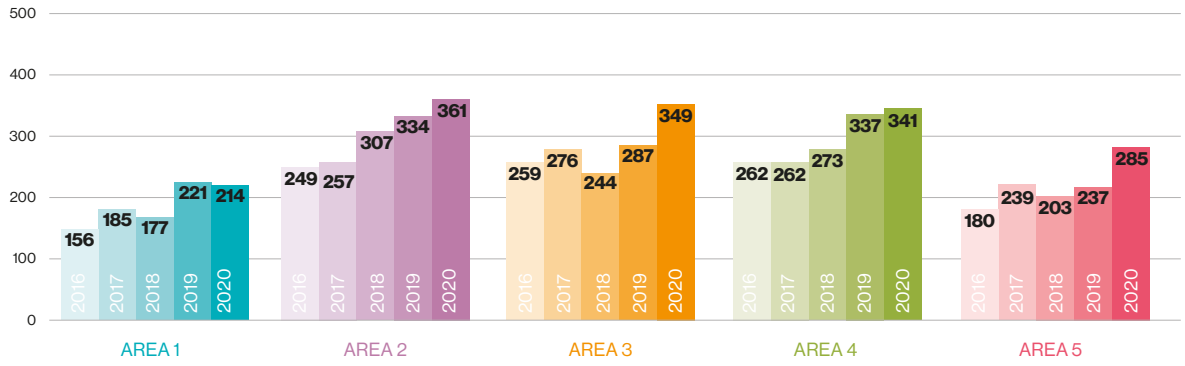
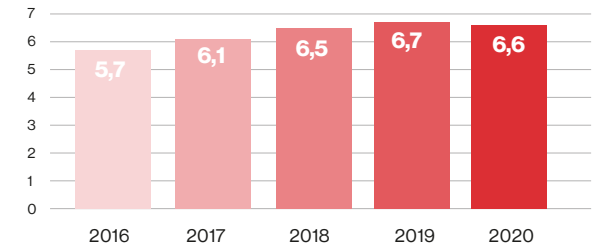


FIGURE LEGEND

Only original articles were taken into consideration. Publications resulting from collaboration between teams from different areas have been counted once for each area, so the sum of the articles per area is higher than the total.

Evolution of the mean IF (A) and % Q1 (B).

A) Mean IF



B) % Q1

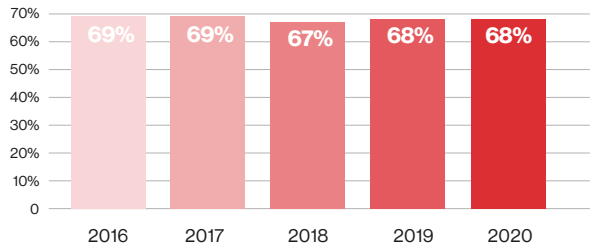


FIGURE LEGEND

Only original articles were taken into consideration. **%Q1**: % of publications published in journals ranked in the first quartile (top 25%) of their category as ordered by the 2019 Journal Citation Reports.

Original articles in the highest impact factor journals (IF>10).

206

Number of original articles in IF>10 journals.
(see table A).

56

Originals with IDIBAPS main contribution.
(see table B).

TABLE A

JOURNAL	IF	Total original articles
New England Journal of Medicine	74,699	**5**
Lancet	60,390	**2**
JAMA-Journal of The American Medical Association	45,540	**1**
Science	41,846	**1**
Cell	38,637	**1**
Nature Medicine	36,130	**2**
Lancet Oncology	33,752	**4**
Journal of Clinical Oncology	32,956	**5**
Lancet Neurology	30,039	**2**
Cancer Discovery	29,497	**1**
Nature Genetics	27,605	**1**
Lancet Respiratory Medicine	25,094	**3**
JAMA Oncology	24,799	**5**
Lancet Infectious Diseases	24,446	**1**
Circulation	23,603	**4**
European Heart Journal	22,673	**4**
Lancet Global Health	21,597	**1**
Cell Metabolism	21,567	**1**
Journal of The American College of Cardiology	20,589	**7**
Journal of Hepatology	20,582	**20**
Nature Immunology	20,479	**1**
Nature Neuroscience	20,071	**1**
Gut	19,819	**5**
European Urology	18,728	**1**
Annals of Oncology	18,274	**1**
Blood	17,794	**8**
Intensive Care Medicine	17,679	**3**
American Journal of Respiratory and Critical Care Medicine	17,452	**2**
Gastroenterology	17,373	**12**
Alzheimers & Dementia	17,127	**4**
Science Translational Medicine	16,304	**1**
Annals of The Rheumatic Diseases	16,102	**4**
Diabetes Care	16,019	**1**
Lancet HIV	14,813	**1**
Lancet Gastroenterology & Hepatology	14,789	**1**
Hepatology	14,679	**10**
Circulation Research	14,467	**1**
Acta Neuropathologica	14,256	**1**
American Journal of Psychiatry	14,119	**1**
JAMA Surgery	13,625	**1**
JAMA Neurology	13,608	**2**
Signal Transduction and Targeted Therapy	13,493	**1**
Journal of Thoracic Oncology	13,357	**1**
Science Advances	13,117	**1**
Molecular Psychiatry	12,384	**3**
European Respiratory Journal	12,339	**8**
Nature Communications	12,121	**12**
Biological Psychiatry	12,095	**1**
Basic Research in Cardiology	11,981	**2**
Journal of Clinical Investigation	11,864	**4**
Journal of Experimental Medicine	11,743	**2**
Journal of The National Cancer Institute	11,577	**1**
Brain	11,337	**3**
Medical Image Analysis	11,148	**2**
Genome Research	11,093	**1**
Journal of Hematology & Oncology	11,059	**2**
Genome Biology	10,806	**1**
Cell Death and Differentiation	10,717	**1**
American Journal of Human Genetics	10,502	**1**
Lancet Haematology	10,406	**1**
Biosensors & Bioelectronics	10,257	**1**
Journal for Immunotherapy of Cancer	10,252	**5**
Neuro-Oncology	10,247	**2**
Journal of Allergy and Clinical Immunology	10,228	**1**
American Journal of Gastroenterology	10,171	**3**
Annals of Surgery	10,130	**1**
Clinical Cancer Research	10,107	**12**
TOTAL		**206**

TABLE B

AUTHORS	TITLE	REFERENCE	IF
Bosch M, Sánchez-Álvarez M, Fajardo A, ..., Marí M, Morales-Paytuví F, Tort O, Gubern A, ..., Català C, Lozano F, Tebar F, Enrich C, ..., **Pol A**	**Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense.**	*Science 370(6514):eaay8085*	**41,846**
Prat A, Saura C, Pascual T, ..., Muñoz M, ..., González Farré B, ..., Galván P, Chic N, ..., Ciruelos E, Villagrasa P, Gavilá J	**Ribociclib plus letrozole versus chemotherapy for postmenopausal women with hormone receptor-positive, HER2-negative, luminal B breast cancer (CORALLEEN): an open-label, multicentre, randomised, phase 2 trial.**	*Lancet Oncology 21(1):33-43*	**33,752**
Prat A; Guarneri V; Paré L; ...;Chic N; González-Farré B; ...; Sanfeliu E; ...; Muñoz M; ...; Brasó-Maristany F; ...; Vidal M; ...; Adamo B; ...; Conte B; ...; Schettini F...; Tagliafico E; Parker JS; Conte P	**A multivariable prognostic score to guide systemic therapy in early-stage HER2-positive breast cancer: a retrospective study with an external evaluation.**	*Lancet Oncology 21(11):1455-1464*	**33,752**
Finn RS; Ikeda M; Zhu AX; Sung MW; Baron AD; Kudo M; Okusaka T; Kobayashi M; Kumada H; Kaneko S; Pracht M; Mamontov K; Meyer T; Kubota T; Dutcus CE; Saito K; Siegel AB; Dubrovsky L; Mody K; **Llovet JM**	**Phase Ib Study of Lenvatinib Plus Pembrolizumab in Patients With Unresectable Hepatocellular Carcinoma.**	*Journal of Clinical Oncology 38(26):2960-2970*	**32,956**
Armangue T, Olivé-Cirera G, Martínez-Hernandez E, ..., Ruiz-Garcia R, ..., Ariño H, ..., Graus F, Saiz A, **Dalmau J**, Spanish Pediatric anti-MOG Study Group	**Associations of paediatric demyelinating and encephalitic syndromes with myelin oligodendrocyte glycoprotein antibodies: a multicentre observational study.**	*Lancet Neurology 19(3):234-246*	**30,039**
Kuehl R, Morata L, Boeing C, ..., Wilson P, Kaasch AJ, **Soriano A**, International Staphylococcus aureus collaboration study group and the ESCMID Study Group for Bloodstream Infections, Endocarditis and Sepsis	**Defining persistent Staphylococcus aureus bacteraemia: secondary analysis of a prospective cohort study.**	*Lancet Infectious Diseases 20(12):1409-1417*	**24,446**
Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, **Miró JM**, GAMES Investigators	**A Contemporary Picture of Enterococcal Endocarditis.**	*Journal of The American College of Cardiology 75(5):482-494*	**20,589**
Montal R, Sia D, Montironi C, ..., Esteban-Fabró R, Pinyol R, Torres-Martin M, Bassaganyas L, Moeini A, Peix J, ..., Fuster J, Villanueva A, Schwartz M, **Llovet JM**	**Molecular classification and therapeutic targets in extrahepatic cholangiocarcinoma.**	*Journal of Hepatology 73(2):315-327*	**20,582**
Bassegoda O, Huelin P, Ariza X, Solé C, Juanola A, Gratacós-Ginès J, Carol M, Graupera I, Pose E, Napoleone L, Albertos S, de Prada G, Cervera M, Fernández J, Fabrellas N, Poch E, Solà E, **Ginès P**	**Development of chronic kidney disease after acute kidney injury in patients with cirrhosis is common and impairs clinical outcomes.**	*Journal of Hepatology 72(6):1132-1139*	**20,582**
López-Vicario C, Checa A, Urdangarin A, Aguilar F, Alcaraz-Quiles J, Caraceni P, Amorós A, Pavesi M, Gómez-Cabrero D, Trebicka J, Oettl K, Moreau R, Planell N, Arroyo V, Wheelock CE, **Clària J**	**Targeted lipidomics reveals extensive changes in circulating lipid mediators in patients with acutely decompensated cirrhosis.**	*Journal of Hepatology 73(4):817-828*	**20,582**
Gulfo J, Rotondo F, Ávalos de León CG, Cornide-Petronio ME, Fuster C, Gracia-Sancho J, Jiménez-Castro MB, **Peralta C**	**FGF15 improves outcomes after brain dead donor liver transplantation with steatotic and non-steatotic grafts in rats.**	*Journal of Hepatology 73(5):1131-1143*	**20,582**
Lens S, Baiges A, Alvarado-Tapias E, LLop E, Martinez J, Fortea JI, Ibáñez-Samaniego L, Mariño Z, Rodríguez-Tajes S, Gallego A, Bañares R, Puente Á, Albillos A, Calleja JL, Torras X, Hernández-Gea V, Bosch J, Villanueva C, García-Pagán JC, **Forns X**	**Clinical outcome and hemodynamic changes following HCV eradication with oral antiviral therapy in patients with clinically significant portal hypertension.**	*Journal of Hepatology 73(6):1415-1424*	**20,582**
Rodríguez-Tajes S, Pocurull A, Castillo J, Casanova G, Vega L, Lens S, Mariño Z, Londoño MC, Forner A, Torres F, **Forns X**	**Hepatitis C-related cirrhosis will be a marginal cause of hospital admissions in the near future.**	*Journal of Hepatology 73(6):1360-1367*	**20,582**
Barbosa J; Stein H; Martinez RL; Galan-Gadea A; Li S; Dalmau J; Adam KCS; Valls-Solé J; Constantinidis C; **Compte A**	**Interplay between persistent activity and activity-silent dynamics in the prefrontal cortex underlies serial biases in working memory.**	*Nature Neuroscience 23(8):1016-1024*	**20,071**
Ramis-Zaldivar JE, **Gonzalez-Farré B,** Balagué O, ..., Nadeu F, Salmerón-Villalobos J ..., Rivas-Delgado A, ..., Clot G, ..., López-Guillermo A, ..., Campo E, **Salaverria I**	**Distinct molecular profile of IRF4-rearranged large B-cell lymphoma.**	*Blood 135(4):274-286*	**17,794**

Nadeu F, Martin-Garcia D, Clot G, ..., Duran-Ferrer M, ..., Vilarrasa-Blasi R, Kulis M, ..., López C, Chapaprieta V, ..., Aymerich M, Jares P, ..., Colomer D, ..., Gine E, López-Guillermo A, ..., Martin-Subero JI, ..., **Beà S**, **Campo E**	**Genomic and epigenomic insights into the origin, pathogenesis and clinical behavior of mantle cell lymphoma subtypes.**	*Blood 136(12):1419-1432*	**17,794**
Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network	**Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.**	*Intensive Care Medicine 46(12):2200-2211*	**17,679**
Martinez-Garcia MA, Faner R, Oscullo G, de la Rosa D, Soler-Cataluña JJ, Ballester M, **Agusti A**	**Inhaled Steroids, Circulating Eosinophils, Chronic Airway Infection and Pneumonia Risk in Chronic Obstructive Pulmonary Disease: A Network Analysis.**	*American Journal of Respiratory And Critical Care Medicine 201(9):1078-1085*	**17,452**
Breyer-Kohansal R; Faner R; Breyer MK; Ofenheimer A; Schrott A; Studnicka M; Wouters EFM; Burghuber OC; Hartl S; **Agusti A**	**Factors Associated with Low Lung Function in Different Age Bins in the General Population.**	*American Journal of Respiratory And Critical Care Medicine 202(2):292-296*	**17,452**
Rivero-Sánchez L, Arnau-Collell C, Herrero J, ..., Ocaña T, Moreira L, Carballal S, Sánchez A, Jung G, Castells A, Llach J, Balaguer F, **Pellisé M**, EndoCAR group from Spanish Gastroenterology Association (AEG) and Spanish Society of Digestive Endoscopy (SEED)	**White-light Endoscopy is Adequate for Lynch Syndrome Surveillance in a Randomized and Non-inferiority Study.**	*Gastroenterology 158(4):895-904.e1*	**17,373**
Duran-Sanchon S, Moreno L, Augé JM, Serra-Burriel M, Cuatrecasas M, Moreira L, Martín A, Serradesanferm A, Pozo À, Costa R, Lacy A, Pellisé M, Lozano JJ, Gironella M, **Castells A**	**Identification and validation of microRNA profiles in fecal samples for detection of colorectal cancer.**	*Gastroenterology 158(4):947-957.e4*	**17,373**
Sandborn WJ; Peyrin-Biroulet L; Zhang J; Chiorean M; Vermeire S; Lee SD; Kühbacher T; Yacyshyn B; Cabell CH; Naik SU; Klassen P; **Panés J**	**Efficacy and Safety of Etrasimod in a Phase 2 Randomized Trial of Patients with Ulcerative Colitis.**	*Gastroenterology 158(3):550-561*	**17,373**
Sandborn WJ; Feagan BG; Loftus EV; ...; Pangan AL; Lacerda AP; **Panes J**	**Efficacy and Safety of Upadacitinib in a Randomized Trial of Patients With Crohn's Disease.**	*Gastroenterology 158(8):2123-2138.e8*	**17,373**
Mejias M, Gallego J, Naranjo-Suarez S, Ramirez M, Pell N, Manzano A, Suñer C, Bartrons R, Mendez R, **Fernandez M**	**CPEB4 Increases Expression of PFKFB3 to Induce Glycolysis and Activate Mouse and Human Hepatic Stellate Cells, Promoting Liver Fibrosis.**	*Gastroenterology 159(1):273-288*	**17,373**
Bonjoch L, Franch-Expósito S, Garre P, ..., Muñoz J, Arnau-Collell C, Díaz-Gay M, Gratacós-Mulleras A, Raimondi G, Esteban-Jurado C, Soares de Lima Y, Herrera-Pariente C, Cuatrecasas M, Ocaña T, Castells A, Fillat C, ..., Balaguer F, Caldés T, Valle L, **Castellví-Bel S**	**Germline Mutations in FAF1 Are Associated With Hereditary Colorectal Cancer.**	*Gastroenterology 159(1):227-240*	**17,373**
Antonell A, Tort-Merino A, Ríos J, Balasa M, Borrego-Écija S, Auge JM, Muñoz-García C, Bosch B, Falgàs N, Rami L, Ramos-Campoy O, Blennow K, Zetterberg H, Molinuevo JL, Lladó A, **Sánchez-Valle R**	**Synaptic, axonal damage and inflammatory cerebrospinal fluid biomarkers in neurodegenerative dementias.**	*Alzheimers & Dementia 16(2):262-272*	**17,127**
Casulleras M, Flores-Costa R, Duran-Güell M, Alcaraz-Quiles J, Sanz S, Titos E, López-Vicario C, Fernández J, Horrillo R, Costa M, de la Grange P, Moreau R, Arroyo V, **Clària J**	**Albumin internalizes and inhibits endosomal TLR signaling in leukocytes from patients with decompensated cirrhosis.**	*Science Translational Medicine 12(566):eaax5135*	**16,304**
Castellanos-Moreira R; Rodríguez-García SC; Gomara MJ; Ruiz-Esquide V; Cuervo A; Casafont-Solé I; Ramírez J; Holgado S; Gómez-Puerta JA; Cañete JD; Haro I; **Sanmarti R**	**Anti-carbamylated proteins antibody repertoire in rheumatoid arthritis: Evidence of a new autoantibody linked to interstitial lung disease.**	*Annals of the Rheumatic Diseases 79(5):587-594*	**16,102**
Blanco JL; Ambrosioni J; Garcia F; Martínez E; Soriano A; Mallolas J; **Miro JM**	**COVID-19 in patients with HIV: clinical case series.**	*Lancet HIV 7(5):e314-e316*	**14,813**
Pose E, Napoleone L, Amin A, ..., Carol M, Pich J, ..., Domenech G, ..., Torres F, ..., Abraldes JG, Solà E, **Ginès P**	**Safety of two different doses of simvastatin plus rifaximin in decompensated cirrhosis (LIVERHOPE-SAFETY): a randomised, double-blind, placebo-controlled, phase 2 trial.**	*Lancet Gastroenterology & Hepatology 5(1):31-41*	**14,789**
Fernández-Varo G, Perramón M, Carvajal S, Oró D, Casals E, Boix L, Oller L, Macías-Muñoz L, Marfà S, Casals G, Morales-Ruiz M, Casado P, Cutillas PR, Bruix J, Navasa M, Fuster J, Garcia-Valdecasas JC, Pavel MC, Puntes V, **Jiménez W**	**Bespoken nanoceria: A new effective treatment in experimental hepatocellular carcinoma.**	*Hepatology 72(4):1267-1282*	**14,679**
Alvarez-Guaita A, Blanco-Muñoz P, Meneses-Salas E, Wahba M, Pollock AH, Jose J, Casado M, Bosch M, Artuch R, Gaus K, Lu A, Pol A, Tebar F, Moss SE, Grewal T, **Enrich C**, **Rentero C**	**Annexin A6 is critical to maintain glucose homeostasis and survival during liver regeneration.**	*Hepatology 72(6):2149-2164*	**14,679**

Baiges A, Turon F, Simón-Talero M, ..., Hernández-Gea V, ..., Valla D, Genescà J, **García-Pagán JC**, REHEVASC, VALDIG an EASL consortium, Abernethy group	**Congenital Extrahepatic Portosystemic Shunts (Abernethy Malformation): An International Observational Study.**	*Hepatology 71(2):658-669*	**14,679**
Andorrà M; Alba-Arbalat S; Camos-Carreras A; ...; Pulido-Valdeolivas I; ...; Guerrero-Zamora AM; ...; Llufriu S; ...; Martinez-Hernandez E; Armangue T; Blanco Y; Villoslada P; Sanchez-Dalmau B; Saiz A; **Martinez-Lapiscina EH**	**Using Acute Optic Neuritis Trials to Assess Neuroprotective and Remyelinating Therapies in Multiple Sclerosis.**	*JAMA Neurology 77(2):234-244*	**13,608**
Mezquita L., Jové M., Nadal E., ..., Lázaro C., Caron O., Besse B.	**High Prevalence of Somatic Oncogenic Driver Alterations in Patients With NSCLC and Li-Fraumeni Syndrome.**	*Journal of Thoracic Oncology 15(7):1232-1239*	**13,357**
Alcaraz-Serrano V, **Gimeno-Santos E**, Scioscia G, Gabarrús A, Navarro A, Herrero-Cortina B, Amaro R, Fernández-Barat L, **Torres A**	**Association between physical activity and risk of hospitalisation in bronchiectasis.**	*European Respiratory Journal 55(6):1902138*	**12,339**
Garmendia O, Rodríguez-Lazaro MA, Otero J, Phan P, Stoyanova A, Dinh-Xuan AT, Gozal D, Navajas D, **Montserrat JM**, **Farré R**	**Low-cost, easy-to-build non-invasive pressure support ventilator for under-resourced regions: open source hardware description, performance and feasibility testing.**	*European Respiratory Journal 55(6):2000846*	**12,339**
Cilloniz C, Dominedo C, Peroni HJ, Di Giannatale P, Garcia-Vidal C, Gabarrus A, Liapikou A, Ceccato A, **Torres A**	**Difficult to Treat Microorganisms in Patients Over 80 Years with Community-Acquired Pneumonia: The Prevalence of PES Pathogens.**	*European Respiratory Journal 56(4):2000773*	**12,339**
Ryan S, Cummins EP, Farre R, Gileles-Hillel A, Jun JC, Oster H, Pepin JL, Ray DW, Reutrakul S, Sanchez-de-la-Torre M, Tamisier R, **Almendros I**	**Understanding the Pathophysiological Mechanisms of Cardiometabolic Complications in Obstructive Sleep Apnoea - Towards Personalised Treatment Approaches.**	*European Respiratory Journal 56(2):1902295*	**12,339**
Brasó-Maristany F., Griguolo G., Pascual T., ..., Adamo B., ..., Muñoz M., Chic N., Galván P., ..., Cortés J., Ciruelos E., **Prat A.**	**Phenotypic changes of HER2-positive breast cancer during and after dual HER2 blockade.**	*Nature Communications 11(1):385*	**12,121**
Hermoso-Mendizabal A., Hyafil A., Rueda-Orozco P.E., Jaramillo S., Robbe D., **de la Rocha J.**	**Response outcomes gate the impact of expectations on perceptual decisions.**	*Nature Communications 11(1):1057*	**12,121**
Nadeu F, Mas-de-Les-Valls R, Navarro A, Royo R, Martín S, Villamor N, Suárez-Cisneros H, Mares R, Lu J, Enjuanes A, Rivas-Delgado A, Aymerich M, Baumann T, Colomer D, Delgado J, Morin RD, Zenz T, Puente XS, Campbell PJ, Beà S, Maura F, **Campo E**	**IgCaller for reconstructing immunoglobulin gene rearrangements and oncogenic translocations from whole-genome sequencing in lymphoid neoplasms.**	*Nature Communications 11(1):3390*	**12,121**
Stein H; Barbosa J; Rosa-Justicia M; Prades L; Morató A; Galan-Gadea A; Ariño H; Martinez-Hernandez E; Castro-Fornieles J; Dalmau J; **Compte A**	**Reduced serial dependence suggests deficits in synaptic potentiation in anti-NMDAR encephalitis and schizophrenia.**	*Nature Communications 11(1):4250*	**12,121**
Fernandez-Ruiz R; García-Alamán A; Esteban Y; Mir-Coll J; Serra-Navarro B; Fontcuberta-PiSunyer M; Broca C; Armanet M; Wojtusciszyn A; Kram V; Young MF; Vidal J; Gomis R; **Gasa R**	**Wisp1 is a circulating factor that stimulates proliferation of adult mouse and human beta cells.**	*Nature Communications 11(1):5982*	**12,121**
Guedan S, Madar A, Casado-Medrano V, Shaw C, Wing A, Liu F, Young RM, June CH, Posey AD	**Single residue in CD28-costimulated CAR-T cells limits long-term persistence and antitumor durability.**	*Journal of Clinical Investigation 130(6):3087-3097*	**11,864**
Umeshappa, Channakeshava Sokke; Mbongue, Jacques; Singha, Santiswarup; Mohapatra, Saswat; Yamanouchi, Jun; Lee, Justin A; Nanjundappa, Roopa Hebbandi; Shao, Kun; Christen, Urs; Yang, Yang; Ellestad, Kristofor K; **Santamaria, P**	**Ubiquitous antigen-specific T regulatory type 1 cells variably suppress hepatic and extrahepatic autoimmunity.**	*Journal of Clinical Investigation 130(4):1823-1829*	**11,864**
Prat A; Pascual T; De Angelis C; ...; Adamo B; Brasó-Maristany F; Vidal M; ...; Galván P; ...; Guarneri V; Osborne CK; Rimawi MF	**HER2-Enriched Subtype and ERBB2 Expression in HER2-Positive Breast Cancer Treated with Dual HER2 Blockade.**	*Journal of The National Cancer Institute 112(1):46-54*	**11,577**
Mannara F, Radosevic M, Planagumà J, Soto D, Aguilar E, García-Serra A, Maudes E, Pedreño M, Paul S, Doherty J, Quirk M, Dai J, Gasull X, Lewis M, **Dalmau J**	**Allosteric modulation of NMDA receptors prevents the antibody effects of patients with anti-NMDAR encephalitis.**	*Brain 143(9):2709-2720*	**11,337**
Ordoñez R, **Kulis M**, Russiñol N, Chapaprieta V, ..., García-Torre B, Charalampopoulou S, Clot G, Beekman R, ..., Duran-Ferrer M, Verdaguer-Dot N, Vilarrasa-Blasi R, Soler-Vila P, ..., Campo E, ..., Agirre X, Prosper F, **Martin-Subero JI**	**Chromatin activation as a unifying principle underlying pathogenic mechanisms in multiple myeloma.**	*Genome Research 30(9):1217-1227*	**11,093**
Valente T, Dentesano G, Ezquerra M, Fernandez-Santiago R, Martinez-Martin J, Gallastegui E, Domuro C, Compta Y, Martí MJ, Bachs O, Márquez-Kisinousky L, Straccia M, Solà C, **Saura J**	**CCAAT/enhancer binding protein δ is a transcriptional repressor of α-synuclein.**	*Cell Death and Differentiation 27(2):509-524*	**10,717**

Simões IT; Aranda F; Casadó-Llombart S; Velasco-de Andrés M; Català C; Álvarez P; Consuegra-Fernández M; Orta-Mascaró M; Merino R; Merino J; Alberola-Ila J; González-Aseguinolaza G; Carreras E; Martínez V; **Lozano F**	**Multifaceted effects of soluble human CD6 in experimental cancer models.**	*Journal for Immunotherapy of Cancer 8(1):e000172*	**10,252**
Reig A, Norman GL, Garcia M, Shums Z, Ruiz-Gaspà S, Bentow C, Mahler M, Romera MA, Vinas O, **Pares A**	**Novel Anti-Hexokinase 1 Antibodies Are Associated With Poor Prognosis in Patients With Primary Biliary Cholangitis.**	*American Journal of Gastroenterology 115(10):1634-1641*	**10,171**
Lozano E, Mena MP, Díaz T, Martin-Antonio B, León S, Rodríguez-Lobato LG, Oliver-Caldés A, Cibeira MT, Bladé J, Prat A, Rosiñol L, **Fernández de Larrea C**	**Nectin-2 expression on malignant plasma cells is associated with better response to TIGIT blockade in multiple myeloma.**	*Clinical Cancer Research 26(17):4688-4698*	**10,107**
Bassaganyas L, Pinyol R, Esteban-Fabró R, Torrens L, Torrecilla S, Willoughby CE, Franch-Expósito S, Vila-Casadesús M, Salaverria I, Montal R, Mazzaferro V, Camps J, Sia D, **Llovet JM**	**Copy number alteration burden differentially impacts immune profiles and molecular features of hepatocellular carcinoma.**	*Clinical Cancer Research 26(23):6350-6361*	**10,107**
Prat A, Tsai YH, Pascual T, Paré L, Adamo B, Vidal M, Brasó-Maristany F, Galván P, Brase JC, Rodrik-Outmezguine V, Johnston S, Ciruelos E, Parker JS	**A prognostic model based on PAM50 and clinical variables (PAM50MET) for metastatic hormone-receptor-positive HER2-negative breast cancer.**	*Clinical Cancer Research 26(23):6141-6148*	**10,107**
Ciruelos E, Villagrasa P, Pascual T, ..., Adamo B, ..., González-Farré B, Martínez D, Galván P, ..., Nuciforo P, Gonzalez X, **Prat A**	**Palbociclib and trastuzumab in HER2-positive advanced breast cancer: Results from the phase II SOLTI-1303 PATRICIA trial.**	*Clinical Cancer Research 26(22):5820-5829*	**10,107**

FIGURE LEGEND

Original articles with main author (first, last or corresponding author) from IDIBAPS (bold in the table).

Translation of knowledge and innovation

IDIBAPS–FCRB researchers have a final goal to benefit our society by getting new innovative products and services to market that without industrial partners would be unable to find the resources to reach the patients. Several collaboration agreements are signed every year between our scientists and Industry partners.

In this sense, several activities are a good proxy to analyse the translation of our research to the society: Clinical Guidelines, Clinical Trials and Technology Transfer agreements, including license agreements and creation of spin-offs.

CLINICAL GUIDELINES

Every year our researchers participate in the elaboration of international clinical guides that have a remarkable impact in patients' care and medical practice.

85 **Clinical guidelines published in 2020.**

AUTHORS	TITLE	REFERENCE	IF	Q/D1
Abdel-Mohsen M; Richman D; Siliciano RF; ...; Alcami J; ...; Riley JL; Tebas P; Montaner LJ; BEAT-HIV Delaney Collaboratory to Cure HIV-1 infection	**Recommendations for measuring HIV reservoir size in cure-directed clinical trials.**	*Nature Medicine 26(9):1339-1350*	**36,130**	Q1/D1
Brugada J, Katritsis DG, Arbelo E, ..., Sarquella-Brugada G, Suwalski P, Zaza A, ESC Scientific Document Group	**2019 ESC Guidelines for the management of patients with supraventricular tachycardiaThe Task Force for the management of patients with supraventricular tachycardia of the European Society of Cardiology (ESC).**	*European Heart Journal 41(5):655-720*	**22,673**	Q1/D1
Varma N, Marrouche NF, Aguinaga L, ..., Arbelo E, ..., Sridhar ARM, Stecker EC, Varosy PD	**HRS/EHRA/APHRS/LAHRS/ACC/AHA worldwide practice update for telehealth and arrhythmia monitoring during and after a pandemic.**	*Journal of the American College of Cardiology 76(11):1363-1374*	**20,589**	Q1/D1
Witjes, J Alfred; Babjuk, Marek; Bellmunt, Joaquim; ...; Ribal, Maria J; ...; Vilaseca, Antoni; ...; Williams, Andrew; Zigeuner, Richard; Horwich, Alan	**EAU-ESMO Consensus Statements on the Management of Advanced and Variant Bladder Cancer-An International Collaborative Multistakeholder Effort Under the Auspices of the EAU-ESMO Guidelines Committees.**	*European Urology 77(2):223-250*	**18,728**	Q1/D1
Rodriguez Socarrás M, Loeb S, Teoh JY, Ribal MJ, Bloemberg J, Catto J, N'Dow J, Van Poppel H, Gómez Rivas J	**Telemedicine and Smart Working: Recommendations of the European Association of Urology.**	*European Urology 78(6):812-819*	**18,728**	Q1/D1
Ribal MJ, Cornford P, Briganti A, ..., Van Poppel H, Wirth M, Sønksen J, N'Dow J; EAU Section Offices and the EAU Guidelines Panels.	**European Association of Urology Guidelines Office Rapid Reaction Group: An Organisation-wide Collaborative Effort to Adapt the European Association of Urology Guidelines Recommendations to the Coronavirus Disease 2019 Era.**	*European Urology 78(1):21-28*	**18,728**	Q1/D1
Keilholz U, Ascierto PA, Dummer R, ..., Arance A, ..., Puig S, ..., Tawbi H, Testori A, Michielin O	**ESMO consensus conference recommendations on the management of metastatic melanoma: the ESMO Guidelines Committee.**	*Annals of Oncology 31(11):1435-1448*	**18,274**	Q1/D1
Michielin O, van Akkooi A, Lorigan P, ..., Arance A, ..., Puig S, ..., Tawbi H, Testori A, Keilholz U	**ESMO consensus conference recommendations on the management of locoregional melanoma: the ESMO Guidelines Committee.**	*Annals of Oncology 31(11):1449-1461*	**18,274**	Q1/D1
Cardoso F, Paluch-Shimon S, Senkus E, ..., Prat A, ..., Norton L, Costa A, Winer EP	**5th ESO-ESMO international consensus guidelines for advanced breast cancer (ABC 5)†.**	*Annals of Oncology 31(12):1623-1649*	**18,274**	Q1/D1

Fakhouri F, Scully M, Provôt F, Blasco M, Coppo P, Noris M, Paizis K, Kavanagh D, Pène F, Quezada S, Hertig A, Kissling S, O'Brien P, Delmas Y, Alberio L, Winer N, Veyradier A, Cataland S, Frémeaux-Bacchi V, Loirat C, Remuzzi G, Tsatsaris V.	**Management of thrombotic microangiopathy in pregnancy and postpartum: report from an international working group.**	*Blood 136(19):2103-2117*	**17,794**	Q1/D1
Gossec L; Baraliakos X; Kerschbaumer A; ...; Canete JD; ...; Van den Bosch FE; van der Heijde D; Smolen JS	**EULAR recommendations for the management of psoriatic arthritis with pharmacological therapies: 2019 update.**	*Annals of the Rheumatic Diseases 79(6):700-712*	**16,102**	Q1/D1
Ramos-Casals M, Brito-Zerón P, Bombardieri S, ..., Kostov B, ..., Sisó-Almirall A, ..., Vitali C, Bowman S, Mariette X, EULAR-Sjögren Syndrome Task Force Group	**EULAR recommendations for the management of Sjögren's syndrome with topical and systemic therapies.**	*Annals of the Rheumatic Diseases 79(1):3-18*	**16,102**	Q1/D1
Hellmich B; Agueda A; Monti S; ...; Cid MC; ...; Watts R; Young C; Luqmani RA	**2018 Update of the EULAR recommendations for the management of large vessel vasculitis.**	*Annals of the Rheumatic Diseases 79(1):19-30*	**16,102**	Q1/D1
King, Gregory G; Bates, Jason; Berger, Kenneth, I; ...; Farre, Ramon; ...; Thamrin, Cindy; van den Berge, Maarten; Oostveen, Ellie	**Technical standards for respiratory oscillometry.**	*European Respiratory Journal 55(2):1900753*	**12,339**	Q1/D1
Nathan SD; Barbera JA; Gaine SP; Harari S; Martinez FJ; Olschewski H; Olsson KM; Peacock AJ; Pepke-Zaba J; Provencher S; Weissmann N; Seeger W	**Pulmonary hypertension in chronic lung disease and hypoxia.**	*European Respiratory Journal 53(1):1801914*	**12,339**	Q1/D1
Harjola VP, Parissis J, Bauersachs J, ..., Miró Ò, ..., Varpula M, Weinstein JM, Yilmaz MB	**Acute coronary syndromes and acute heart failure: a diagnostic dilemma and high-risk combination.**	*European Journal of Heart Failure 22(8):1298-1314*	**11,627**	Q1/D1
Chioncel O, Parissis J, Mebazaa A, ..., Miro O, ..., Ruschitzka F, Coats AJS, Seferovic P	**Epidemiology, Pathophysiology and Contemporary Management of Cardiogenic Shock - A position statement from the Heart Failure Association (HFA) of the European Society of Cardiology (ESC).**	*European Journal of Heart Failure 22(8):1315-1341*	**11,627**	Q1/D1
Bousquet J, Schünemann HJ, Togias A, ..., Mullol J, ..., Waserman S, Yorgancioglu A, Zuberbier T, Allergic Rhinitis and Its Impact on Asthma Working Group	**Next-generation Allergic Rhinitis and Its Impact on Asthma (ARIA) guidelines for allergic rhinitis based on Grading of Recommendations Assessment, Development and Evaluation (GRADE) and real-world evidence.**	*Journal of Allergy and Clinical Immunology 145(1):70-80.e3*	**10,228**	Q1/D1
Klimek L; Jutel M; Akdis C; ...; Mullol J; ... Yorgancioglu A; Matricardi P; Zuberbier T; ARIA-MASK study group	**Handling of allergen immunotherapy in the COVID-19 pandemic: An ARIA-EAACI statement.**	*Allergy 75(7):1546-1554*	**8,706**	Q1/D1
Ramirez JA, Musher DM, Evans SE, ..., Torres A, ..., Welte T, Witzenrath M, Wunderink R	**Management of Community-Acquired Pneumonia in Immunocompromised Adults: A Consensus Statement Regarding Initial Strategies.**	*Chest 158(5):1896-1911*	**8,308**	Q1/D1
Holm, Are M; Mehra, Mandeep R; Courtwright, Andrew; Teuteberg, Jeffrey; Sweet, Stuart; Potena, Luciano; Singer, Lianne G; Farrero, Marta; Shullo, Michael A; Benza, Raymond; Ensminger, Stephan; Aslam, Saima	**Ethical considerations regarding heart and lung transplantation and mechanical circulatory support during the COVID-19 pandemic: an ISHLT COVID-19 Task Force statement.**	*Journal of Heart and Lung Transplantation 39(7):619-626*	**7,865**	Q1/D1
Cordero E; Goycochea-Valdivia W; Mendez-Echevarria A; ...; Arostegui JI; ...; Santos-Pérez JL; Rodríguez-Gallego C; Neth O	**Executive Summary of the Consensus Document on the Diagnosis and Management of Patients with Primary Immunodeficiencies.**	*Journal of Allergy and Clinical Immunology-In Practice 8(10):3342-3347*	**7,574**	Q1
Gralnek IM, Hassan C, Beilenhoff U, ..., Pellisè M, ..., Siersema PD, Messmann H, Dinis-Ribeiro M	**ESGE and ESGENA Position Statement on gastrointestinal endoscopy and the COVID-19 pandemic.**	*Endoscopy 52(6):483-490*	**7,341**	Q1/D1
Hassan C, Antonelli G, Dumonceau JM, ..., Pellisé M, ..., van Hooft JE, Dinis-Ribeiro M, Quintero E	**Post-polypectomy colonoscopy surveillance: European Society of Gastrointestinal Endoscopy (ESGE) Guideline - Update 2020.**	*Endoscopy 52(8):687-700*	**7,341**	Q1/D1

Garbe C, Amaral T, Peris K, ..., Malvehy J, ..., Stratigos AJ, Vieira R, Zalaudek I, Eggermont AMM, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO), and the European Organization for Research and Treatment of Cancer (EORTC)	**European consensus-based interdisciplinary guideline for melanoma. Part 2: Treatment – Update 2019.**	*European Journal of Cancer 126():159-177*	**7,275**	Q1
Garbe C, Amaral T, Peris K, ..., Malvehy J, ..., Stratigos AJ, Vieira R, Zalaudek I, Eggermont AMM, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO), and the European Organization for Research and Treatment of Cancer (EORTC)	**European consensus-based interdisciplinary guideline for melanoma. Part 1: Diagnostics – Update 2019.**	*European Journal of Cancer 126():141-158*	**7,275**	Q1
Stratigos AJ, Garbe C, Dessinioti C, ..., Malvehy J, ..., van den Beuken-van Everdingen MHJ, Vieira R, Zalaudek I, Eggermont AMM, Grob JJ, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO) and the European Organization for Research and Treatment of Cancer (EORTC)	**European interdisciplinary guideline on invasive squamous cell carcinoma of the skin: Part 1. epidemiology, diagnostics and prevention.**	*European Journal of Cancer 128():60-82*	**7,275**	Q1
Stratigos AJ, Garbe C, Dessinioti C, ..., Malvehy J, ..., Zalaudek I, Eggermont AMM, Grob JJ, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO) and the European Organization for Research and Treatment of Cancer (EORTC)	**European interdisciplinary guideline on invasive squamous cell carcinoma of the skin: Part 2. Treatment.**	*European Journal of Cancer 128():83-102*	**7,275**	Q1
Yakoub-Agha I, Chabannon C, Bader P, ..., Urbano-Ispizua A, Hayden PJ, Kröger N	**Management of adults and children undergoing CAR t-cell therapy: best practice recommendations of the European Society for Blood and Marrow Transplantation (EBMT) and the Joint Accreditation Committee of ISCT and EBMT (JACIE).**	*Haematologica 105(2):297-316*	**7,116**	Q1/D1
Dholaria B; Savani BN; Labopin M; ...; Esteve J; ...; Ciurea SO; Nagler A; Mohty M	**Clinical applications of donor lymphocyte infusion from an HLA-haploidentical donor: Consensus recommendations from the Acute Leukemia Working Party of the EBMT.**	*Haematologica 105(1):47-58*	**7,116**	Q1/D1
Bai C; Chotirmall SH; Rello J; ...; Torres A; ...; Lee MM; Liebler J; McElvaney GN	**Updated guidance on the management of COVID-19: From an american thoracic society/european respiratory society coordinated international task force (29 July 2020).**	*European Respiratory Review : An Official Journal of the European Respiratory Society 29(157):200287*	**6,22**	Q1
Varma N, Marrouche NF, Aguinaga L, ..., Arbelo E, ..., Sridhar ARM, Stecker EC, Varosy PD	**HRS/EHRA/APHRS/LAHRS/ACC/AHA worldwide practice update for telehealth and arrhythmia monitoring during and after a pandemic.**	*Heart Rhythm 17(9):e255-e268*	**5,731**	Q1
Mackie SL; Dejaco C; Appenzeller S; ...; Cid MC; ...; Yacyshyn E; Ytterberg S; Dasgupta B	**British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis: executive summary.**	*Rheumatology 59(3):487-494*	**5,606**	Q1
Mackie SL; Dejaco C; Appenzeller S; ...; Cid MC; ...; Yacyshyn E; Ytterberg S; Dasgupta B	**British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis.**	*Rheumatology 59(3):e1-e23*	**5,606**	Q1
Lees CC; Stampalija T; Baschat A; ...; Figueras F; ...; Poon LC; Salomon LJ; Unterscheider J	**ISUOG Practice Guidelines: diagnosis and management of small-for-gestational-age fetus and fetal growth restriction.**	*Ultrasound in Obstetrics & Gynecology 56(2):298-312*	**5,571**	Q1/D1
Torres A; Barberán J; Ceccato A; Martin-Loeches I; Ferrer M; Menéndez R; Rigau D	**Hospital-Acquired Pneumonia. Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) Guidelines. 2019 Update.**	*Archivos de Bronconeumología 56 Suppl 1():11-19*	**4,957**	Q1
Menéndez R; Cilloniz C; España PP; Almirall J; Uranga A; Méndez R; Rigau D; **Torres A**	**Community-Acquired Pneumonia. Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) Guidelines. 2020 Update.**	*Archivos de Bronconeumología 56 Suppl 1():1-10*	**4,957**	Q1
Cinesi Gómez C; Peñuelas Rodríguez Ó; Luján Torné M; ...; Ferrer Monreal M; ...; Ferrer Roca R; Romero Berrocal A; **Ferrando Ortola C**	**Clinical Consensus Recommendations Regarding Non-Invasive Respiratory Support in the Adult Patient with Acute Respiratory Failure Secondary to SARS-CoV-2 infection.**	*Archivos de Bronconeumología 56 Suppl 2(2):11-18*	**4,957**	Q1
Bhatt NR, Czarniecki SW, Borgmann H, van Oort IM, Esperto F, Pradere B, van Gurp M, Bloemberg J, Darraugh J, Rouprêt M, Loeb S, N'Dow J, Ribal MJ, Giannarini G; EAU Guidelines Office Dissemination Committee.	**A Systematic Review of the Use of Social Media for Dissemination of Clinical Practice Guidelines.**	*European Urology Focus S2405-4569(20):30292-3*	**4,827**	Q1

Sharrack B; Saccardi R; Alexander T; ...; Rovira M; ...; Hagglund H; Henes J; Hiepe F	**Autologous haematopoietic stem cell transplantation and other cellular therapy in multiple sclerosis and immune-mediated neurological diseases: updated guidelines and recommendations from the EBMT Autoimmune Diseases Working Party (ADWP) and the Joint Accreditation Committee of EBMT and ISCT (JACIE).**	*Bone Marrow Transplantation 55(2):283-306*	**4,725**	Q1
Josep Brugada; Demosthenes G Katritsis; Elena Arbelo Lainez; ...; Piotr Suwalski; A Zarza Pérez; Andrew Grace	**Guía ESC 2019 sobre el tratamiento de pacientes con taquicardia supraventricular.**	*Revista Española de Cardiología 73(6):496-496*	**4,642**	Q1
Varma N, Marrouche NF, Aguinaga L, ..., Arbelo E, ..., Sridhar ARM, Stecker EC, Varosy PD	**HRS/EHRA/APHRS/LAHRS/ACC/AHA Worldwide Practice Update for Telehealth and Arrhythmia Monitoring During and After a Pandemic.**	*Circulation-Arrhythmia and Electrophysiology 13(7):e009007*	**4,393**	Q1
Nordestgaard BG, Langlois MR, Langsted A, ..., Ros E, ..., Watts GF, Wiklund O, Laitinen P, European Atherosclerosis Society (EAS) and the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) Joint Consensus Initiative	**Quantifying atherogenic lipoproteins for lipid-lowering strategies: Consensus-based recommendations from EAS and EFLM.**	*Atherosclerosis 294():46-61*	**3,919**	Q1
Langlois, Michel R; Nordestgaard, Borge G; Langsted, Anne; ...; Ros, Emilio; ...; Watts, Gerald F; Wiklund, Olov; Laitinen, Paivi; European Atherosclerosis Soc; European Federation Clinical Chem	**Quantifying atherogenic lipoproteins for lipid-lowering strategies: consensus-based recommendations from EAS and EFLM.**	*Clinical Chemistry and Laboratory Medicine 58(4):496-517*	**3,595**	Q1
Hasse B, Hannan MM, Keller PM, ..., Miro JM, ..., Krachmer AW, Durante-Magnoni E, Wilson WR M. chimaera ISCVID Investigators and, ISCVID Executive Committee, Infectious Diseases Specialists, Hospital Epidemiologists, Microbiologists and Molecular Typing Specialists, Cardiac Surgeons/ Perfusionists/ Cardiologists, Ophthalmology, Anaesthesiologists, Public Health	**International Society of Cardiovascular Infectious Diseases Guidelines for the Diagnosis, Treatment and Prevention of Disseminated Mycobacterium chimaera Infection Following Cardiac Surgery with Cardiopulmonary Bypass.**	*Journal of Hospital Infection 104(2):214-235*	**3,271**	Q1
González Del Castillo J; Burillo-Putze G; Cabello A; ...; Miró Ò; ...; Sotomayor C; Candel FJ; Moreno S	**Recommendations for the early diagnosis of suspected human immunodeficiency virus infection in the emergency department and the referral of patients for follow-up: a consensus statement of the Spanish Society of Emergency Medicine (SEMES).**	*Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias 32(6):416-426*	**3,173**	Q1
Hadjivassiliou M; Graus F; Honnorat J; ...; Hoggard N; Sarrigiannis P; Mitoma H	**Diagnostic Criteria for Primary Autoimmune Cerebellar Ataxia—Guidelines from an International Task Force on Immune-Mediated Cerebellar Ataxias.**	*Cerebellum 19(4):605-610*	**3,129**	Q2
Fokkens WJ, Lund VJ, Hopkins C, ..., Bernal-Sprekelsen M, Mullol J, Alobid I, ..., Zabolotniy D, Zsolt B, Zwetsloot CP	**European Position Paper on Rhinosinusitis and Nasal Polyps 2020.**	*Rhinology 58(suppl s29):1-464*	**3,019**	Q1/D1
Fokkens WJ, Lund VJ, Hopkins C, Hellings PW, Kern R, Reitsma S, Toppila-Salmi S, Bernal-Sprekelsen M, **Mullol J**	**Executive summary of EPOS 2020 including integrated care pathways.**	*Rhinology 58(2):82-111*	**3,019**	Q1/D1
Prokopakis E; Vardouniotis A; Bachert C; Bousquet J; Carrie S; Castelnuevo P; Constantinidis J; Fokkens W; Hopkins C; Leunig A; Molteni G; Mullol J; Scadding G; Marien G; Doulaptsi M; Hellings P	**Rhinology Future Debates 2018, a EUFOREA Report.**	*Rhinology 58(4):384-393*	**3,019**	Q1/D1
Mottet, Nicolas; Ribal, Maria J; Boyle, Helen; De Santis, Maria; Caillet, Philippe; Choudhury, Ananya; Garg, Tullika; Nielsen, Matthew; Wuthrich, Patrick; Gust, Kilian M; Shariat, Shahrokh F; Gakis, Georgios	**Management of bladder cancer in older patients: Position paper of a SIOG Task Force.**	*Journal of Geriatric Oncology 11(7):1043-1053*	**2,761**	Q3
Majem M; García-Martínez E; Martinez M; Muñoz-Couselo E; Rodriguez-Abreu D; Alvarez R; Arance A; Berrocal A; de la Cruz-Merino L; Lopez-Martin J	**SEOM clinical guideline for the management of immune-related adverse events in patients treated with immune checkpoint inhibitors (2019).**	*Clinical & Translational Oncology 22(2):213-222*	**2,737**	Q3
Aurélie P; Gasperment M; Debray D; Le Beux E; Brault C; Ollivier-Hourmand I; Dutheil D; Leclercq A; Devictor J; Hernández-Gea V; Pierre Emmanuel R; Goria O	**Social and medical support initiatives in vascular liver diseases in France, from child to adult.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):466-470*	**2,718**	Q3
Elkrief L; Houssel-Debry P; Ackermann O; Franchi-Abella S; Branchereau S; Valla D; Hillaire S; Dutheil D; Plessier A; Hernandez-Gea V; Bureau C	**Portal cavernoma or chronic non cirrhotic extrahepatic portal vein obstruction.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):491-496*	**2,718**	Q3
Coilly, A; Potier, P; Broue, P; Kounis, I; Valla, D; Hillaire, S; Lambert, V; Dutheil, D; Hernandez-Gea, V; Plessier, A; Vilgrain, V; Bureau, C	**Budd-Chiari syndrome.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):420-425*	**2,718**	Q3

Payance, A; Ceccaldi, PF; De Raucourt, E; Valla, D; Hillaire, S; Dutheil, D; Hernandez-Gea, V; Bureau, C; Plessier, A	**Pregnancy and vascular liver diseases Vascular liver diseases: position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):433-437*	**2,718**	Q3
Ollivier-Hourmand, I; Nguyen, N; De Gottardi, A; Valla, D; Hillaire, S; Dutheil, D; Bureau, C; Hernandez-Gea, V; De Raucourt, E; Plessier, A	**Management of anticoagulation in adult patients with chronic parenchymal or vascular liver disease Vascular liver diseases: Position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):438-446*	**2,718**	Q3
Giudicelli, H; Rautou, PE; Paradis, V; Bedossa, P; Goria, O; Lambert, V; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C; Valla, D	**Porto-sinusoidal vascular disease. Vascular liver diseases: Position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):447-451*	**2,718**	Q3
Guerin, F; Abella, SF; McLin, V; Ackermann, O; Girard, M; Cervoni, JP; Savale, L; Hernandez-Gea, V; Valla, D; Hillaire, S; Dutheil, D; Bureau, C; Gonzales, E; Plessier, A	**Congenital portosystemic shunts Vascular liver diseases: Position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):452-459*	**2,718**	Q3
Heurgue, A; Habes, D; Brugel, M; Franchi-Abella, S; Condat, B; Valla, D; Hillaire, S; Debray, D; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C; Payance, A	**Recent (non-cirrhotic) extrahepatic portal vein obstruction.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):460-465*	**2,718**	Q3
Larrey, D; Meunier, L; Valla, D; Hillaire, S; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C	**Drug induced liver injury and vascular liver disease.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):471-479*	**2,718**	Q3
de Ledinghen, V; Villate, A; Robin, M; Decraecker, M; Valla, D; Hillaire, S; Hernandez-Gea, V; Dutheil, D; Bureau, C; Plessier, A	**Sinusoidal obstruction syndrome.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):480-485*	**2,718**	Q3
Goria, O; Archambeaud, I; Lemaitre, C; Dutheil, D; Plessier, A; Rautou, PE; Hernandez-Gea, V; Valla, D	**Ischemic cholangiopathy: An update.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):486-490*	**2,718**	Q3
Abergel, A; Gasperment, M; Nery, FG; Buchard, B; Lebreton, A; Hordonneau, C; Duron, C; Valla, D; Sophie, H; Ledain-Rautou, E; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C; Francoz, C	**Extrahepatic portal vein obstruction (EHPVO) in cirrhosis.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):497-502*	**2,718**	Q3
Soret J, Debray D, Fontbrune FS, Kiladjian JJ, Saadoun D, Latour RP, Valla D, Hernandez-Gea V, Hillaire S, Dutheil D, Plessier A, Bureau C, De Raucourt E.	**Risk factors for vascular liver diseases: Vascular liver diseases: position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.**	*Clinics and Research in Hepatology and Gastroenterology 44(4):410-419*	**2,718**	Q4
Bernal-Sprekelsen, M; Aviles-Jurado, F X; Escudero, J Alvarez; ...; Ferrando Ortola, C; ...; Vadell, R Villalonga; Martin Delgado, M C	**Consensus document of the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC), the Spanish Society of Otorhinolaryngology and Head and Neck Surgery (SEORL-CCC) and the Spanish Society of Anesthesiology and Resuscitation (SEDAR) on tracheo-tomy in patients with COVID-19 infection.**	*Medicina Intensiva 44(8):493-499*	**2,363**	Q3
Cinesi Gómez C, Peñuelas Rodríguez Ó, Luján Torné M, ..., Ferrer Monreal M, ..., Ferrer Roca R, Romero Berrocal A, **Ferrando Ortola C.**	**Clinical consensus recommendations regarding non-invasive respiratory support in the adult patient with acute respiratory failure secondary to SARS-CoV-2 infection.**	*Medicina Intensiva 44(7):429-438*	**2,363**	Q3
Rodríguez-Yañez M, Gómez-Choco M, López-Cancio E, Amaro S, ..., Serena J, Vivancos-Mora J, Fuentes B, Comité ad hoc del Grupo de Estudio de Enfermedades Cerebrovasculares de la Sociedad Española de Neurología	**Stroke prevention in patients with arterial hypertension: Recommendations of the Spanish Society of Neurology's Stroke Study Group.**	*Neurología S0213-4853(20):30229-2*	**2,283**	Q3

Palacio-Portilla EJ, Roquer J, Amaro S, ..., Serena J, Vivancos-Mora J, de Leciñana MA, Comité ad hoc del Grupo de Estudio de Enfermedades Cerebrovasculares de la Sociedad Española de Neurología	**Dyslipidemias and stroke prevention: recommendations of the Study Group of Cerebrovascular Diseases of the Spanish Society of Neurology.**	*Neurología S0213-4853(20):30299-1*	**2,283**	Q3
Meca-Lallana JE; Fernández-Prada M; García Vázquez E; ...; Saiz A; Tintoré M; Montalbán Gairin X	**Consensus statement on the use of alemtuzumab in daily clinical practice in Spain.**	*Neurología S0213-4853(19):30146-X*	**2,283**	Q3
Cervera R; Rodríguez-Pintó I; Legault K; Erkan D	**16th International Congress on Antiphospholipid Antibodies Task Force report on catastrophic antiphospholipid syndrome.**	*Lupus 29(12):1594-1600*	**2,251**	Q3
Crespo, Javier; Andrade, Raul; Alberca de las Parras, Fernando; Balaguer, Francesc; Barreiro-de Acosta, Manuel; Bujanda, Luis; Gutierrez, Ana; Jorquera, Francisco; Iglesias-Garcia, Julio; Sanchez-Yague, Andres; Luis Calleja, Jose	**Resumption of activity in gastroenterology departments. Recommendations by SEPD, AEEH, GETECCU and AEG.**	*Revista Española de Enfermedades Digestivas 112(5):397-410*	**2,196**	Q4
Len O; Los-Arcos I; Aguado J; ...; Bodro M; ...; San-Juan R; Vidal E; Domínguez-Gil B	**Executive summary of the Consensus Statement of the Transplant Infection Study Group (GESITRA) of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC) and the National Transplant Organization (ONT) on the Selection Criteria of Donors of Solid Organs in relation to Infectious Diseases** *[Resumen ejecutivo de la Declaración de consenso del Grupo de Estudio de la Infección en el Trasplante (GESITRA) de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC) y la Organización Nacional de Trasplantes (ONT) sobre los criterios de selección de donantes de órganos sólidos en relación con las enfermedades infecciosas].*	*Enfermedades infecciosas y Microbiología Clínica 38(8):379-389*	**1,654**	Q4
Cantón R; Oliver A; Alós JI; ...; Soriano A; Torres C; Vila J; Martínez-Martínez L	**Recommendations of the Spanish Antibiogram Committee (COESANT) for selecting antimicrobial agents and concentrations for in vitro susceptibility studies using automated systems** *[Recomendaciones del Comité Español del Antibiograma (COESANT) para la selección de antimicrobianos y sus concentraciones en el estudio in vitro de la sensibilidad con métodos automáticos].*	*Enfermedades infecciosas y Microbiología Clínica 38(4):182-187*	**1,654**	Q4
Gudiol C, Aguilar-Guisado M, Azanza JR, Candel FJ, Cantón R, Carratalà J, Garcia-Vidal C, Jarque I, Lizasoain M, Gil-Bermejo JM, Ruiz-Camps I, Sánchez-Ortega I, Solano C, Suárez-Lledó M, Vázquez L, de la Cámara R	**Executive summary of the consensus document of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC), the Spanish Network for Research in Infectious Diseases (REIPI) and the Spanish Society of Haematology and Haemotherapy (SEHH) on the management of febrile neutropenia in patients with hematological malignancies.**	*Enfermedades infecciosas y Microbiología Clínica 38(4):174-181*	**1,654**	Q4
Aira A, Arajol C, Casals-Pascual C, González-Suárez B, Martí S, Domínguez MÁ, Guardiola J, Soriano Á, en representación del grupo catalán para el estudio y desarrollo de la transferencia de microbiota fecal	**Recommendations for stool donor selection for fecal microbiota transplant. Consensus document endorsed by the Catalan Society of Digestology, Catalan Society of Infectious diseases and Clinical microbiology and the GEMBIOTA group from Spanish Society of Infectious Diseases and Clinical Microbiology.**	*Enfermedades infecciosas y Microbiología Clínica ():-*	**1,654**	Q4
Cordero E; Goycochea-Valdivia W; Mendez-Echevarria A; ...; Arostegui JI; ...; Santos-Pérez JL; Rodríguez-Gallego C; Neth O	**Executive Summary of the Consensus Document on the Diagnosis and Management of Patients with Primary Immunodeficiencies.**	*Enfermedades infecciosas y Microbiología Clínica 38(9):438-443*	**1,654**	Q4
Espinosa, Gerard; Herreras, Jose M; Munoz-Fernandez, Santiago; Ruiz de Morales, Jose M Garcia; Cordero-Coma, Miguel	**Recommendations statement on the immunosuppressive treatment of non-infectious, non-neoplastic, non-anterior uveitis.**	*Medicina Clinica 155(5):220.e1--220.e12*	**1,635**	Q3
Rodríguez M; Buti M; Esteban R; Lens S; Prieto M; Suárez E; García-Samaniego J	**Consensus document of the Spanish Association for Study of the Liver on the treatment of hepatitis B virus infection (2020).**	*Gastroenterología y Hepatología 43(9):559-587*	**1,581**	Q4
Daniel Ginard, Ignacio Marín-Jiménez, Manuel Barreiro-de Acosta, Elena Ricart, Eugeni Domènech, Javier P Gisbert, Maria Esteve, Miguel Mínguez, en representación de GETECCU	**Recommendations of the Spanish Working Group on Crohn's Disease and Ulcerative Colitis (GETECCU) on topical therapy in ulcerative colitis.**	*Gastroenterología y Hepatología 43(2):97-105*	**1,581**	Q4
Fernández I, Pascasio JM, **Colmenero J**, en nombre del grupo de trabajo para el VII consenso de la SETH, Autores participantes en el grupo de trabajo en representación de sus respectivos programas de trasplante hepático	**Prophylaxis and treatment in liver transplantation.**	*Gastroenterología y Hepatología 43(3):169-177*	**1,581**	Q4

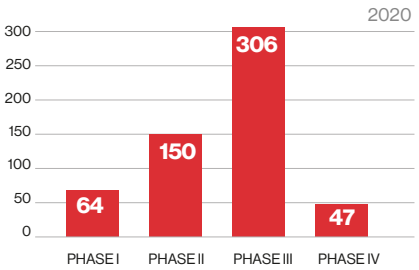
Crespo J, Andrade R, Alberca de Las Parras F, Balaguer F, Barreiro-de Acosta M, Bujanda L, Gutiérrez A, Jorquera F, Iglesias-García J, Sánchez-Yagüe A, Calleja JL	**Resumption of activity in gastroenterology departments. Recommendations by SEPD, AEEH, GETECCU and AEG**	*Gastroenterología y Hepatología 43(6):332-347*	**1,581**	Q4
Araujo Castro M; Currás Freixes M; de Miguel Novoa P; Gracia Gimeno P; Álvarez Escolá C; **Hanzu F**	**SEEN guidelines for the management and prevention of acute adrenal insufficiency.**	*Endocrinología Diabetes y Nutrición 67(1):53-60*	**1,180**	Q4
Araujo-Castro M; Iturregui Guevara M; Calatayud Gutiérrez M; Parra Ramírez P; Gracia Gimeno P; Hanzu FA; Lamas Oliveira C	**Practical guide on the initial evaluation, follow-up, and treatment of adrenal incidentalomas Adrenal Diseases Group of the Spanish Society of Endocrinology and Nutrition.**	*Endocrinología Diabetes y Nutrición 67(6):408-419*	**1,180**	Q4
Bouza E; Aguado JM; Alcalá L; Almirante B; Alonso-Fernández P; Borges M; Cobo J; Guardiola J; Horcajada JP; Maseda E; Mensa J; Merchante N; Muñoz P; Sáenz JLP; Pujol M; Reigadas E; Salavert M; Barberán J	**Recommendations for the diagnosis and treatment of Clostridioides difficile infection: An official clinical practice guideline of the Spanish Society of Chemotherapy (SEQ), Spanish Society of Internal Medicine (SEMI) and the working group of Postoperative Infection of the Spanish Society of Anesthesia and Reanimation (SEDAR).**	*Revista Espanola de Quimioterapia 33(2):151-175*	**1,132**	Q4

CLINICAL TRIALS

The IDIBAPS–FCRB Clinical Trials Unit constitutes the ideal setting for completing a number of the crucial steps in the development of new medical products. Basic biomedical research and applied clinical research, together with specialized healthcare practice, are aspects of IDIBAPS–FCRB that may be very useful for the development of drugs.

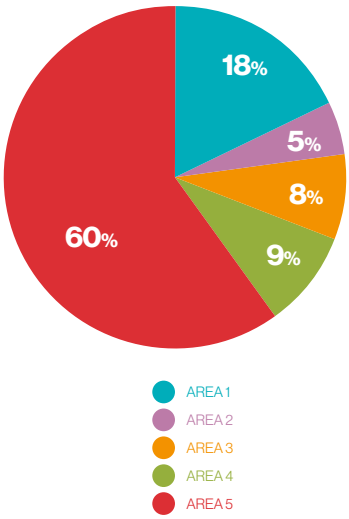
The figures below summarize the number of active clinical trials in 2020. 258 new clinical trials were opened and overall, there were 567 active clinical trials. Most of these clinical trials correspond to phase III (53,9%).

Active clinical trials by phase:





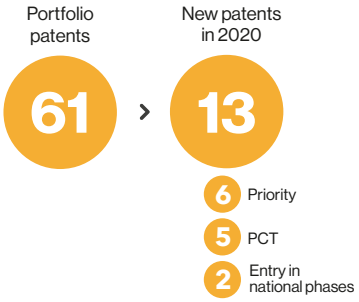
By scientific areas, most of the trials are performed in the area of hemato-oncology: (Area 5, 60%):

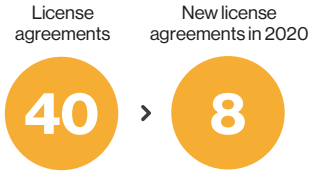


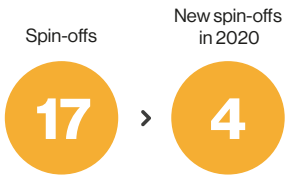
PATENTS AND LICENSE AGREEMENTS

The IDIBAPS-FCRB currently manages 61 patent families and 11 proprietary software. Besides, 40 license agreements that have been signed with several industry partners are currently active.

During 2020, 13 new patent applications were filed: 6 priority patents, 5 PCTs, and 2 patent entered into National Phases in several countries. Besides, 8 new license agreements were signed with national and international companies.







PORTFOLIO OF SPIN-OFFS

The activity of researchers gave rise to 4 new companies based on the knowledge from IDIBAPS – FRCB: Creatsens, S.L, project led by Dr. Campistol; Gyala Therapeutics, S.L project led by Dr. Manel Juan; Reveal Genomics, S.L, project led by Dr. Aleix Prat and Psicoterapia VR, S.L, project led by Dr.Oscar García-Algar.

IDIBAPS researchers have founded **17** spin-offs since 2008, **14** of which are active companies that together employ more than 50 people.Below there is a list of all these spin-offs.

Spin-offs from IDIBAPS researchers where IDIBAPS or FCRB participate as shareholders:

OWL METABOLOMICS (2008)
http://www.owlmetabolomics.com/
Dr. Joan Caballeria

OWL is a biotechnology company in the field of Metabolomics with pioneering diagnostics products and unique R&D services for the scientific community. The OWLiver Test is the first in vitro test for determining steatosis and NASH.

VIRTUAL BODYWORKS (2015)
https://virtualbodyworks.com/
Dr. Maria Victoria Sanchez-Vives

Virtual Bodyworks is changing the the future of social, medical and psychological rehabilitation. They are developing several tools such as: i-Cortex (a tool that facilitates the neurological and physical rehabilitation of individuals who have experienced a wide range of traumas ranging from chronic pain management to stroke) and VRespect.Me (a powerful virtual reality experience designed to rehabilitate men with a history of domestic violence, the only scientifically proven product of its kind in the market).

ESTIMTRACK (2016)
http://www.estimtrack.com/
Dr. Jaume Balust

Estimtrack provides an intelligent set of tools to schedule, track and orchestrate all involved personnel in surgical procedures and operating rooms based on Machine Learning (ML), which improves the efficiency of operating room tracks in healthcare organizations by 31%

BARCELONA LIVER BIOSERVICES (2017)
http://liver.barcelona/
Dr. Jordi Gracia-Sancho

BLB is a contract research organization that offers cutting-edge research services and consultancy in the field of liver diseases. Its first product ExoLiver, allows co-culture of healthy or diseased hepatic cells, unravels key biological data obtained in a human-like system, therefore representing the ultimate pre-clinical step in any development pipeline.

AIS CHANNEL (2019)
https://aischannel.com/about-ais-channel/
Dr. Antonio M. Lacy

AIS Channel is an online platform that provides a new approach to the communication of advances in cutting-edge surgical expertise, provided by leading surgeons.

IWENDO SOLUTIONS (2019)
https://www.miwendo.com/
Dr. Glòria Fernàndez- Esparrach

MiWEndo Solutions SL is a low-cost and safe (non-ionizing) electromagnetic device designed to be attached at the tip of a conventional colonoscope. MiWEndo automatizes polyp detection emitting an alarm when a polyp is sensed, increases the field of view to 360º and provides quantitative differentiation between malignant and benign polyps without changing the current clinical practice.

PREDICTHEON (2019)
Dr. Pedro Gambús
http://www.linkedin.com/company/predictheon/about/

Predictheon SL develops mathematical models, based on artificial intelligence, to optimize the monitoring systems for patients undergoing sedation or general anesthesia processes, anticipating side effects and therefore increasing the safety of the patient subjected to these processes.

SURG SOLUTIONS (2019)
https://www.vessconnect.com/
Dr. Joan Fontdevila and Dr. Jordi Descarrega

Surg Solution SL develops innovative devices and solutions in the field of vascular and microvascular anastomosis. Its first product, VessConnect, simplifies vascular anastomosis, especially in microvascular procedures providing an easier, faster and safer way to perform these procedures using the memory-shape properties of some advanced materials.

CREATSENS, S.L, (2020)
Dr. Josep Mª Campistol

Technology healthcare platform for the personalized management of chronic renal failure.

GYALA THERAPEUTICS, S.L (2020)
Dr. Manel Juan

The aim of this company is the development of new CAR-T therapies for the treatment of hematological malignancies.

REVEAL GENOMICS, S.L (2020)
https://www.reveal-genomics.com
Dr. Aleix Prat

The aim of this company is the development of diagnostic tools based on complex genomic data for patients with advanced breast cancer.

PSICOTERAPIA VR, S.L (2020)
Dr. Oscar García-Algar
https://mentalxr.com/

The aim of this company is the development of artificial intelligence tools for the diagnosis and treatment of neurocognitive disorders using virtual reality.

Spinoffs from IDIBAPS researchers where IDIBAPS or FCRB do not participate as shareholders:

TRANSMURAL BIOTECH (2009)
www.transmuralbiotech.com
Dr. Eduard Gratacós

Transmural Biotech is developing innovative products and services in the perinatal field by applying image analysis technologies that facilitate a better diagnosis in a non-invasive way and representing a saving for the health system.

AELIX THERAPEUTICS (2015)
www.aelixtherapeutics.com
Dr. Josep M. Gatell

AELIX Therapeutics is a clinical stage biotechnology company focused on the development of a therapeutic HIV vaccine to be used in cure/eradication strategies. The HIV Vaccine program is based on an innovative T cell vaccine immunogen design that directs the body's immune defence to the most vulnerable parts of HIV.

FREEOX BIOTECH (2017)
www.freeoxbiotech.com
Dr. Ángel Chamorro

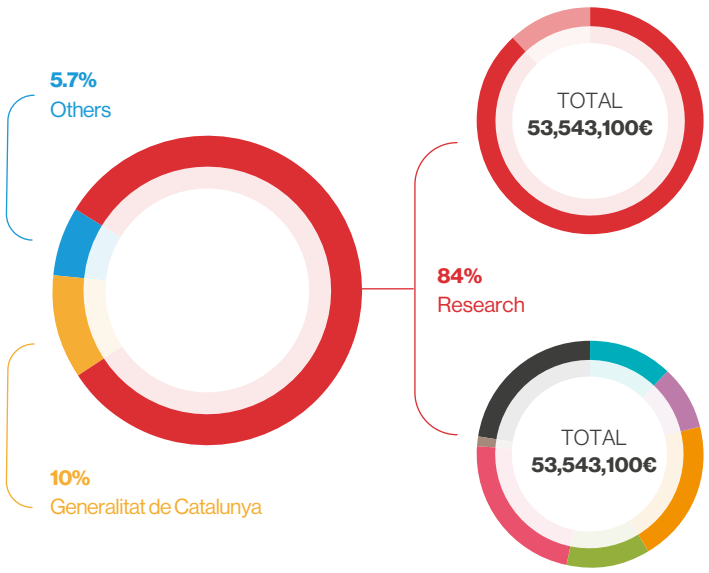
Freeox Biotech is an innovative company born to discover and develop medicines addressed to reduce the effects of the oxidative stress in the organism, and especially those related to the neurological and cardiovascular system. The company is focused mainly in Stroke, a condition characterized by the interruption of blood flow to the brain which is a leading cause of death and disability worldwide.

Funding

From a financial and managerial perspective, IDIBAPS and FCRB are managed in a global and consolidated manner.

Funding sources (consolidated IDIBAPS+FCRB)

1	Calls for funding	19,020,461 €	30%
2	Private funding	18,972,576 €	29.9%
3	Donations	12,952,602 €	20.2%
4	Knowledge dissemination	2,597,460 €	4%
5	Generalitat de Catalunya	6,455,323 €	10%
6	Core facilities	700,914 €	1%
7	Rental income	925,492 €	1.4%
8	Intercompany services	530,534 €	0.8%
9	Financial income	24,944 €	0%
10	Capital grant	1,574,371 €	2.5%
	TOTAL	**63,754,677 €**	



Executed funds by source

88% National
47,170,082 €

12% International
6,373,018 €

Executed funds by research area

12% **Area 1.** Biological aggression and response mechanisms
6,475,888 €

9.1% **Area 2.** Respiratory, cardiovascular and renal pathobiology...
4,873,292 €

20.3% **Area 3.** Liver, digestive system and metabolism
10,873,884 €

12.1% **Area 4.** Clinical and experimental neuroscience
6,494,507 €

22.6% **Area 5.** Oncology and haematology
12,096,310 €

22.4% **Other research**
12,013,293 €

1.3% **Transversal research groups**
715,925 €

New competitive projects

Staff of IDIBAPS research groups and other members of the Clínic Campus have actively participated in different International, Spanish and Catalan competitive calls. As a result, in 2020, 223 new competitive projects have been granted to IDIBAPS – FCRB.

From research groups

Total 204

148 Projects

56 Human resources grants

International 43

- **41** Projects
  - **23** European Commission. *Coordinated=6*
  - **6** National Institutes of Health. *Renewed=6*
  - **12** Other
- **2** Human resources grants
  - **1** European Commission
  - **1** Other

Spanish 134

- **87** Projects
- **47** Human resources grants

Catalan 27

- **20** Projects
- **7** Human resources grants

Other new competitive projects

Total 19

18 Projects

1 Human resources grants

International 4

Spanish 9

Catalan 5

Spanish 1

The following table classifies the **223** new competitive projects being granted in the Clínic Campus per funding agency.

The funding institutions listed below are grouped in two sections, public and private:

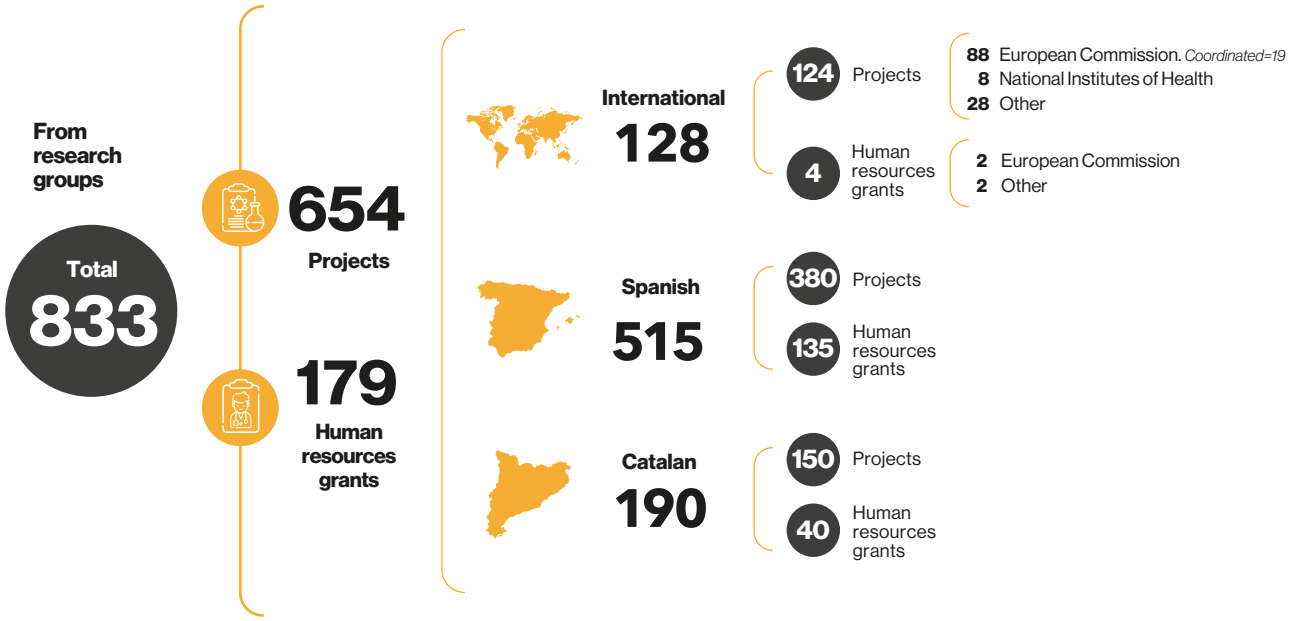
COMPETITIVE PUBLIC FUNDING	NUMBER OF PROJECTS
TOTAL	**167**
Catalan institutions	**17**
Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)	10
Ajuntament de Barcelona	1
Fundació Institució Centres de Recerca de Catalunya (i-CERCA)	1
Generalitat de Catalunya	5
National institutions	**117**
Agencia Estatal de Investigación (AEI)	14
Instituto de Salud Carlos III (ISCIII)	95
Ministerio de Universidades	5
Ministerio de Sanidad, Consumo y Bienestar social	3
International institutions	**33**
European Commission	27
National Institute of Health (NIH) Renewed	6

COMPETITIVE PRIVATE FUNDING	NUMBER OF PROJECTS
TOTAL	**56**
Catalan institutions	**15**
Col·legi de Farmacèutics de Catalunya	1
Fundació Academia de Ciències Mèdiques i de la Salut de Catalunya i Balears	3
Fundació La Marató de TV3	8
Fundació Catalana del Transplantament (FCT)	1
Fundació Clínic per la Recerca Biomèdica (FCRB)	2
National institutions	**27**
Asociación Española de Gastroenterología (AEG)	1
Asociación Cáncer de Mama Metastásico (CMM)	1
Barcelona Mobile Ventures SL	1
Fundación Alicia Koplowitz	1
Fundación Bancaria "La Caixa"	1
Fundación Casa del Corazón	3
Fundación Científica Asociación Española Contra el Cáncer (AECC)	3
Fondo supera COVID-19	1
Fundación de la Sociedad Española de Alergología e Inmunología Clínica (SEAIC)	1
Fundación Española de Psiquiatría y Salud Mental (FEPSM)	1
Fundación Española para el Estudio del Hígado (FEEH)	1
Fundación Merck Salud	1
Fundación Senefro	2
Fundación Sociedad Española de Cirugía Ortopédica y Traumatología (SECOT)	1
Fundación Sociedad Española de Endocrinología y Nutrición (SEEN)	1
Fundación Sociedad Española de Oncología Médica (SEOM)	3
GILEAD Sciencies	3
Sociedad Española de Diabetes (SED)	1
International institutions	**14**
Alzheimer's Association	1
Ara Parseghian Medical Research Fund	1
AXA Research Fund	1
Children's Cancer and Leukaemia Group (CCLG)	1
European association for the study of the liver (EASL)	1
European Society for Medical Oncology (ESMO)	1
European Society of Gastrointestinal Endoscopy (ESGE)	1
Gilead Sciences, Inc	1
Grifols Shared Services North America, Inc	1
Leo Foundation	1
Michael J. Fox Foundation for Parkinson	2
Pablove Foundation	1
World Cancer Research Fund (WCRF)	1

Active competitive projects

In 2020, there have been 875 IDIBAPS–FCRB active competitive projects. The raised funds have allowed to support research projects and human resources grants.

Some of these initiatives have also provided the Institute with new scientific equipments or facilities. Many of these competitive projects have been co-funded by the European Regional Development Fund (ERDF).





Leadership in European Union's funded projects

IDIBAPS has a strong background both participating and leading competitive projects supported by the European Commission:

NEW COMPETITIVE PROJECTS

The grants raised and led by IDIBAPS researchers along 2020 are listed below. Only part of them have started during the year:

MARIE SŁODOWSKA CURIE ACTIONS' MONOCONTRACTOR GRANTS

NEUROPREG
Eating patterns in pregnancy: unravelling the underlying neurocircuits and its deleterious metabolic consequences
2021-2023
Fellow: **Roberta Haddad**
Mentor: **Marc Claret**
Call: CE_H2020-MSCA-IF-19
Official code: 891247

COORDINATED COLLABORATIVE PROJECTS

C3
COVID19 Central Control
Carolina Garcia-Vidal
2020
Call: CE_EIT_RapidCovid_20
Official code: 20869

IMMUNITY
Certify.Health
Josep Roca
2020
CE_EIT_RapidCovid_20
Official code: 20873

ALHAMBRA
Alcohol Harm - Measuring and Building Capacity for Policy Response and Action
2020 – 2023
Antoni Gual
Call: CE_TED_Chafea19_05
Official code: 20197105

ULISES
Immunological incompatibility as a basis for cancer curing and vaccination
Cristina Fillat
2020 – 2023
Call: CE_H2020-FETOPN19-2
Official code:899708

MUSCLE CANCER (TASK 3.2)
Tackling muscle loss in cancer patients through nutrition solutions and lifestyle interventions
Ramon Estruch
2021
Call: CE_EIT_Food4H_21_7
Official code: 19969

INTER-GLAM
Intercontinental Perspectives on Global Addictions and Drug Markets
2021 – 2023
Antoni Gual
Call: CE_JUST-2019-AG-DRU
Official code: 957776

ACTIVE COMPETITIVE PROJECTS

In 2020, the IDIBAPS-FCRB European projects implemented to be highlighted are:

GRANTS FUNDED BY THE EUROPEAN RESEARCH COUNCIL

European Research Council

PRIORS
Neural circuit dynamics underlying expectation and their impact on the variability of perceptual choices
Jaime de la Rocha
2015 – 2021
Call: CE_H2020-ERC-2015_Consolidator grant
Official code: 683209

MITOSENSING
Decoding mitochondrial nutrient-sensing programs in POMC neurons as key determinants of metabolic health
Marc Claret
2017 – 2022
Call: CE_H2020-ERC-2016_Consolidator grant
Official code: 725004

BCLLatlas
Single-cell genomics to comprehensively understand healthy B-cell maturation and transformation to chronic lymphocytic leukemia
Elías Campo and Iñaki Martín Subero *(participating as independent Principal Investigators)*
2019 – 2024
Call: CE_H2020-ERC-2018_Synergy grants
Official code: 810287

MARIE SŁODOWSKA CURIE ACTIONS' MONOCONTRACTOR GRANTS

BITRECS
Biomedicine international training research programme for excellent clinician-scientists
Elías Campo
2017 – 2022
Call: CE_H2020-MSCA-COFUND-16
Official code: 754550

Exh-Res-CART
Exhaustion resistent CAR-T cells for the treatment of solid tumors
Fellow: **Sonia Guedan**
Mentor: **Aleix Prat**
2019 – 2020
Call: CE_H2020-MSCA-IF-18
Official code: 839566

PDX-PC
Elucidation of tumour cell plasticity mechanisms associated to treatment in metastatic prostate cancer
Fellow: **Mercedes Marín**
Mentors: **Aleix Prat and Begoña Mellado**
2019 – 2021
Call: CE_H2020-MSCA-IF-18
Official code: 841121

COORDINATED COLLABORATIVE PROJECTS

INTEGRATE
Joint Action on integrating prevention, testing and linkage to care strategies across HIV, viral hepatitis, TB and STIs in Europe
Felipe Garcia and Josep Mallolas
2017 – 2020
Call: HP-JA-2016
Official code: 761319

HIVACAR
Evaluating a Combination of Immune-based Therapies to Achieve a Functional Cure of HIV Infection
Felipe Garcia
2017 – 2021
Call: H2020-SC1-2016-RTD
Official code: 731626

LIVERHOPE
Simvastatin and rifaximin as new therapy for patients with decompensated cirrhosis
Pere Ginès
2017 – 2022
Call: H2020-SC1-2016-RTD
Official code: 731875

FUTURIZE
A step ahead to tackle future trends in addictions
Silvia Matrai
2018 – 2020
Call: CE_JUST-2017-AG-DRUG
Official code: 806964

IMLINFO
Red Transfronteriza de Immunoterapias Personalizadas para Linfomas no-Hodgkin
Patricia Pérez Galán
2018 – 2020
Call: CE_Interreg-16_POCTEFA
Official code: EFA281/16

TRANSCOLONCAN
Identifying Biomarkers Through Translational Research for Prevention and Stratification of Colorectal Cancer
Sergi Castellví
2018 – 2022
Call: CE_H2020-COST17
Official code: CA17118

CKDSens
A novel home healthcare platform for chronic kidney disease
Josep M. Campistol
2019 – 2020
Call: CE_EIT_2ndl19
Official code:19579

CATALAN OPEN INNOVATION HUB
Twining
Josep Roca
2019 – 2021
Call: CE_ElPonAHA_19

IMMUNITY
Certify.Health
Josep Roca
2020
CE_EIT_RapidCovid_20
Official code: 20873

VR Per GENERE
Virtual Reality Prevention of Gender-Violence in Europe based on Neuroscience of Embodiment, peRspective and Empathy
Maria Victoria Sánchez-Vives
2020 – 2022
Call: CE_REC_2019
Official code: 881712

ULISES
Immunological incompatibility as a basis for cancer curing and vaccination
Cristina Fillat
2020 – 2023
Call: CE_H2020-FETOPN19-2
Official code:899708

LIVERSCREEN
Screening for liver fibrosis - population-based study across European countries
Pere Ginès
2020 – 2024
Call: CE-H2020-SC1_2019_2s
Official code: 847989

Institutional projects

GO EUROPE PROGRAMME

(Strategic plan for health research and innovation, PERIS - Catalan Government)

An IDIBAPS-FCRB project funded by the Health Department of the Catalan Government is now being implemented (2019-2021) with the following objectives: increasing the number of internationally funded projects and improving the international institutional positioning.

The main achievements of 2020 are listed below:

1) The research and innovation needs, resources or objectives of more than 150 Principal investigators have been compiled and used to identify the specific calls best-fitting to their activities.

2) Close to 140 new international calls have been identified and disseminated.

3) Close to 40 proposals enjoyed a significant support from the European Projects Office.

4) The leading role of Hospital Clínic de Barcelona in the EIT Health network has been consolidated at European level.

Supported by the Health Department (SLT008/18/00199)

Generalitat de Catalunya
Departament de Salut

HRS4R

Human Resources Strategy for Researchers.

WEB
www.clinicbarcelona.org/en/idibaps/working-idibaps/hrs4r

IDIBAPS is awarded with the logo "HR Excellence in research" since 2015 due to it has acquired a commitment to implement the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (Charter and Code) in their policies and practices. Overall, IDIBAPS has its own HRS4R strategy to prioritize the working environment of the researchers in terms of professionalism, recruitment, conditions as well as supervision.

In 2020, IDIBAPS was implementing its updated Action Plan (2017-2020). Moreover, the process to renew the acknowledgement of the logo "HR Excellence in research" was initiated. To do so, a survey was launched to the whole IDIBAPS research community. The main purpose of this consultation was to identify the priorities within the statements of the European Charter and Code to design a new 3-year Action Plan (2021-2024).

HR EXCELLENCE IN RESEARCH

Spanish Biomedical Networks

ISCIII Networks

The Instituto de Salud Carlos III, ISCIII, from the Spanish Ministry of Science and Innovation promotes the consolidation of several Spanish networks with the participation of IDIBAPS that are detailed below:

RESEARCH NETWORKS

The Networked Biomedical Research Centres (Centros de Investigacion Biomédica en Red, CIBERs and also CIBERNED) and the Cooperative Research Topic Networks (Redes Temáticas de Investigación Cooperativa en Salud, RETICs) represent a cooperative way of understanding biomedical research to achieve excellent results.

In 2020, IDIBAPS has been related to most of the existing virtual research structures as it is described below:

CIBERS

To sum up, 29 top IDIBAPS researchers are group leaders within CIBER networks and CIBERNED in those proportions:

CIBERCV Cardiovascular	1
CIBERDEM Diabetes and associated metabolic disorders	2
CIBEREHD Hepatic and digestive diseases	8
CIBERER Rare diseases	6
CIBERES Respiratory diseases	5
CIBERNED Neurodegenerative diseases	1
CIBEROBN Obesity and nutrition	2
CIBERONC Oncology	2
CIBERSAM Mental health	2

One IDIBAPS researcher is the Scientific Director in his corresponding CIBERs as leader of his field of research:

Dr. Eduard Vieta
Scientific Director at CIBER for Mental health (CIBERSAM).
www.cibersam.es

The mission of this network is to provide answers and solutions to treat mental illnesses and thus improve the quality of life of citizens.

RETICS

13 IDIBAPS high-level researchers are also group leaders within RETICs networks. According to their field of work they are distributed in the following structures:

INVICTUS Cerebral Vascular Diseases	1
OFTARED Prevention, early detection, treatment and rehabilitation of ocular pathologies	2
REDINREN Renal Research	1
REDRIS Research in Aids	1
REEM Multiple Sclerosis	3
RIER Research in Inflammation and Rheumatic Diseases	1
RIRAAF Adverse Reactions to Allergens and Drugs	1
RTA Addictive Disorders	1
SAMID Maternal and Child Health and Development Research Network	1
TERCEL Cell Therapy Network	1

ITEMAS NETWORK

www.itemas.org

IDIBAPS KTT Office is part of the Medical Technology Innovation Platform (ITEMAS). This network is one of the Thematic Platforms for Cooperative Research. ITEMAS aims to promote innovation in medical technology as an essential tool in making the Spanish National Health System more sustainable.

It also supports the development of the culture of innovation necessary to facilitate integration of all the relevant agents in the field of medical technology.

The core of the ITEMAS comprises the innovation units of 29 large hospitals belonging to the Spanish National Health System, in addition to the Ministry of Health, Social Services and Equality and the National Center for Cardiovascular Research (CNIC).

SPANISH NETWORK OF BIOBANKS PLATFORM

IDIBAPS Biobank is part of the Spanish Network of Biobanks Platform. The main aim of this collaborative initiative is to provide an added value to the National Health System, favoring the development and quality of scientific production. Its members are biobanks of hospitals, autonomic networks, virtual biobanks, biobanks of the main research centers linked to healthcare institutions, between others.

This network is grouped into five working programs being all led by one single scientific coordination:

1) Strategic collections
2) Networked services
3) Research, development and innovation
4) Ethics, law and society
5) Coordination and training

European Biomedical Networks

SPANISH CLINICAL RESEARCH NETWORK, SCREN

IDIBAPS Principle Investigators are supported by the Clinical Trial Unit from FCRB and also by the IDIBAPS Core Facility of Medical Statistics while performing their clinical research and also their clinical trials. It is for this purpose that the SCReN network has as members both FCRB and IDIBAPS.

This platform is responsible for grouping 31 Units of Clinical Research and Clinical trials. Its objective is to achieve high quality standards in all clinical research procedures, from the design to the final dissemination of the results.

The participants of the SCReN network have different profiles such as researchers, cooperative groups, research centres between others.

The network is organized into internal programmes:

1) Regulation and monitoring
2) Pharmacovigilance
3) Methodology, biostatistics and data management
4) Coordination and training.

EUROPEAN ANIMAL RESEARCH ASSOCIATION, EARA

IDIBAPS is member of the European Animal Research Association (EARA). EARA's mission is to inform society about the continued need for, and the benefits of, the humane use of animals in scientific research by providing accurate and evidence-based information.

EUROPEAN INFRASTRUCTURE FOR TRANSLATIONAL MEDICINE, EATRIS

EATRIS is the European Infrastructure for Translational Medicine. It is one of the existing European Research Infrastructure Consortiums (ERICs) that expects to improve the productivity of the translational research and development pipeline by providing high quality research services to public and private research entities. IDIBAPS together with many other European entities bring together resources and services for research communities to translate scientific discoveries into benefits for patients.

EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY, EIT HEALTH

EIT HEALTH is a "Knowledge and Innovation Community" (KIC) of the European Institute of Innovation and Technology (EIT) focused on health and aging. EIT HEALTH is the largest healthcare innovation network in Europe and helps building and growing businesses to create products and services that progress healthcare in Europe, while strengthening our economy. It is composed by close to 150 EIT Heath partner organisations from the worlds of business, research education and healthcare delivery. In 2020, Hospital Clínic of Barcelona became Core Partner of EIT HEALTH together with IDIBAPS and FCRB as linked institutions.

Other Networks

NETWORK OF CLINICAL RESEARCH MANAGEMENT ENTITIES, REGIC

REGIC is the first association of clinical research management entities created in Spain at the request of professionals. Its main aim is to share experiences and create a space for interaction and training in health research, development and innovation management. FCRB is member of this network and actively participates in some of its working groups.

NETWORK OF TUMOR BANKS OF CATALONIA, XBTC

HCB-IDIBAPS Biobank has a Tumour and Tissue Bank composed by nearly one million samples representative of tumoral tissues belonged to patients with cancer or other kind of diseases. In 2006, as part of the Oncology Master Plan of Catalonia led by Dr. Pedro L. Fernández, the Network of Tumor Banks of Catalonia (XBTC) was created. This structure compile 11 sources of tumour samples linked to the main hospitals of Catalonia. HCB-IDIBAPS Biobank is the coordinator node of the XBTC network.

Scientific facilities

CEK, Esther Koplowitz Research Center

Inaugurated by the end of 2010 and with space for more than 350 researchers, the CEK building receives international scientists and PhD students, fostering the exchange of experience and professional synergies.

The building has a laboratory area of 4,860 m² on the ground. In the basement one underground floor offers a total area of 2,565 m2, including space for scientific core facilities, a category 2 radioactive non-encapsulated sources type facility (IRA-3029), and a BSL-3 laboratory GMO notified (A/ES/13/I-11).

The CEK building was made possible thanks to the contribution of several public and private institutions, the Generalitat de Catalunya, the Ministerio de Economía y Competitividad, and the Instituto de Salud Carlos III, as well as from the support of other donors such as the Fundación Esther Koplowitz, Fundació Privada Cellex, Acció Sardà Farriol para la Investigación en Diabetes and Laboratorios Esteve.

CELLEX, Biomedical Research Center

Since 2013, CELLEX center is a space with four floors located in the UB School of Medicine. Thanks to the collaboration between the public and private sectors 2,290 m2 of laboratories, scientific and technological services and other spaces are available to the research developed at IDIBAPS and the University of Barcelona.

The renovation and adaptation of these areas is mainly the result of a donation from the CELLEX Foundation. Part of the contribution of the IDIBAPS has been funded with ERDF funds from the Generalitat de Catalunya and the rest comes from specific calls by the Instituto de Salud Carlos III. These IDIBAPS facilities home over 200 researchers.

Core facilities

Excellent biomedical research requires the use of highly specialised techniques and equipment. IDIBAPS has five core facilities to provide all researchers with big infrastructures and high quality technical expertise:

Functional Genomics
NGS
Transcriptomics

Flow cytometry and cell sorting
Flow cytometry
Cell sorting

Biobank
Neurological tissue bank
Tumor and tissue bank
Biologic fluids bank

Medical Statistics
Statistics
Data management
Information technology

Magnetic Resonance Imaging
3T
7T
Image lab

On the other hand, IDIBAPS has an agreement with its consortium partners to optimise investments in infrastructures so duplicities are avoided and a wider spectrum of scientific services can be offered to the community. Universitat de Barcelona at the Clínic Campus, provides researchers with some complementary infrastructures such as microscopy, animal facility, library and proteomics.





	Services			Research	
	New internal users	New external users	Total attended users	Publications	Acknowledged publications
Biobank of Hospital Clínic - Idibaps	82	48	237	25	43
Flow cytometry and cell sorting	14	2	40	0	10
Functional genomics	21	8	67	16	7
Magnetic resonance imaging	7	16	67	15	0
Medical statistics	0	0	280	36	0

HCB-IDIBAPS Biobank

FOR FURTHER INFORMATION
www.clinicbiobanc.org
biobanc@idibaps.org

Joan Carles García Pagán, MD, PhD (HCB)
Scientific director

Aina Rodríguez, PhD
Head of core facility

DESCRIPTION

The **Biobank** coordinates the collection, processing, storage and transfer of human biological samples to promote biomedical research of the highest standard. In compliance with the legal and ethical framework, the Biobank only provides samples to projects that have been approved by the ethical and scientific committees. With the aim of optimizing the human resources and equipment in the Biobank, this facility offers a wide range of services for the processing and analysis of the samples gathered by the research groups. All the procedures performed at the Biobank are carried out under ISO 9001:2015 certification.

The HCB-IDIBAPS Biobank's catalogue of samples is formed by the samples collected by three large banks, all of which have extensive experience in research with human samples:

Neurological Tissue Bank
A nervous tissue repository (brain and spinal cord) created from donations from deceased donors with or without neurological disorders.

Tumour and Tissue Bank
A repository of tumoural and non-tumoural frozen tissue samples from around 12.000 cancer patients. Additionally, the Anatomical Pathology collection consists of paraffin-embedded tissue samples from all kind of adult diseases, which gathers more than 1.6 million tissue blocks. All these samples are surplus to diagnostic requirements from the Department of Anatomical Pathology in the Hospital Clínic.

Biological Fluids Bank
It houses a large variety of samples: primarily whole blood, serum, plasma urine and DNA isolated from body fluid samples, among others. This repository is composed by samples of patients with diverse clinical diagnosis, collected in clinical laboratories and medical interventions and surgeries for Biobank donation.

Flow cytometry and cell sorting

FOR FURTHER INFORMATION
idicitom@idibaps.org

Isabel Crespo, PhD
Head of core facility

DESCRIPTION

The **Flow Cytometry** core facility provides high quality state-of-the-art multiparametric flow cytometry and cell sorting instrumentation as well as associated expertise and services to all investigators at IDIBAPS and other outside customers. Skilled staff provide help with experimental design, sample acquisition, data analysis, sorting and help with interpreting the data and producing figures for publication.

The facility has upgraded their BD FACS Aria SORP cell sorter with the last version of the software BD FACSDiVa (v8.0.1) that includes support for index sorting and sorting using Terasaki plates.

Functional genomics

FOR FURTHER INFORMATION
genomica.idibaps@idibaps.org

Pedro Jares, PhD
Scientific director

Magda Pinyol, PhD
Head of core facility

DESCRIPTION

The **Functional Genomics** core facility provides access to different high throughput genomic technologies to the researchers. The facility manages samples for genomic analysis including transcriptional profiling, low density and large-scale genotyping, gene copy number analysis and gene-panel sequencing using different technological platforms such as real-time PCR, digital quantification, microarrays and next-generation sequencing.

Recently, we have incorporated a new next-generation sequencer, NextSeq2000 (thanks to own funds and resources obtained from the Spanish Ministry of Science, Innovation and Universities, MCIU and the European Regional Development Fund, ERDF), which will allow the implementation of new sequencing protocols such as RNASeq or EXOMES. In addition, the facility offers advice on experimental design and application of genomic technologies.

Other facilities

Magnetic resonance imaging

FOR FURTHER INFORMATION
plataformaimatgemedica@idibaps.org

Núria Bargalló MD, PhD (HCB)
Head of core facility

DESCRIPTION

The **Magnetic Resonance Imaging** (MRI) core facility is equipped with a 7 Tesla Bruker magnet for small animal imaging and a PRISMA 3 Tesla magnet for humans (thanks to own funds and resources obtained from the Spanish Ministry of Economy and Competitiveness, MINECO and the European Regional Development Fund, ERDF).

The facility provides services related to medical imaging techniques for researchers from IDIBAPS and other institutions, and to industries connected with health, as well as performs first-rate basic and clinical research into medical imaging using structural and functional magnetic resonance imaging, magnetic resonance spectroscopy, molecular imaging, other types of medical imaging and image processing.

The facility also takes care of the training of the users and keeping the state of art in MRI techniques to enable researchers conducting experimental and clinical studies, thereby allowing them to explore the advantages of translational research.

There is also a Laboratory of Image Analysis dedicated to MRI image processing and analysis. It owns different workstations available to use with the most common softwares used in the MR field installed.

Medical statistics

FOR FURTHER INFORMATION
bioestadistica@idibaps.org

Ferran Torres, MD, PhD
Head of core facility

DESCRIPTION

The **Medical Statistics** core facility provides methodological and statistical support for IDIBAPS research projects and those of allied institutions. The main objective is to promote clinical research excellence and facilitate resources to achieve this.

The platform's tasks are conducted in compliance with the International Conference of Harmonisation guidelines, European and local laws, as well as with the regulatory recommendations. Standard Operating Procedures (SOPs) are in place to fulfil those standards.

High Performance Computing

DESCRIPTION

At the Institute there are resources able to process big data, especially focused on omic data and image processing, thanks to the incorporation of a new platform divided into 2 sites, one on the Barcelona Super Computing Centre (BSC) dedicated to big processing and another on IDIBAPS for small projects.This has been possible thanks to the own funds and the resources obtained from the Ministry of Science, Innovation and Universities, MCIU and the European Regional Development Fund, ERDF.

BSC has nine nodes with a total of 360 cores, 2.88 Tb of RAM and 800 Tb of disk. IDIBAPS has 3 nodes with a total of 48 cores, 2.1Tb of RAM and 240Tb of disk. This facility provides resources for the development of projects with large processing needs, and for small projects and systems dedicated to research at IDIBAPS.

Training

Doctoral theses

88 Doctoral theses defended in 2020.

16 Theses with European mention.

THESIS AUTHOR	TITLE	THESIS DIRECTORS
Kilian Abellaneda Pérez	Modulation of neural networks subtending cognitive aging	Bartres D.
Edelweiss Aldasoro Irastorza	Optimising treatment with benznidazole in adults with chronic Chagas disease: lessons from population pharmacokinetics and safety monitoring	Soy D, Gascon J.
Anna Baiges Aznar	Rare vascular liver diseases: improving diagnostic techniques and knowledge in natural history	Garcia-Pagan JC, Hernandez-Gea V.
Patricia Blanco Muñoz	Papel de AnxA6 en la regulación del transportador de L-alanina, SNAT4, en hígado de ratón	Enrich C, Rentero C.
Anna Campabadal Delgado	Idiopathic REM sleep behavior disorder and olfactory dysfunction in Parkinson's disease and premotor stages MRI and neuropsychological studies	Junqué C, Segura B.
Marco Hernández Enríquez	Transcatheter Aortic Valve Implantation: Moving Forward to Minimize Vascular and Bleeding Complications	Sabate M, Freixa X.
Raquel Maeso Díaz	The hepatic sinusoid in aging: phenotypic changes and novel therapeutic approaches	Bosch J, Gracia-Sancho J.
Robert Montal Roura	Molecular classification and biomarkers in hepatobiliary cancer	Llovet JM.
Luis Gabriel Ortega Paz	Physiological and morphological assessment of patients with coronary artery disease and impact of intracoronary devices in clinical outcomes	Brugaletta S, Sabate M.
Pedro Puerta Alcalde	Multidrug resistance challenges in bacterial infection of oncohematological patients	Soriano A, Garcia-Vidal C.
Patricia Sole Sanchez	Transcriptional and epigenetic re-programming of autoantigen-specific CD4+ T-cells by pMHC class II-based nanomedicines	Santamaría P, Serra P.
Melodía Torao Angosto	Cortical network dynamics in physiological and pharmacologically-induced brain states	Sanchez-Vives MV, Guillazo G.
Sara Torrecilla Recio	Characterization of early molecular events in the carcinogenesis of hepatocellular carcinoma	Llovet JM.
Lídia Vaqué Alcázar	Characterizing cognitive aging through multimodal MRI and NIBS: Influence of education and gene expression	Bartres D, Sala R.
Roser Vilarrasa Blasi	The role of genome architecture in normal and neoplastic B cells: a multi-omics approach	Martín-Subero I.
Lina Youssef	Omics approach to characterize different phenotypes of preeclampsia and fetal growth restriction	Gratacos E, Crispi F.
Sebastian Alvarez Grandi	Electroconvulsive therapy: clinical features and cognitive adverse effects	Grande I, Porter R.
Patricia Amoros Reboredo	Tractament de l'hepatitis C crònica amb agents antivirals directes en pacients majors de 65 anys	Soy D, Lens S.
Alba Andrés Bilbé	Mecanismes neuronals de la picor aguda i crònica en neurones sensorials: implicació del canal TRESK	Gasull X, Soto D.
Marta Arias Guillen	Utilidad de la bioimpedanciometría para la valoración del volumen y del estado nutricional del paciente en hemodiálisis	Maduell F, Fontseré N.
Cindy Guadalupe Avalos de León	Mecanismos de señalización y estrategias terapéuticas de protección en los donantes con parada cardiaca en el trasplante hepático	Peralta C.

Almudena Barbero Castillo	Mechanisms and modulation of cortical rhythms and complexity	**Sánchez-Vives MV.**
Manuel Enric Bargalló Marès	Nanopartícululas Dendríticas: estudio de nuevas estrategias en inmunoterapia frente al VIH	**Crespo A, Plana M.**
Ferran Barrachina Villalonga	Proteòmica del plasma seminal i de les seves vesícules extracel·lulars: nova font de biomarcadors útils en l'estudi de la funció espermàtica i la infertilitat masculina	**Oliva R, Jodar M.**
Joaquim Bobí i Gibert	Terapia con células madre mesenquimales derivadas del tejido adiposo alogénicas en un modelo porcino de infarto agudo de miocardio	**Rigol M, Ibañez B.**
Maria Teresa Buongiorno	Predicción de demencia en la enfermedad de Parkinson mediante biomarcadores en líquido cefalorraquídeo y de neuroimagen estructural y molecular	**Marti MJ, Compta Y.**
Debora Cabot Romero	Analysis of KRAS phosphorylation and KRAS effector domain as targets for cancer therapy	**Agell N, Jaumot M.**
Silvia Carvajal Restoy	Nuevas estrategias terapéuticas contra la enfermedad del hígado graso no alcohólico y la fibrosis hepática experimental: nanopartículas de óxido de cerio y bloqueo de PTTG1 mediante ARNip	**Jimenez W, Fernández-Varo G.**
Albert Chavero Pieres	Rac1 regula la endocitosis y la tensión de membrana plasmática mediante el control de los niveles de pi(4,5)p2 y la dinámica de actina	**Tebar F, Enrich C.**
Iñigo Chivite Araiz	Endothelial Mitofusin2 deficiency improves systemic metabolic health and delays age-associated decline	**Claret M, Graupera M.**
David Cucchiari	Expanding the use of mTOR inhibitors to high-risk kidney transplant recipients	**Revuelta I, Diekmann F.**
Adrián de la Rosa González	Impacto del ejercicio físico a largo plazo en la neuroprotección de sujetos de mediana edad: Estudio de los mecanismos moleculares involucrados	**Sanfeliu C.**
Laura Diaz Marugan	Eje cerebro-intestino en el ictus: estudio de la respuesta inmune, microbiota y barrera intestinal	**Planas AM, Miró-Mur F.**
Martí Duran Ferrer	Tracing the developmental history of B-cell tumors by DNA methylation	**Martín-Subero I**
Elbio Mariano Esperatti	Neumonía Nosocomial Adquirida en la Unidad de Cuidados Intensivos: evaluación de predictores de desenlaces adversos	**Torres A, Ferrer M.**
Roger Flores Costa	Effects of soluble guanylate cyclase stimulators on cgmp signaling pathway and the inflammation-fibrosis axis in nonalcoholic steatohepatitis	**Claria J.**
Tania Marisa Freitas Simoes	Consum de nous i envelliment saludable	**Sala A, Vidal J.**
Mattia Gallizioli	Identity and functions of dendritic cell subsets in ischaemia-induced neuroinflammation	**Planas AM, Miró-Mur F.**
Claudia Galofré Loscos	Centrosome dynamics, chromosome instability and treatment response after whole-genome doubling in colorectal cancer	**Camps J.**
Guillermo Garcia Eguren	Cambios moleculares y epigenéticos inducidos por el síndrome de Cushing en la plasticidad del tejido adiposo. Modelo animal y estudio en humanos	**Hanzu F.**
Onintza Garmendia Sorrondegui	Positive pressure therapy in respiratory diseases: telemedicine management in sleep apnea and quality control in noninvasive mechanical ventilation	**Montserrat JM, Farre R.**
Teresa Giralt Borrell	Influència de l'administració precoç de tractament antitrombòtic en pacients amb infart agut de miocardi amb elevació del segment st tractats amb intervencionisme coronari percutani primari	**Ribas N, Freixa X.**
Europa Azucena González Navarro	Reevaluando el papel de los linfocitos T CD4+: de la alorespuesta a la respuesta inmune anti-leucemia	**Juan M.**
Laura Guirado Manchon	Cardiopatías con obstrucción del tracto de salida del ventrículo derecho: estudio del remodelado cardiovascular fetal mediante ecocardiografía	**Gomez del Rincón O, Crispi F.**
Nerea Iniesta Arandia	Caracterización serológica de la cohorte RESCLE: correlación clínico-pronóstica	**Espinosa G.**
Patricia Javaloyes Victoria	Análisis de los perfiles clínicos, hemodinámicos,ecocardiográficos y factores pronóstico en pacientes con insuficiencia cardiaca aguda atendidos en los servicios de urgencias	**Miro Ò, Llorens P.**
Marta Joanna Latasiewicz	Familial amyloid polyneuropathy: ocular complications and the use of novel non-invasive imaging techniques to assess retinal involvement	**Adan A, Millá E.**

Anna Maria Leszczynska	Estudio in vitro sobre la acción del anticuerpo monoclonal anti IL-6R (Tocilizumab) en la producción de citoquinas inflamatorias en cultivos de células mononucleares de sangre periférica de pacientes con oftalmopatía tiroidea y relación de los niveles de estas citoquinas con la actividad de la enfermedad	**Adan A, Ortiz S.**
Yan Li	Analysis of the K-RAS mutant alleles and LincRNA-p21 expression in tumors and liquid biopsy as prognostic factors in surgical colorectal cancer patients	**Biete A, Navarro A.**
Lluís Llauger Garcia	Paper de la funció renal en el pronòstic dels pacientsdiagnosticatsd'insuficiència cardíaca aguda en els serveis d' urgències: anàlisi multidimensional	**Miró O, Jacob J.**
Maria Marcuello Fernandez	MicroRNAs (miRNAs) circulantes en modelos de patología digestiva: cáncer colorrectal y pancreatitis aguda	**Gironella M, Closa D.**
Lilia Georgina Martinez de la Maza	Evaluación de la regeneración hepatocelular tras hepatectomía extrema y utilidad del tratamiento con somatostatina en un modelo porcino experimental	**Fondevila C, Garcia-Valdecasas JC.**
Lina Guiomar Mendieta Badimon	Ischemic Heart Disease: Identification of novel mechanisms to achieve cardiac protection	**Sabaté M, Vilahur G.**
Jorge Moisés Lafuente	Estudio de los elementos reguladores de la embriogénesis NKX2-1, NANCI y HOTTIP en estadios precoces de cáncer de pulmón de célula no pequeña	**Marrades RM, Navarro A.**
Elisabet Montori Palacin	Unitats de Diagnòstic Ràpid: comparació d'efectivitat entre hospital de districte vs. universitari i anàlisi de predictors de temps diagnòstic i costos	**Lopez A, Bosch F.**
Ferran Nadeu Prat	Genomic determinants of chronic lymphocytic leukemia progression: from individual drivers to a heterogeneous genetic makeup	**Campo E.**
David Nicolás Ocejo	Infección aguda y reciente por VIH-1: Epidemiología en Barcelona y evaluación de una estrategia de cura funcional	**Miro JM, Sánchez-Palomino S.**
Inmaculada Nicolas Perea	Implicación clínica de la determinación y genotipado del virus del papiloma humano y la expresión inmunohistoquímica de P16INk4A en el cáncer de cuello de útero	**Torne AE, del Pino M.**
Estela Nuñez-Manchón	Adaptación del uso de codones de transgenes terapéuticos, un nuevo concepto en el diseño de adenovirus oncolíticos armados	**Fillat C.**
Amaia Ochoade Amezaga Sainz de la Maza	Mechanisms involved in microglia phagocytic activity in brain ischemia	**Planas AM, Petegnief V.**
Tanja Paul	Assessment of soluble guanylate cyclase stimulation in experimental chronic obstructive pulmonary disease	**Barberà JA.**
Rubén Pavía Collado	Rol de las proteínas α- y γ-sinucleína en la regulación de la neurotransmisión dopaminérgica nigroestriatal y mesocortical. Implicación en enfermedades neurodegenerativas y trastornos neuropsiquiátricos	**Bortolozzi A, Artigas F.**
Núria Pell Vidal	CPEB4-driven adipocyte reprogramming is required for adipogenesis and pathological inflammation in obesity-driven liver cancer: mechanisms, functions and therapeutic opportunities	**Fernández-Lobato M.**
Lidia Perea Soriano	Associació d'elements de la resposta immune innata a les infeccions bacterianes en malalties respiratòries cròniques	**Sibila O.**
Lorena Perez Amill	Inmunoterapia dirigida: estudio preclínico de la eficacia anti-tumoral de CAR-T y CAR-CB-NK para el tratamiento de neoplasias hematológicas de célula B madura	**Martin B, Urbano A.**
Elena Perpiñan Mas	Dinámica de las sustituciones asociadas a resistencia y alteración de la respuesta inmune innata en pacientes cirróticos con hepatitis C crónica tratados con antivirales de acción directa	**Perez del Pulgar S, Koutsoudakis G.**
Sebastian Podlipnik	Pronóstico en melanoma. Optimización de los esquemas de seguimiento	**Puig S.**
Mª Del Claustre Pont Sunyer	Estudio de los síntomas no motores en la enfermedad de Parkinson y en su fase prodrómica	**Tolosa E, Marti MJ.**
Núria Profitós Pelejà	Role of ZEB factors in B cell activation and malignant progression	**Postigo A, Roue R.**
Giulia Raimondi	Broadening adenoviral oncolysis in PDAC: Interrogation of patient-derived organoids for personalized virotherapy and modulation of miRNA content to boost adenoviral potency	**Fillat C.**
Marta Ramírez Pedraza	Role and therapeutic potential of CPEB4 in the development and progression of liver disease under obesity	**Fernández-Lobato M.**
Jordi Remon Masip	Real world data of an amplicon-based NGS liquid biopsy for broad molecular profiling in advanced non-small cell lung cancer patients	**Reguart N.**
Luis Alberto Reyes Figueroa	Utilidad de la Resonancia magnética intraoperatoria de bajo campo en cirugía hipofisaria. Análisis de la introducción de una nueva tecnología en nuestro ámbito hospitalario	**Enseñat J, Alobid I.**

Liseth Rivero Sanchez	Optimización de la endoscopia en el diagnóstico y vigilancia de la neoplasia colorrectal	**Pellise M, Balaguer F.**
Jose Rodes Cabau	Tratamiento Antitrombótico Tras Intervencionismo Percutáneo en Cardiopatías Estructurales/Congénitas	**Sabate M.**
Maria Ruart Millan	Modulación de la autofagia como posible diana terapéutica durante la disfunción endotelial y la fibrosis hepática	**Garcia-Pagan JC, Hernandez-Gea V.**
Pablo Ruiz Colominas	Papel de los micrornas y virus torque teno como biomarcadores del estado de inmunosupresión en trasplante hepático	**Navasa M, Crespo G.**
Evelyn Santiago Vacas	Valor pronóstico de la función del ventrículo derecho y la hipertensión pulmonar en pacientes con insuficiencia cardíaca crónica: estudio clínico y traslacional	**Garcia A, Perez F.**
Rosa María Serrano Morales	Epidemiología y expresión del síndrome antifosfolipídico: estudios prospectivos europeos de larga duración	**Cervera R, Espinosa G.**
Valérie Smolders	Functional and metabolic characterization of endothelial cells in chronic thromboembolic pulmonary hypertension	**Tura-Ceide O.**
Eva Sole Roige	Trastorn bipolar i embaràs: avaluació dels resultats obstètrics i neonatals	**Vieta E, Garcia-Esteve L.**
Heike Claudia Stein	Synaptic and circuit mechanisms of working memory and their dysfunction in anti-NMDA receptor encephalitis and schizophrenia	**Compte A.**
Teresa Torres Moral	Farmacogenética y farmacogenómica de la respuesta terapéutica a fluoxetina en niños y adolescentes	**Mas S, Lazaro ML.**
Natalia Teresa Valech Torres	Declive Cognitivo Subjetivo en la fase preclínica del continuo Alzheimer	**Rami L, Molinuevo JL.**
María Velasco de Andrés	CD5 as immunomodulatory agent in experimental models of fungal infection	**Lozano F, Carreras E.**
Luis Alberto Veloza Cabrera	Microambiente tumoral en síndromes linfoproliferativos de células B: estudio en los modelos de síndromes linfoproliferativos post-trasplante y linfomas de células del manto	**Campo E, Martinez A.**
Manel Vera Rivera	Modulación farmacológica de la disfunción endotelial en la uremia	**Cases A, Diaz-Ricart M**
Yashu Zhao	Prognostic significance of the infarct size and location in patients with ischemic stroke	**Chamorro A, Urra X.**

Seminars

During 2020, the number of seminars has been drastically reduced due to COVID19 pandemic.



1 IDIBAPS SEMINARS

2 IN-HOUSE SEMINARS

1 NEUROSCIENCES SEMINAR

1 CAMPUS CLINIC CANCER SEMINAR

5 LIVER SEMINAR

3 GASTROINTESTINAL AND PANCREATIC ONCOLOGY SEMINARS

Stepping-stone training programme

It is a training programme that seeks to provide predoctoral (R1) and postdoctoral (R2) researchers at IDIBAPS with non-scientific tools and skills which are key for the development of their careers.

This initiative started in 2016 as part of the IDIBAPS Human Resources Strategy for Researchers (HRS4R).

In 2020, the Stepping-stone programme was affected by the COVID-19 pandemic. Some face-to-face activities had to be postponed for future editions while others were adapted to online format.

1 **Plenary sessions in 2020**

4 **Workshops in 2020**

ATTENDEES

74 **Plenary sessions in 2020**

52 **Workshops in 2020**



Aula Clínic

Aula Clínic is dedicated to the promotion and dissemination of continuing education in Health Science.

It also develops, plans and provides logistical support to the training initiatives of the professionals of the Hospital Clínic de Barcelona through the design of courses, providing advice, administration, management and marketing support and disseminating the teaching activities.

In 2020, **125** professionals from the Clinic campus entrust the organization of their continuing education activity to Aula Clínic. Among others, Aula Clínic, organised:

- II Edition of the *CLINIC Barcelona Summer School*

- II National conference on HIV

- Ibero-American Congress on Bipolar Disorder

- International Congress of European Study Group on Lysosomal Diseases (ESGLD)

Patronage

The IDIBAPS-Fudació Clínic has the support of companies, entities and people who, through financial contributions or organizing fundraising activities, help to finance research projects.

They also contribute to the dissemination and social awareness of their activity.

In 2020, the Fundació Clínic received a total of **€ 3,793,698** from patronage activities.

The Foundation would like to thank all the individuals, organizations and entities that have collaborated with the institution in 2020.

Communication and public engagement

MEDIA RELATIONS

43 Press releases

PUBLIC RELATIONS

6 Events organised

SOCIAL MEDIA

Facebook
2,910 page likes*

Twitter
12,553 followers*

Linkedin
7,012 followers*

*at december 31th

PUBLIC ENGAGEMENT

33 Activities organised
(7 different categories of activities)

541 Audience Reached

ACTIVITIES
Primary school students

50 Summer Camp
Assistants

ACTIVITIES
Secondary school students

25 RecerConnecta
Participants

25 Bojos per la Medicina
Participants

ACTIVITIES
University students

29 Visit to the institution
Assistants

ACTIVITIES
General Public

212 "A la recerca de la salut" at Centre Cívic Urgell
Assistants

200 Researchers Night
Assistants

News

JANUARY

The website www.clinicbarcelona.org receives the Avedis Donabedian award for quality as the best website of a health care or social institution. *(Photo 1)*

FEBRUARY

IDIBAPS incorporates two new research groups. *(Photo 2)*

A round table of seven scientists celebrates the International Day of Women and Girls in Science.

APRIL

IDIBAPS/Hospital Clínic promotes research projects and clinical trials linked to the SARS-CoV-2 virus and COVID-19.

SEPTEMBER

The solidarity prize draw #VersióCLÍNIC raises more than €100,000 for research on the coronavirus. *(Photo 3)*

1



2





3



4

NOVEMBER

Nine researchers at Hospital Clínic-IDIBAPS and Universitat de Barcelona in the ranking of the best in the world.

Hospital Clínic-IDIBAPS is the most influential research institution in hepatology in the world.

Dr. Elías Campo, winner of the Gregorio Marañón National Research Award.

DECEMBER

The IDIBAPS-Hospital Clínic biobank renews its ISO 9001:2015 certification.

Spanish minister Pedro Duque visits Hospital Clínic-IDIBAPS to learn about the vaccine programme against SARS-CoV-2 being carried out there. *(Photo 4)*

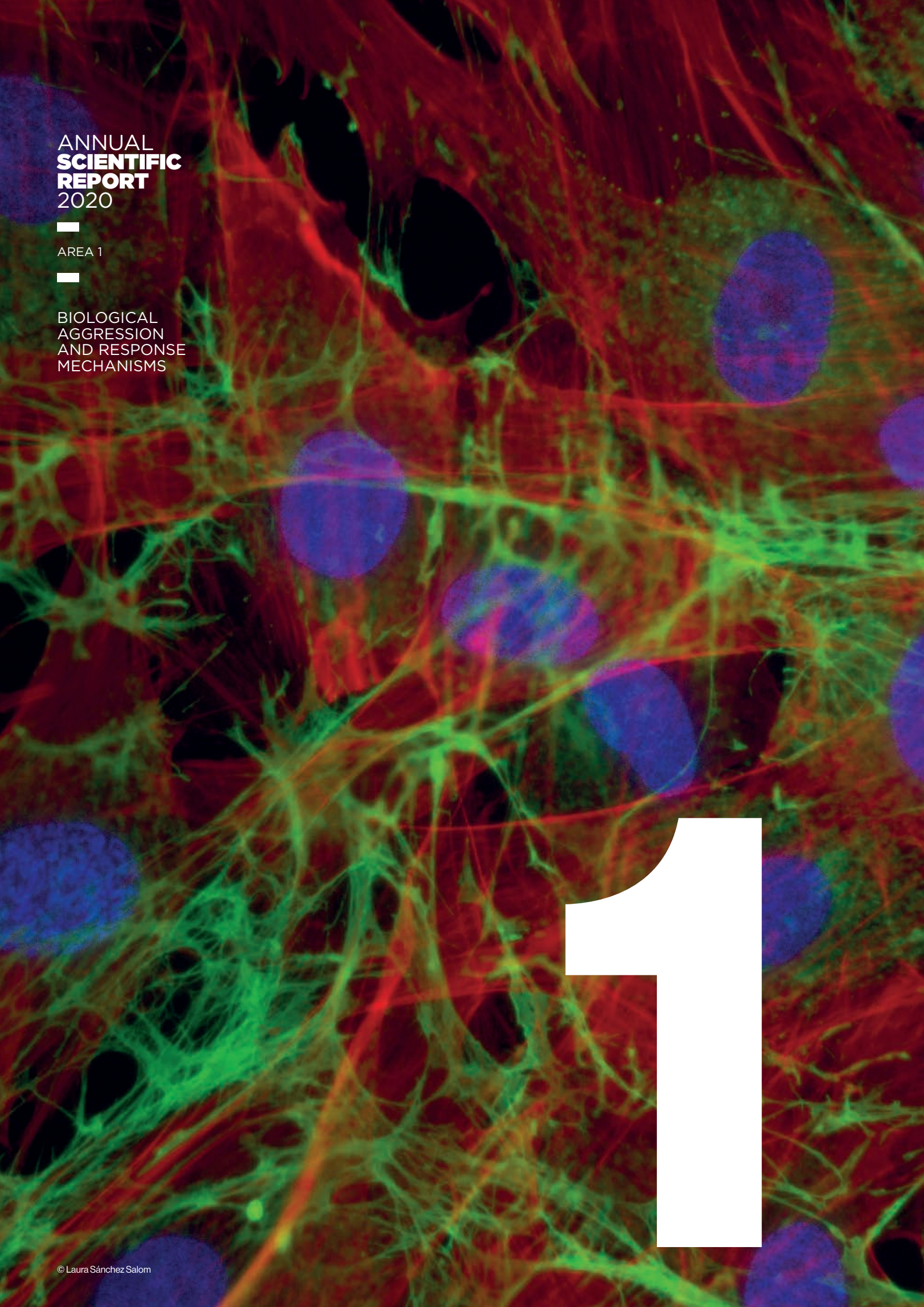
The Catalan government approves the integration of IDIBAPS and Fundació Clínic.

ANNUAL
SCIENTIFIC REPORT
2020

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

1



© Laura Sánchez Salom

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

1.1 **Ocular inflammation: clinical and experimental studies**
Alfredo Adán

1.2 **Systemic autoimmune diseases**
Ricard Cervera

1.3 **Systemic vasculitis**
Maria Cinta Cid

1.4 **Molecular and cellular bases of inflammation. Structural and biological mass spectrometry**
Daniel Closa

1.5 **Immunogenetics and immunotherapy in autoinflammatory and immune responses**
Manel Juan

1.6 **Immune receptors of the innate and adaptive system**
Francisco Lozano

1.7 **AIDS and HIV infection**
Josep Mallolas

1.8 **Endocarditis. Cardiovascular infections. Experimental model**
Josep Maria Miró

1.9 **Emergencies: processes and pathologies**
Oscar Miró

1.10 **Infections in solid-organ transplant recipients**
Asunción Moreno

1.11 **Inflammatory joint diseases (IJDs)**
Raimon Sanmartí

1.12 **Nosocomial infection**
Alex Soriano

1.1 Ocular inflammation: clinical and experimental studies

LOCATION
MATERNITAT building

KEYWORDS
1. **Ocular immunopathology**
2. **Retinal imaging**
3. **Biomarkers**
4. **Biological therapies**
5. **Artificial intelligence**

RELATED DISEASES
1. **Uveitis**
2. **Diabetic retinopathy**
3. **Age-related macular degeneration**
4. **Glaucoma**

GROUP INVOLVED IN
AGAUR_SGR17:701
OFTARED (RETIC)

Original publications

TOTAL	16
IF	**63,80**
Mean IF	**3,99**
Q1	**31%**
D1	**19%**
MA	**63%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Alfredo Adán (HCB)
T. 93 227 56 67
amadan@clinic.cat

RESEARCHERS
Víctor Llorens (HCB)
Elena Millá (HCB)
Blanca Molins (FCRB)
Maria Teresa Sáinz de la Maza (HCB)
Bernardo Sánchez Dalmau (HCB)
Javier Zarranz (HCB)

POST-DOCTORAL RESEARCHERS
Marc Figueras (HCB)
Jessica Matas (HCB)
Marta Pazos (HCB)
Anna Sala (HCB)

PRE-DOCTORAL RESEARCHERS
Aina Moll (HCB)
Sara Romero (FCRB)

TECHNICIANS
Jesus Gascón (FCRB)

NURSING STAFF
Victoria Hernández (FCRB)

COLLABORATORS
Marina Mesquida (HCB)

PROBLEM

Ocular inflammation is the underlying cause of many highly prevalent eye diseases with a major socioeconomic burden, such as diabetic retinopathy (DR), age-related macular degeneration (AMD), uveitis, scleritis, and even glaucoma. These diseases often cause irreversible loss of sight.

APPROACH

The group has a multidisciplinary profile and is made up of ophthalmologists, optometrists, biomedical researchers, engineers etc. to tackle this problem from a translational perspective: i.e., in the laboratory, it studies the pathophysiologic mechanisms involved in ocular inflammation and the immune response, and develops new tools that it applies in patients.

There is considerable interaction between basic and clinical research, and clinical practice. The cycle of patient-problem-research-therapy feeds back on itself to provide patients with a better diagnosis and the most appropriate treatments. On the other hand, advanced retinal imaging techniques based in artificial intelligence are used to investigate the role of potential novel biomarkers of disease, linked to clinical databases of interest in diabetic retinopathy and age-related macular degeneration.

IMPACT

The principal objective of the group is to promote research on inflammatory ocular diseases, especially the pathophysiologic mechanisms, the immune response and the development of new therapies, as well as to develop novel retinal imaging techniques to investigate novel biomarkers of disease linked to clinical data.

The group has taken part in the creation of new biological therapies for treating uveitis and aims to transfer this experience to other inflammatory eye diseases.

RESEARCH LINES

- Macular pathology in diabetic patients.

- Molecular basis of the inflammatory component of age-related macular degeneration (AMD) pathobiology.

- New biologic therapies for the treatment of non-infectious uveitis.

- Prognostic factors in patients with macular edema associated with non-infectious uveitis.

- Tuberculosis-related uveitis.

- Glaucoma.

- Retinal imaging, artificial intelligence and clinical databases.

PUBLICATIONS

Originals / I.F.: 63.801

1. Andorrà M; Alba-Arbalat S; Camos-Carreras A; Gabilondo I; Fraga-Pumar E; Torres-Torres R; Pulido-Valdeolivas I; Tercero-Uribe AI; Guerrero-Zamora AM; Ortiz-Perez S; Zubizarreta I; Sola-Valls N; Llufriu S; Sepulveda M; Martinez-Hernandez E; Armangue T; Blanco Y; Villoslada P; Sanchez-Dalmau B; Saiz A; Martinez-Lapiscina EH. **Using Acute Optic Neuritis Trials to Assess Neuroprotective and Remyelinating Therapies in Multiple Sclerosis.** *JAMA Neurology.* 77(2):234-244. I.F.: 13.608

2. Llorenç V, Cordero-Coma M, Blanco-Esteban A, Heras-Mulero H, Losada-Castillo MJ, Jovani-Casano V, Valls-Pascual E, Jodar-Marquez M, García-Aparicio Á, Fonollosa A, González-Guijarro JJ, Rodriguez-Melian L, Fernández-Prada M, Jerez-Fidalgo M, Hernandez-Garfella M, Esquinas C, Sainz-de-la-Maza M, Adán A, Biotherapies in Uveitis (BioÚvea) Study Group. **Drug Retention Rate and Causes of Discontinuation of Adalimumab in Uveitis: Real-World Data from the Biotherapies in Uveitis (BioÚvea) Study Group.** *Ophthalmology.* 127(6):814-825. I.F.: 8.470

3. Suhler EB, Jaffe GJ, Fortin E, Lim LL, Merrill PT, Dick AD, Brezin AP, Nguyen QD, Thorne JE, Van Calster J, Cimino L, Adan A, Goto H, Kaburaki T, Kramer M, Vitale AT, Kron M, Song AP, Liu J, Pathai S, Douglas KM, Schlaen A, Muccioli C, Van Velthoven MEJ, Zierhut M, Rosenbaum JT . **Long-Term Safety and Efficacy of Adalimumab in Patients With Noninfectious Intermediate Uveitis, Posterior Uveitis, or Panuveitis**. *Ophthalmology.* I.F.: 8.470

4. Matas J; Llorenç V; Fonollosa A; Díaz-Valle D; Esquinas C; de la Maza MTS; Figueras-Roca M; Artaraz J; Berasategui B; Mesquida M; Adán A; Molins B. **Systemic Regulatory T Cells and IL-6 as Prognostic Factors for Anatomical Improvement of Uveitic Macular Edema.** *Frontiers In Immunology.* 11(579005). I.F.: 5.085

5. Romero-Vázquez S, Adán A, Figueras-Roca M, Llorenç V, Slevin M, Vilahur G, Badimon L, Dick AD, Molins B . **Activation of C-reactive protein proinflammatory phenotype in the blood retinal barrier in vitro: implications for age-related macular degeneration.** *Aging-US.* 12(14):13905-13923. I.F.: 4.831

6. Fabiani, Claudia; Sota, Jurgen; Sainz-de-la-Maza, Maite; Pelegrin, Laura; Emmi, Giacomo; Lopalco, Giuseppe; Iannone, Florenzo; Vannozzi, Lorenzo; Guerriero, Silvana; Gelmi, Maria Chiara; Rigante, Donato; Tosi, Gian Marco; Hernandez-Rodriguez, Jose; Cantarini, Luca. **New Potential Weapons for Refractory Scleritis in the Era of Targeted Therapy.** *Mediators Of Inflammation.* 2020(8294560). I.F.: 3.758

7. Figueras-Roca M; Parrado-Carrillo A; Nguyen V; Casaroli-Marano RP; Moll-Udina A; Gillies MC; Barthelmes D; Zarranz-Ventura J. **Treat-and-extend versus fixed bimonthly treatment regimens for treatment-naive neovascular age–related macular degeneration: real world data from the Fight Retinal Blindness registry.** *Graefes archive for clinical and experimental ophthalmology.* I.F.: 2.396

8. Llorenç V, Benejam G, Mesquida M, Sainz de la Maza M, Molins B, Alba C, Pelegrin L, Martínez JA, Adán A. **Antituberculous Treatment Itself Might Prevent Visual Impairment in Presumed Tuberculosis-Related Uveitis.** *Ocular Immunology And Inflammation.* 28(1):103-110. I.F.: 2.112

9. Barraso M, Alé-Chilet A, Hernández T, Oliva C, Vinagre I, Ortega E, Figueras-Roca M, Sala-Puigdollers A, Esquinas C, Esmatjes E, Adán A, Zarranz-Ventura J. **Optical Coherence Tomography Angiography in Type 1 Diabetes Mellitus.** *Translational Vision Science & Technology.* 9(10):34. I.F.: 2.112

10. Hernanz I; Moll-Udina A; Llorenç BV; Adan CA. **Ocular Toxocariasis: Beyond Typical Patterns through the New Imaging Technologies.** *Ocular Immunology And Inflammation.* 1-7. I.F.: 2.112

11. Moll-Udina A, Miguel Escuder L, Hernanz I, Llorenç V, Fonollosa A, Cordero Coma M, Sainz de la Maza M, Espinosa G, González Guijarro JJ, Lopez Lopez F, Alba-Linero C, Hernández M, Martínez Costa L, Celdrán Vivancos D, Giralt L, Artaraz J, Soler Bartrina P, Jódar Márquez M, García de Vicuña R, Esquinas C, Adán A. **Adalimumab in Elderly Patients with Non-Infectious Uveitis.** *Ocular Immunology And Inflammation.* 1-8. I.F.: 2.112

12. Alba-Linero C; Sala-Puigdollers A; Romero B; Llorenç V; Adan A; Zarranz-Ventura J. **Long-Term Intravitreal Dexamethasone Implant Outcomes in Uveitis.** *Ocular Immunology And Inflammation.* 28(2):228-237. I.F.: 2.112

13. Figueras-Roca, Marc; Figueroa, Marta S; Calvo, Pilar; Garay-Aramburu, Gonzaga; Garcia-Martinez, Jesus R; Maria Fernandez, Ana; Pou, Aranzazu; Adan, Alfredo; EMUREX Study Grp. **Optimization of Diabetic Macular Edema Management in the Real World: A Model of Excellence in Retina Units: The EMUREX Initiative**. *Ophthalmologica.* 243(5):379-390. I.F.: 1.926

14. Alba-Linero C, Liscombe-Sepúlveda JP, Llorenç V, GiraltJosa J, Adán A. **Use of ultra-wide field retinal imaging and optical coherence tomography angiography in the diagnosis of incomplete Susac syndrome.** *European Journal Of Ophthalmology.* :1120672120965482. I.F.: 1.642

15. Garcia Layana, Alfredo; Adan, Alfredo; Javier Ascaso, Francisco; Cabrera, Francisco; Donate, Juan; Escobar Barranco, Jose Juan; Peralta, Gema; Reyes Garcia, Rebeca; Rodriguez Maqueda, Mariano; Maria Ruiz-Moreno, Jose; Vinagre, Irene; MOMENTUM-D Study Grp. **Use of intravitreal dexamethasone implants in the treatment of diabetic macular edema: Expert recommendations using a Delphi approach.** *European Journal Of Ophthalmology.* 30(5):1042-1052. I.F.: 1.642

16. Zarranz-Ventura J, Romero-Núñez B, Bernal-Morales C, Velazquez-Villoria D, Sala-Puigdollers A, Figueras-Roca M, Copete S, Distefano L, Boixadera A, García-Arumi J, Adan A, Hospital Clínic - Hospital Vall de Hebron Intravitreal Dexamethasone Implant study group. **Differential response to intravitreal dexamethasone implant in naïve and previously treated diabetic macular edema eyes.** *Bmc Ophthalmology.* 20(1):443. I.F.: 1.413

Review / I.F.: 7.767

1. Ruiz de Morales JMG, Puig L, Daudén E, Cañete JD, Pablos JL, Martín AO, Juanatey CG, Adán A, Montalbán X, Borruel N, Ortí G, Holgado-Martín E, García-Vidal C,

Vizcaya-Morales C, Martín-Vázquez V, González-Gay MÁ.

Critical role of interleukin (IL)-17 in inflammatory and immune disorders: An updated review of the evidence focusing in controversies. *Autoimmunity Reviews.* 19(1):102429. I.F.: 7.767

Letters / I.F.: 1.087

1. Figueras-Roca M; Sabater-Cruz N; Hereu M; Sánchez-Dalmau B; Gómez M; Adán A; Font D. **Integration of primary care ophthalmology in the hospital: Comparative analysis of results.** *Atención Primaria.* 52(4):281-282. I.F.: 1.087

Case Reports / I.F.: 4.224

1. Liscombe-Sepulveda, John P.; Alba-Linero, Carmen; Llorenc-Belles, Victor; Adan-Civera, Alfredo. **Utility of ultra-widefield retinal imaging in the follow-up and management of patients with Cytomegalovirus retinitis.** *Ocular Immunology and Inflammation.* 28(4):1-6. I.F.: 2.112

2. Hernanz I, Miguel Escuder L, Chamorro L, Moll-Udina A, Espinosa G, Sainz de la Maza M, Llorenç V, Adán A . **Tuberculosis-Related Uveitis in Patients under Anti-TNF-alpha Therapy: A Case Series.** *Ocular Immunology and Inflammation.* 1-6. I.F.: 2.112

Consortium Publications / I.F.: 16.102

1. Ramos-Casals M, Brito-Zerón P, Bombardieri S, Bootsma H, De Vita S, Dörner T, Fisher BA, Gottenberg JE, Hernandez-Molina G, Kocher A, Kostov B, Kruize AA, Mandl T, Ng WF, Retamozo S, Seror R, Shoenfeld Y, Sisó-Almirall A, Tzioufas AG, Vitali C, Bowman S, Mariette X, EULAR-Sjögren Syndrome Task Force Group. **EULAR recommendations for the management of Sjögren's syndrome with topical and systemic therapies.** *Annals Of The Rheumatic Diseases.* 79(1):3-18. I.F.: 16.102

GRANTS FOR RESEARCH IN PROGRESS

Adán A. **Grup de recerca de malalties inflamatòries oculars.**
Sponsored by: Gerenalitat de Catalunya.
AGAUR_SGR17_701
Duration: 01/01/2017- 30/09/2021

Adán A. **Red Temática de Investigación Cooperativa en Salud - Enfermedades oculares.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0008/0013
Duration: 01/01/2017-31/12/2021

Adán A, Llorens V. **Diseño y validación de un índice de actividad objetivo compuesto para la uveítis basado en la tomografía de coherencia óptica Swept-Source.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00316
Duration: 01/01/2018-30/06/2021

Millá E. **Estudio de factores clínicos y biomarcadores en humor acuoso asociados al glaucoma secundario a uveitis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00407
Duration: 01/01/2020-31/12/2022

Molins B. **Proteína C-reactiva monomérica como Biomarcador y Diana Terapéutica de la Degeneración Macular Asociada a la Edad.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00265
Duration: 01/01/2020-31/12/2022

Zarranz J. **Evaluation of microvascular changes in the perifoveal vascular network using Optical Coherence Tomography Angiography (OCT-A) in type I Diabetes Mellitus.**
Sponsored by: Fundació la Marató de TV3.
Diabet_16
Duration: 24/02/2017-31/12/2020

Zarranz J. **Impacto de los factores sistémicos en la red capilar perifoveal evaluada con angiografía por tomografía de coherencia óptica en diabetes mellitus tipo 1.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00518
Duration: 01/01/2019-31/12/2021

DOCTORAL THESES

Adan A. E**studio in vitro sobre la acción del anticuerpo monoclonal anti IL-6R (Tocilizumab) en la producción de citoquinas inflamatorias en cultivos de células mononucleares de sangre periférica de pacientes con oftalmopatía tiroidea y relación de los niveles de estas citoquinas con la actividad de la enfermedad.**
PhD student: Anna Maria Leszczynska

Adan A, Millá E. **Familial amyloid polyneuropathy: ocular complications and the use of novel non-invasive imaging techniques to assess retinal involvement.**
PhD student: Marta Joanna Latasiewicz

1.2 Systemic autoimmune diseases

LOCATION
HCB building
CELLEX building, floor 4B

KEYWORDS
1. **Systemic autoimmune diseases**
2. **Systemic lupus erythematosus**
3. **Antiphospholipid syndrome**
4. **Sjögren's syndrome**
5. **Systemic sclerosis**

RELATED DISEASES
1. **Systemic autoimmune diseases**

GROUP INVOLVED IN
AGAUR_SGR17: 00819, 01413

Original publications

TOTAL	40
IF	198,56
Mean IF	4,96
Q1	43%
D1	13%
MA	35%

IF = Impact Factor
MA = Main authorship (last or corresponding author)

AWARDS
"Dr. Jaime Merino" Young Internist Award
Institution: Spanish Society of Internal Medicine
Awardee: Dr. Andreu Fernández-Codina



GROUP LEADER
Ricard Cervera (HCB)
T. 93 227 57 74
rcervera@clinic.cat

RESEARCHERS
Ricardo P Casaroli-Marano (HCB)
Gerard Espinosa (HCB)
Laura Pelegrín (HCB)
Manuel Ramos-Casals (HCB)

POST-DOCTORAL RESEARCHERS
Andreu Fernández-Codina (HCB)
Nerea Iniesta (HCB)

PRE-DOCTORAL RESEARCHERS
Olga Araújo (HCB)
Giuseppe Barilaro (HCB)
Emmanuel Coloma Bazán (HCB)
Sara Isabel Dos Santos (HCB)
Alba Jerez (HCB)
Gema Maria Lledó (HCB)

ADMINISTRATIVE STAFF
Isabel Chaves (HCB)
Motserrat Gómez Segura (HCB)

COLLABORATORS
Xavier Bosch (HCB)
Alejandra Florez (IDIBAPS)
Hoda Gheitasi (IDIBAPS)
Antoni Sisó Almirall (CAPSBE)

PROBLEM

Autoimmune diseases are a group of disorders whose exact cause is unknown and in which the immune system attacks one or more organs in the body. More than 110 diseases of this type are currently known, and epidemiological studies estimate that over 10% of the population suffer from one or more of them.

In around forty of these diseases, a generalized attack against the entire body may occur; these are known as systemic autoimmune diseases. They feature highly varied clinical symptoms as a result of the simultaneous or successive involvement of different organs and systems, and they feature different antibodies as biological markers.

The clinical complexity of the diseases makes their diagnosis and control difficult. Current treatments do not yet offer a cure, as well as presenting many side effects.

APPROACH

The group promotes basic, clinical and translational research on systemic autoimmune diseases using a multidisciplinary approach and with the participation of members from different departments of Hospital Clínic, Barcelona.

It also cooperates with different international working groups, for which its team members are national or international coordinators, including: the European Working Party on Systemic Lupus Erythematosus, the European Forum on Antiphospholipid Antibodies, the Catastrophic Antiphospholipid Syndrome (CAPS) Registry Project Group, and Systemic Lupus International Collaborating Clinics (SLICC).

IMPACT

Its study of over 600 patients with systemic lupus erythematosus (SLE) has made it possible to individualize and define different clinical subgroups, such as late-onset SLE, subacute cutaneous lupus erythematosus, silent lupus nephritis, etc.

Another very important aspect of the group's work is its description of antiphospholipid syndrome (APS). This has included the original description both primary APS and catastrophic APS. Similarly, its study of large cohorts of patients with systemic sclerosis, Sjögren's syndrome and mixed cryoglobulinaemia has led to a better clinical description of these diseases.

This experience has allowed the group to create and lead various European working groups to study these diseases (European

Working Party on Systemic Lupus Erythematosus, European Forum on European Forum on Antiphospholipid Antibodies, etc.).

With our group conducting broad multidisciplinary, multi-centre studies, making use of the extensive clinical cases available will make it possible to improve the clinical and pathogenic description of these diseases and to improve their treatment.

RESEARCH LINES

- Sjögren's syndrome, autoimmune manifestations of hepatitis c virus infection and biological therapies.

- Systemic lupus erythematosus, antiphospholipid syndrome and systemic sclerosis.

PUBLICATIONS

Originals / I.F.: 198.556

1. Beretta L, Barturen G, Vigone B, Bellocchi C, Hunzelmann N, De Langhe E, Cervera R, Gerosa M, Kovács L, Ortega Castro R, Almeida I, Cornec D, Chizzolini C, Pers JO, Makowska Z, Lesche R, Kerick M, Alarcón-Riquelme ME, Martin J, PRECISESADS SSc substudy group, PRECISESADS Flow Cytometry study group. **Genome-wide whole blood transcriptome profiling in a large European cohort of systemic sclerosis patients.** *Annals Of The Rheumatic Diseases*. 79(9):1218-1226. I.F.: 16.102

2. Johnson SR, Brinks R, Costenbader KH, Daikh D, Mosca M, Ramsey-Goldman R, Smolen JS, Wofsy D, Boumpas DT, Kamen DL, Jayne D, Cervera R, Costedoat-Chalumeau N, Diamond B, Gladman DD, Hahn B, Hiepe F, Jacobsen S, Khanna D, Lerstrøm K, Massarotti E, McCune J, Ruiz-Irastorza G, Sanchez-Guerrero J, Schneider M, Urowitz M, Bertsias G, Hoyer BF, Leuchten N, Tani C, Tedeschi SK, Touma Z, Schmajuk G, Anic B, Assan F, Chan TM, Clarke AE, Crow MK, Czirják L, Doria A, Graninger WB, Halda-Kiss B, Hasni S, Izmirly PM, Jung M, Kumánovics G, Mariette X, Padjen I, Pego-Reigosa JM, Romero-Diaz J, Rúa-Figueroa Í, Seror R, Stummvoll GH, Tanaka Y, Tektonidou MG, Vasconcelos C, Vital EM, Wallace DJ, Yavuz S, Meroni PL, Fritzler MJ, Naden R, Dörner T, Aringer M. **Performance of the 2019 EULAR/ACR classification criteria for systemic lupus erythematosus in early disease, across sexes and ethnicities.** *Annals Of The Rheumatic Diseases*. 79(10):1333-1339. I.F.: 16.102

3. Urowitz MB; Gladman DD; Farewell V; Su J; Romero-Diaz J; Bae SC; Fortin PR; Sanchez-Guerrero J; Clarke AE; Bernatsky S; Gordon C; Hanly JG; Wallace DJ; Isenberg DA; Rahman A; Merrill JT; Ginzler E; Alarcón GS; Chatham WW; Petri MA; Bruce IN; Khamashta MA; Aranow C; Dooley MA; Manzi S; Ramsey-Goldman R; Nived O; Jönsen A; Steinsson K; Zoma AA; Ruiz-Irastorza G; Lim SS; Kalunian KC; İnanç M; van Vollenhoven R; Ramos-Casals M; Kamen DL; Jacobsen S; Peschken CA; Askanase A. **Accrual of Atherosclerotic Vascular Events in a Multicenter Inception Systemic Lupus Erythematosus Cohort.** *Arthritis & Rheumatology*. 72(10):1734-1740. I.F.: 9.586

4. Hanly JG, Li Q, Su L, Urowitz MB, Gordon C, Bae SC, Romero-Diaz J, Sanchez- Guerrero J, Bernatsky S, Clarke AE, Wallace DJ, Isenberg DA, Rahman A, Merrill JT, Fortin PR, Gladman DD, Bruce IN, Petri M, Ginzler EM, Dooley MA, Steinsson K, Ramsey-Goldman R, Zoma AA, Manzi S, Nived O, Jonsen A, Khamashta MA, Alarcón GS, Svenungsson E, van Vollenhoven RF, Aranow C, Mackay M, Ruiz-Irastorza G, Ramos-Casals M, Lim SS, Inanc M, Kalunian KC, Jacobsen S, Peschken CA, Kamen DL, Askanase A, Theriault C, Farewell V. **Peripheral Nervous System Disease in Systemic Lupus Erythematosus: Results From an International Inception Cohort Study.** *Arthritis & Rheumatology*. 71(1):67-77. I.F.: 9.586

5. Legge A; Kirkland S; Rockwood K; Andreou P; Bae S; Gordon C; Romero-Diaz J; Sanchez-Guerrero J; Wallace D; Bernatsky S; Clarke A; Merrill J; Ginzler E; Fortin P; Gladman D; Urowitz M; Bruce I; Isenberg D; Rahman A; Alarcón G; Petri M; Khamashta M; Dooley M; Ramsey-Goldman R; Manzi S; Zoma A; Aranow C; Mackay M; Ruiz-Irastorza G; Lim S; Inanc M; van Vollenhoven R; Jonsen A; Nived O; Ramos-Casals M; Kamen D; Kalunian K; Jacobsen S; Peschken C; Askanase A. **Prediction of Damage Accrual in Systemic Lupus Erythematosus Using the Systemic Lupus International Collaborating Clinics Frailty Index.** *Arthritis & Rheumatology*. 72(4):658-666. I.F.: 9.586

6. Pires da Rosa G; Bettencourt P; Rodríguez-Pintó I; Cervera R; Espinosa G. **"Non-criteria" antiphospholipid syndrome: A nomenclature proposal.** *Autoimmunity Reviews*. 19(12):102689. I.F.: 7.767

7. Rubio-Rivas M, Corbella X, Guillén-Del-Castillo A, Tolosa Vilella C, Colunga Argüelles D, Argibay A, Vargas Hitos JA, Todolí Parra JA, González-Echávarri C, Ortego-Centeno N, Trapiella Martínez L, Rodríguez Carballeira M, Marín Ballvé A, Pla Salas X, Perales Fraile I, Chamorro AJ, Madroñero Vuelta AB, Freire M, Ruiz Muñoz M, González García A, Pons Martín Del Campo I, Sánchez García ME, Bernal Bello D, Espinosa G, García Hernández FJ, Sáez Comet L, Ríos Blanco JJ, Fernández de la Puebla Giménez RÁ, Sánchez Trigo S, Fonollosa Pla V, Simeón Aznar CP, RESCLE investigators, Autoimmune Diseases Study Group (GEAS). **Spanish scleroderma risk score (RESCLESCORE) to predict 15-year all-cause mortality in scleroderma patients at the time of diagnosis based on the RESCLE cohort: Derivation and internal validation. Autoimmunity Reviews.** 19(5):102507. I.F.: 7.767

8. Sisó-Almirall A; Kostov B; Martínez-Carbonell E; Brito-Zerón P; Ramirez PB; Acar-Denizli N; Delicado P; González-Martínez S; Muñoz CV; Àreu JB; Ramos-Casals M. **The prevalence of 78 autoimmune diseases in Catalonia (MASCAT-PADRIS Big Data Project).** *Autoimmunity Reviews*. 19(2):102448. I.F.: 7.767

9. Enocsson H; Wirestam L; Dahle C; Padyukov L; Jönsen A; Urowitz M; Gladman D; Romero-Diaz J; Bae S; Fortin P; Sanchez-Guerrero J; Clarke A; Bernatsky S; Gordon C; Hanly J; Wallace D; Isenberg D; Rahman A; Merrill J; Ginzler E; Alarcón G; Chatham W; Petri M; Khamashta M; Aranow C; Mackay M; Dooley M; Manzi S; Ramsey-Goldman R; Nived O; Steinsson K; Zoma A; Ruiz-Irastorza G; Lim S; Kalunian K; Inanc M; van Vollenhoven R; Ramos-Casals M; Kamen D; Jacobsen S; Enocsson H; Wirestam L; Dahle C; Padyukov L; Jönsen A; Urowitz M. **Soluble urokinase plasminogen activator receptor (suPAR) levels predict damage accrual in patients with recent-onset systemic lupus erythematosus.** *Journal Of Autoimmunity*. 106(102340). I.F.: 6.658

10. Oliveira M, Palacios-Fernandez S, Cervera R, Espinosa G . **Clinical practice guidelines and recommendations for the management of patients with systemic lupus erythematosus: a critical**

comparison. *Rheumatology.* 59(12):3690-3699. I.F.: 5.606

11. Florez H, Hernández-Rodríguez J, Muxi A, Carrasco JL, Prieto-González S, Cid MC, Espinosa G, Gómez-Puerta JA, Monegal A, Guañabens N, Peris P. **Trabecular bone score improves fracture risk assessment in glucocorticoid-induced osteoporosis.** *Rheumatology.* 59(7):1574-1580. I.F.: 5.606

12. Alijotas-Reig J, Esteve-Valverde E, Ferrer-Oliveras R, Sáez-Comet L, Lefkou E, Mekinian A, Belizna C, Ruffatti A, Hoxha A, Tincani A, Nalli C, Marozio L, Maina A, Espinosa G, Ríos-Garcés R, Cervera R, Carolis S, Monteleone G, Latino O, Udry S, LLurba E, Garrido-Gimenez C, Trespidi L, Gerosa M, Chighizola CB, Rovere-Querini P, Canti V, Mayer-Pickel K, Tabacco S, Arnau A, Trapé J, Ruiz-Hidalgo D, Sos L, Farran-Codina I, EUROAPS Study Group. **Comparative study of obstetric antiphospholipid syndrome (OAPS) and non-criteria obstetric APS (NC-OAPS): report of 1640 cases from the EUROAPS registry.** *Rheumatology.* 59(6):1306-1314. I.F.: 5.606

13. Brito-Zeron, Pilar; Acar-Denizli, Nihan; Ng, Wan-Fai; Horvath, Ildiko Fanny; Rasmussen, Astrid; Seror, Raphaele; Li, Xiaomei; Baldini, Chiara; Gottenberg, Jacques-Eric; Danda, Debashish; Quartuccio, Luca; Priori, Roberta; Hernandez-Molina, Gabriela; Armagan, Berkan; Kruize, Aike A; Kwok, Seung-Ki; Kvarnstrom, Marika; Praprotnik, Sonja; Sene, Damien; Gerli, Roberto; Solans, Roser; Rischmueller, Maureen; Mandl, Thomas; Suzuki, Yasunori; Isenberg, David; Valim, Valeria; Wiland, Piotr; Nordmark, Gunnel; Fraile, Guadalupe; Bootsma, Hendrika; Nakamura, Hideki; Giacomelli, Roberto; Devauchelle-Pensec, Valerie; Hofauer, Benedikt; Bombardieri, Michele; Trevisani, Virginia Fernandes Moca; Hammenfors, Daniel; Pasoto, Sandra G; Retamozo, Soledad; Gheita, Tamer A; Atzeni, Fabiola; Morel, Jacques; Vollenweider, Cristina; Zeher, Margit; Sivils, Kathy; Xu, Bei; Bombardieri, Stefano; Sandhya, Pulukool; De Vita, Salvatore; Minniti, Antonina; Sanchez-Guerrero, Jorge; Kilic, Levent; van der Heijden, Eefje; Park, Sung-Hwan; Wahren-Herlenius, Marie; Mariette, Xavier; Ramos-Casals, Manuel; Sjogren Big Data Consortium. **Epidemiological profile and north-south gradient driving baseline systemic involvement of primary Sjogren's syndrome.** *Rheumatology.* 59(9):2350-2359. I.F.: 5.606

14. Gomez-Gomez, Alejandro; Loza, Estibaliz; Rosario, M Piedad; Espinosa, Gerard; de Morales, Jose M Garcia Ruiz; Herrera, Jose M; Munoz-Fernandez, Santiago; Rodriguez-Rodriguez, Luis; Cordero-Coma, Miguel; Spanish Soc Ocular Inflammation SE. **Efficacy and safety of immunomodulatory drugs in patients with non-infectious intermediate and posterior uveitis, panuveitis and macular edema: A systematic literature review.** *Seminars In Arthritis And Rheumatism.* 50(6):1299-1306. I.F.: 4.751

15. Nieto-Nicolau, Nuria; de la Torre, Raquel M; Farinas, Oscar; Savio, Andres; Vilarrodona, Anna; Casaroli-Marano, Ricardo P. **Extrinsic modulation of integrin alpha 6 and progenitor cell behavior in mesenchymal stem cells.** *Stem Cell Research.* 47(101899). I.F.: 4.495

16. Floris A, Espinosa G, Serpa Pinto L, Kougkas N, Lo Monaco A, Lopalco G, Orlando I, Bertsias G, Cantarini L, Cervera R, Correia J, Govoni M, Iannone F, Mathieu A, Neri P, Martins Silva A, Vasconcelos C, Muntoni M, Cauli A, Piga M, BODI Project collaborators. **Discordance between patient and physician global assessment of disease activity in Behçet's syndrome: a multicenter study cohort.** *Arthritis Research & Therapy.* 22(1):278. I.F.: 4.103

17. Sevim E, Zisa D, Andrade D, Sciascia S, Pengo V, Tektonidou MG, Ugarte A, Gerosa M, Belmont HM, Aguirre Zamorano MA, Fortin PR, Ji L, Efthymiou M, Cohen H, Branch DW, de Jesus GR, Andreoli L, Petri M, Rodriguez E, Cervera R, Knight JS, Atsumi T, Willis R, Roubey R, Bertolaccini ML, Erkan D, Barbhaiya M, APS ACTION Investigators. **Characteristics of Antiphospholipid Antibody Positive Patients in AntiPhospholipid Syndrome Alliance for Clinical Trials and InternatiOnal Networking.** *Arthritis Care & Research.* I.F.: 4.056

18. Touma, Zahi; Cervera, Ricard; Brinks, Ralph; Lorenzoni, Valentina; Tani, Chiara; Hoyer, Bimba F.; Costenbader, Karen H.; Sebastiani, Gian Domenico; Navarra, Sandra V.; Bonfa, Eloisa; Ramsey-Goldman, Rosalind; Tedeschi, Sara K.; Dorner, Thomas; Johnson, Sindhu R.; Aringer, Martin; Mosca, Marta; Amer Coll Rheuma. **Associations Between Classification Criteria Items in Systemic Lupus Erythematosus.** *Arthritis Care & Research.* 72(12):1820-1826. I.F.: 4.056

19. Barber, Megan R W; Hanly, John G; Su, Li; Urowitz, Murray B; St Pierre, Yvan; Romero-Diaz, Juanita; Gordon, Caroline; Bae, Sang-Cheol; Bernatsky, Sasha; Wallace, Daniel J; Merrill, Joan T; Isenberg, David A; Rahman, Anisur; Ginzler, Ellen M; Petri, Michelle; Bruce, Ian N; Dooley, Mary A; Fortin, Paul R; Gladman, Dafna D; Sanchez-Guerrero, Jorge; Steinsson, Kristjan; Ramsey-Goldman, Rosalind; Khamashta, Munther A; Aranow, Cynthia; Mackay, Meggan; Alarcon, Graciela S; Manzi, Susan; Nived, Ola; Jonsen, Andreas; Zoma, Asad A; van Vollenhoven, Ronald F; Ramos-Casals, Manuel; Ruiz-Irastorza, Guillermo; Lim, S Sam; Kalunian, Kenneth C; Inanc, Murat; Kamen, Diane L; Peschken, Christine A; Jacobsen, Soren; Askanase, Anca; Farewell, Vernon; Stoll, Thomas; Buyon, Jill; Clarke, Ann E. **Economic Evaluation of Damage Accrual in an International Systemic Lupus Erythematosus Inception Cohort Using a Multistate Model Approach.** *Arthritis Care & Research.* 72(12):1800-1808. I.F.: 4.056

20. Mendoza-Pinto C; Rojas-Villarraga A; Molano-González N; García-Carrasco M; Munguía-Realpozo P; Etchegaray-Morales I; Morales-Sánchez H; Berra-Romani R; Cervera R. **Endothelial dysfunction and arterial stiffness in patients with systemic lupus erythematosus: A systematic review and meta-analysis.** *Atherosclerosis.* 297:55-63. I.F.: 3.919

21. Fabiani, Claudia; Sota, Jurgen; Sainz-de-la-Maza, Maite; Pelegrin, Laura; Emmi, Giacomo; Lopalco, Giuseppe; Iannone, Florenzo; Vannozzi, Lorenzo; Guerriero, Silvana; Gelmi, Maria Chiara; Rigante, Donato; Tosi, Gian Marco; Hernandez-Rodriguez, Jose; Cantarini, Luca. **New Potential Weapons for Refractory Scleritis in the Era of Targeted Therapy.** *Mediators Of Inflammation.* 2020(8294560):8294560. I.F.: 3.758

22. Moroni L, Restovic G, Cervera R, Espinosa G, Viñas O, García M, Sampietro-Colom L . **Economic Impact Analysis of the Use of Anti-DFS70 Antibody Test In Patients with Undifferentiated Systemic Autoimmune Disease Symptoms.** *Journal Of Rheumatology.* 47(8):1275-1284. I.F.: 3.350

23. Pestaña-Fernández M, Rubio-Rivas M, Tolosa-Vilella C, Guillén-Del-Castillo A, Freire M, Vargas-Hitos JA, Todolí-Parra JA, Rodríguez-Carballeira M, Marín-Ballvé A, Espinosa G, Colunga-Argüelles D, Ortego-Centeno N, Trapiella-Martínez L,

Carbonell-Muñoz C, Pla-Salas X, Perales-Fraile I, Corbella X, Fonollosa-Pla V, Simeón-Aznar CP, RESCLE investigators, Autoimmune Diseases Study Group (GEAS). **Long-term Efficacy and Safety of Monotherapy Versus Combination Therapy in Systemic Sclerosis-associated Pulmonary Arterial Hypertension: A Retrospective Cohort Study from the Nationwide Spanish Scleroderma Registry (RESCLE).** *Journal Of Rheumatology.* 47(1):89-98. I.F.: 3.350

24. Legge, Alexandra; Kirkland, Susan; Rockwood, Kenneth; Andreou, Pantelis; Bae, Sang-Cheol; Gordon, Caroline; Romero-Diaz, Juanita; Sanchez-Guerrero, Jorge; Wallace, Daniel J; Bernatsky, Sasha; Clarke, Ann E; Merrill, Joan T; Ginzler, Ellen M; Fortin, Paul; Gladman, Dafna D; Urowitz, Murray B; Bruce, Ian N; Isenberg, David A; Rahman, Anisur; Alarcon, Graciela S; Petri, Michelle; Khamashta, Munther A; Dooley, M A; Ramsey-Goldman, Rosalind; Manzi, Susan; Zoma, Asad A; Aranow, Cynthia; Mackay, Meggan; Ruiz-Irastorza, Guillermo; Lim, S Sam; Inanc, Murat; van Vollenhoven, Ronald F; Jonsen, Andreas; Nived, Ola; Ramos-Casals, Manuel; Kamen, Diane L; Kalunian, Kenneth C; Jacobsen, Soren; Peschken, Christine A; Askanase, Anca; Hanly, John G. **Construction of a Frailty Index as a Novel Health Measure in Systemic Lupus Erythematosus.** *Journal Of Rheumatology.* 47(1):72-81. I.F.: 3.350

25. Gkrouzman E, Sevim E, Finik J, Andrade D, Pengo V, Sciascia S, Tektonidou MG, Ugarte A, Chighizola CB, Belmont HM, Lopez-Pedrera C, Ji L, Fortin P, Efthymiou M, de Jesus GR, Branch DW, Nalli C, Petri M, Rodriguez E, Cervera R, Knight JS, Atsumi T, Willis R, Bertolaccini ML, Cohen H, Rand J, Erkan D, APS ACTION+. **Antiphospholipid Antibody Profile Stability Over Time: Prospective Results from APS ACTION Clinical Database and Repository.** *Journal Of Rheumatology.* I.F.: 3.350

26. Prevete I, Espinosa G, Bellisai F, Bortoluzzi A, Conti F, Fredi M, Fonseca-Aizpuru EM, García de Viedma V, González-García A, González-León R, Iaccarino L, Iannone F, Marín-Ballvé A, Mitjavila F, Pallarés L, Piga M, Ríos-Garcés R, Suárez S, Tani C, Zanetti A, Ruiz-Irastorza G, Sebastiani GD, Gruppo di Studio SIR sul Lupus Eritematoso Sistemico di recente insorgenza-Early Lupus and Registro Español de pacientes con Lupus Eritematoso Sistémico (RELES), Autoimmune Diseases Study Group (GEAS). **Comparative study between two European inception cohorts of patients with early systemic lupus erythematosus.** *Clinical And Experimental Rheumatology.* 38(5):925-932. I.F.: 3.319

27. Iniesta Arandia N, Espinosa G, Tolosa Vilella C, Guillén Del Castillo A, Rubio Rivas M, Freire M, Vargas Hitos JA, Todolí Parra JA, Rodríguez Carballeira M, Marín Ballvé A, Colunga Argüelles D, González de Echávarri Pérez de Heredia C, Ortego-Centeno N, Trapiella Martínez L, Pla Salas X, Chamorro AJ, Perales Fraile I, Ruiz Muñoz M, Fernández de la Puebla Giménez RÁ, Madroñero Vuelta AB, Pons Martín Del Campo I, Jiménez Pérez de Heredia I, González García A, Fonollosa Pla V, Simeón Aznar CP, RESCLE Investigators, Autoimmune Diseases Study Group (GEAS). **Serodiscordant patients with systemic sclerosis: when antibody does not correspond to skin involvement.** *Clinical And Experimental Rheumatology.* 38 Suppl 125(3):106-114. I.F.: 3.319

28. Acar-Denizli, N; Horvath, I -F; Mandl, T; Priori, R; Vissink, A; Hernandez-Molina, G; Armagan, B; Praprotnik, S; Sebastian, A; Bartoloni, E; Rischmueller, M; Pasoto, S G; Nordmark, G; Nakamura, H; Fernandes Moca Trevisani, V; Retamozo, S; Carsons, S E; Maure-Noia, B; Sanchez-Berna, I; Lopez-Dupla, M; Fonseca-Aizpuru, E; Melchor Diaz, S; Vazquez, M; Diaz Cuiza, P E; de Miguel Campo, B; Ng, W -F; Rasmussen, A; Dong, X; Li, X; Baldini, C; Seror, R; Gottenberg, J -E; Kruize, A A; Sandhya, P; Gandolfo, S; Kwok, S -K; Kvarnstrom, M; Solans, R; Sene, D; Suzuki, Y; Isenberg, D A; Valim, V; Hofauer, B; Giacomelli, R; Devauchelle-Pensec, V; Atzeni, F; Gheita, T A; Morel, J; Izzo, R; Kalyoncu, U; Szanto, A; Olsson, P; Bootsma, H; Ramos-Casals, M; Kostov, B; Brito-Zeron, P; Sjogren Big Data Consortium. **Systemic phenotype related to primary Sjogren's syndrome in 279 patients carrying isolated anti-La/SSB antibodies.** *Clinical And Experimental Rheumatology.* 38(4):85-94. I.F.: 3.319

29. Brito-Zeron, P; Pasoto, S G; Robles-Marhuenda, A; Mandl, T; Vissink, A; Armagan, B; Praprotnik, S; Nocturne, G; Sebastian, A; Fernandes Moca Trevisani, V; Retamozo, S; Acar-Denizli, N; Wiland, P; Siso-Almirall, A; Bootsma, H; Mariette, X; Ramos-Casals, M; Kostov, B; Sjogren Big Data Consortium. **Autoimmune congenital heart block and primary Sjogren's syndrome: characterisation and outcomes of 49 cases.** *Clinical And Experimental Rheumatology.* 38(4):95-102. I.F.: 3.319

30. Atienza-Mateo B; Martín-Varillas JL; Graña J; Espinosa G; Moriano C; Pérez-Sandoval T; García-Armario MD; Castellví I; Román-Ivorra JA; Olivé A; Ybáñez A; Martinez-Ferrer A; Narváez J; Romero-Yuste S; Ojeda S; Ros I; Loricera J; Calvo-Río V; Castañeda S; Gonzalez-Gay MA; Blanco R; Spanish Collaborative Group of Refractory Behçet's Disease. Apremilast in refractory orogenital ulcers and other manifestations of Behçet's disease. **A national multicentre study of 51 cases in clinical practice.** *Clinical And Experimental Rheumatology.* 38 Suppl 127(5):69-75. I.F.: 3.319

31. Fabiani C, Sota J, Sainz-de-la-Maza M, Pelegrín L, Emmi G, Lopalco G, Iannone F, Vannozzi L, Guerriero S, Frediani B, Tosi GM, Hernández-Rodríguez J, Cantarini L . **Effectiveness of TNF-α blockade in the treatment of refractory non-infectious scleritis: a multicentre study**. *Clinical And Experimental Rheumatology.* 38(6):1138-1144. I.F.: 3.319

32. Nieto-Nicolau N; Martín-Antonio B; Müller-Sánchez C; Casaroli-Marano RP. **In vitro potential of human mesenchymal stem cells for corneal epithelial regeneration.** *Regenerative Medicine.* 15(3):1409-1426. I.F.: 2.598

33. Guevara SV, Feicán EA, Peláez I, Valdiviezo WA, Montaleza MA, Molina GM, Ortega NR, Delgado JA, Chimbo LE, Hernandez MV, Sanin LH, Cervera R . **Prevalence of Rheumatic Diseases and Quality of Life in the Saraguro Indigenous People, Ecuador: A Cross-sectional Community-Based Study.** *Jcr-Journal Of Clinical Rheumatology.* 26(7s suppl 2):S139-S147. I.F.: 2.360

34. Serrano R; Pons-Estel GJ; Espinosa G; Quintana RM; Reverter JC; Tassies D; Monteagudo J; Cervera R. **Long-term follow-up of antiphospholipid syndrome: real-life experience from a single center.** *Lupus.* 29(9):1050-1059. I.F.: 2.251

35. Zuily S, Clerc-Urmès I, Bauman C, Andrade D, Sciascia S, Pengo V, Tektonidou MG, Ugarte A, Gerosa M, Michael Belmont H, Zamorano MAA, Fortin P, Ji L, Efthymiou M, Cohen H, Branch DW, Jesus GR, Nalli C, Petri M, Rodriguez E, Cervera R, Knight JS, Atsumi T, Willis R, Bertolaccini ML, Vega J, Wahl D, Erkan D, APS ACTION Investigators. **Cluster**

analysis for the identification of clinical phenotypes among antiphospholipid antibody-positive patients from the APS ACTION Registry. *Lupus.* :961203320940776-961203320940776. I.F.: 2.251

36. Llorenç V, Benejam G, Mesquida M, Sainz de la Maza M, Molins B, Alba C, Pelegrin L, Martínez JA, Adán A. **Antituberculous Treatment Itself Might Prevent Visual Impairment in Presumed Tuberculosis-Related Uveitis.** *Ocular Immunology And Inflammation.* 28(1):103-110. I.F.: 2.112

37. Moll-Udina A, Miguel Escuder L, Hernanz I, Llorenç V, Fonollosa A, Cordero Coma M, Sainz de la Maza M, Espinosa G, González Guijarro JJ, Lopez Lopez F, Alba-Linero C, Hernández M, Martínez Costa L, Celdrán Vivancos D, Giralt L, Artaraz J, Soler Bartrina P, Jódar Márquez M, García de Vicuña R, Esquinas C, Adán A . **Adalimumab in Elderly Patients with Non-Infectious Uveitis.** *Ocular Immunology And Inflammation.* :1-8. I.F.: 2.112

38. Plasín-Rodríguez MA; Patricio P; Monteagudo J; García-Criado A; Cervera R; Reverter JC; Espinosa G; Tàssies D. **Procoagulant microparticles are associated with arterial disease in patients with systemic lupus erythematosus.** *Journal Of Thrombosis And Thrombolysis.* I.F.: 2.054

39. Hernandez-Gonzalez F; Prieto-González S; Brito-Zeron P; Cuerpo S; Sanchez M; Ramirez J; Agustí C; Lucena CM; Paradela M; Grafia I; Espinosa G; Sellares J. **Impact of a systematic evaluation of connective tissue disease on diagnosis approach in patients with interstitial lung diseases.** *Medicine.* 99(4):e18589. I.F.: 1.552

40. Zarranz-Ventura J, Romero-Núñez B, Bernal-Morales C, Velazquez-Villoria D, Sala-Puigdollers A, Figueras-Roca M, Copete S, Distefano L, Boixadera A, García-Arumi J, Adan A, Hospital Clínic - Hospital Vall de Hebron Intravitreal Dexamethasone Implant study group. **Differential response to intravitreal dexamethasone implant in naïve and previously treated diabetic macular edema eyes.** *Bmc Ophthalmology.* 20(1):443. I.F.: 1.413

Review / I.F.: 63.41

1. Ramos-Casals M, Brahmer JR, Callahan MK, Flores-Chávez A, Keegan N, Khamashta MA, Lambotte O, Mariette X, Prat A, Suárez-Almazor ME . **Immune-related adverse events of checkpoint inhibitors.** *Nature Reviews Disease Primers.* 6(1):38. I.F.: 40.689

2. Komici, Klara; Faris, Pawan; Negri, Sharon; Rosti, Vittorio; Garcia-Carrasco, Mario; Mendoza-Pinto, Claudia; Berra-Romani, Roberto; Cervera, Ricard; Guerra, Germano; Moccia, Francesco. **Systemic lupus erythematosus, endothelial progenitor cells and intracellular Ca2+ signaling: A novel approach for an old disease.** *Journal Of Autoimmunity.* 112(102486). I.F.: 6.658

3. Soriano A; Soriano M; Espinosa G; Manna R; Emmi G; Cantarini L; Hernández-Rodríguez J. **Current Therapeutic Options for the Main Monogenic Autoinflammatory Diseases and PFAPA Syndrome: Evidence-Based Approach and Proposal of a Practical Guide.** *Frontiers In Immunology.* 11(865). I.F.: 5.085

4. Javier Garcia-Medina, Jose; Rubio-Velazquez, Elena; Foulquie-Moreno, Elisa; Casaroli-Marano, Ricardo P; Dolores Pinazo-Duran, Maria; Zanon-Moreno, Vicente; del-Rio-Vellosillo, Monica. **Update on the Effects of Antioxidants on Diabetic Retinopathy: In Vitro Experiments, Animal Studies and Clinical Trials.** *Antioxidants.* 9(6):561. I.F.: 5.014

5. Ríos-Garcés R; Espinosa G; van Vollenhoven R; Cervera R. **Treat-to-target in systemic lupus erythematosus: Where are we?** *European Journal Of Internal Medicine.* 74:29-34. I.F.: 4.329

6. Yamamoto-Rodriguez, Liria; Zarbin, Marco A; Casaroli-Marano, Ricardo P. **New frontiers and clinical implications in the pathophysiology of age-related macular degeneration.** *Medicina Clinica.* 154(12):496-504. I.F.: 1.635

Letters / I.F.: 24.608

1. Espinosa G, Araujo O, Amaro S, Bodro M, Moreno PJ, Moreno R, Ugarte A, Cervera R . **COVID-19 and Behçet's disease: clinical case series.** *Annals Of The Rheumatic Diseases.* 80(3):1-2. I.F.: 16.102

2. Mendoza-Pinto C; Escárcega RO; García-Carrasco M; Bailey DJO; Gálvez-Romero JL; Cervera R. **Viral infections and their relationship with catastrophic antiphospholipid syndrome: a possible pathogenic mechanism of severe COVID-19 thrombotic complications.** *Journal Of Internal Medicine.* 288(6):737-739. I.F.: 6.871

3. Cairoli E, Espinosa G . **[Hydroxychloroquine in the treatment of COVID-19: how to use it waiting for conclusive scientific evidence].** *Medicina Clinica.* 155(3):134-135. I.F.: 1.635

Editorial / I.F.: 7.479

1. Serrano, Antonio; Cervera, Ricard; Gris, Jean Christophe. **Editorial: Primary Antiphospholipid Syndrome.** *Frontiers In Immunology.* 11(1993). I.F.: 5.085

2. Rodriguez-Pintó I; Espinosa G; Cervera R. **Precision medicine and the antiphospholipid syndrome: what is the future?** *Clinical Rheumatology.* 39(4):1015-1017. I.F.: 2.394

Case Reports / I.F.: 25.064

1. Ruiz de Morales JG, Cordero-Coma M, Rovira M, Calleja-Antolin S, Espinosa G, de Las Heras N. **Autologous Hematopoietic Stem Cell Transplantation for Susac Syndrome.** *Annals Of Internal Medicine.* 173(4):315-317. I.F.: 21.317

2. Hernanz I, Miguel Escuder L, Chamorro L, Moll-Udina A, Espinosa G, Sainz de la Maza M, Llorenç V, Adán A . **Tuberculosis-Related Uveitis in Patients under Anti-TNF-alpha Therapy: A Case Series.** *Ocular Immunology And Inflammation.* 1-6. I.F.: 2.112

3. Cucchiari D, Pericàs JM, Riera J, Gumucio R, Md EC, Nicolás D, Hospital Clínic 4H Team. **Pneumococcal superinfection in COVID-19 patients: A series of 5 cases.** *Medicina Clinica.* 155(11):502-505. I.F.: 1.635

Clinical Guidelines / I.F.: 19.988

1. Ramos-Casals M, Brito-Zerón P, Bombardieri S, Bootsma H, De Vita S, Dörner T, Fisher BA, Gottenberg JE, Hernandez-Molina G, Kocher A, Kostov B, Kruize AA,

Mandl T, Ng WF, Retamozo S, Seror R, Shoenfeld Y, Sisó-Almirall A, Tzioufas AG, Vitali C, Bowman S, Mariette X, EULAR-Sjögren Syndrome Task Force Group. **EULAR recommendations for the management of Sjögren's syndrome with topical and systemic therapies.** *Annals of the Rheumatic Diseases*. 79(1):3-18. I.F.: 16.102

2. Cervera R; Rodríguez-Pintó I; Legault K; Erkan D. **16th International Congress on Antiphospholipid Antibodies Task Force report on catastrophic antiphospholipid syndrome.** *Lupus*. 29(12):1594-1600. I.F.: 2.251

3. Espinosa, Gerard; Herreras, Jose M; Munoz-Fernandez, Santiago; Ruiz de Morales, Jose M Garcia; Cordero-Coma, Miguel. **Recommendations statement on the immunosuppressive treatment of non-infectious, non-neoplastic, non-anterior uveitis**. *Medicina Clinica*. 155(5):220.e1--220.e12. I.F.: 1.635

Consortium Publications / I.F.: 43.601

1. Wallace ZS, Naden RP, Chari S, Choi HK, Della-Torre E, Dicaire JF, Hart PA, Inoue D, Kawano M, Khosroshahi A, Lanzillotta M, Okazaki K, Perugino CA, Sharma A, Saeki T, Schleinitz N, Takahashi N, Umehara H, Zen Y, Stone JH, Members of the ACR/EULAR IgG4-RD Classification Criteria Working Group. **The 2019 American College of Rheumatology/European League against Rheumatism classification criteria for IgG4-related disease**. *Annals Of The Rheumatic Diseases*. 79(1):77-87. I.F.: 16.102

2. Wallace ZS, Naden RP, Chari S, Choi H, Della-Torre E, Dicaire JF, Hart PA, Inoue D, Kawano M, Khosroshahi A, Kubota K, Lanzillotta M, Okazaki K, Perugino CA, Sharma A, Saeki T, Sekiguchi H, Schleinitz N, Stone JR, Takahashi N, Umehara H, Webster G, Zen Y, Stone JH; American College of Rheumatology/European League Against Rheumatism IgG4-Related Disease Classification Criteria Working Group . **The 2019 American College of Rheumatology/European League Against Rheumatism Classification Criteria for IgG4-Related Disease.** *Arthritis & Rheumatology*. 72(1):7-19. I.F.: 9.586

3. González-Serna D, Ochoa E, López-Isac E, Julià A, Degenhardt F, Ortego-Centeno N, Radstake TRDJ, Franke A, Marsal S, Mayes MD, Martín J, Márquez A, Scleroderma Genetic Consortium. **A cross-disease meta-GWAS identifies four new susceptibility loci shared between systemic sclerosis and Crohn's disease.** *Scientific Reports (Nature Publisher Group)*. 10(1):1862. I.F.: 3.998

4. Thiagarajan D, Oparina N, Lundström S, Zubarev R, Sun J,, Alarcon-Riquelme M, Frostegård J PRECISESADS Clinical Consortium. **IgM antibodies against malondialdehyde and phosphorylcholine in different systemic rheumatic diseases.** *Scientific Reports (Nature Publisher Group)*. 10(1):11010. I.F.: 3.998

5. Le Lann L, Jouve PE, Alarcón-Riquelme M, Jamin C, Pers JO, PRECISESADS Flow Cytometry Study Group, PRECISESADS Clinical Consortium. **Standardization procedure for flow cytometry data harmonization in prospective multicenter studies.** *Scientific Reports (Nature Publisher Group)*. 10(1):11567. I.F.: 3.998

6. Inciarte, A; Leal, L; Masfarre, L; Gonzalez, E; Diaz-Brito, V; Lucero, C; Garcia-Pindado, J; Leon, A; Garcia, F; Sexual Assault Victims Study Grp. **Post-exposure prophylaxis for HIV infection in sexual assault victims.** *Hiv Medicine*. 21(1):43-52. I.F.: 3.556

7. Martín-Sánchez FJ, Llopis García G, González-Colaço Harmand M, Fernandez Pérez C, González Del Castillo J, Llorens P, Herrero P, Jacob J, Gil V, Domínguez-Rodriguez A, Rossello X, Miró O, en representación de los investigadores del Registro OAK, Resto de investigadores del registro OAK. **Identification of Senior At Risk scale predicts 30-day mortality among older patients with acute heart failure.** *Medicina Intensiva*. 44(1):9-17. I.F.: 2.363

GRANTS FOR RESEARCH IN PROGRESS

Cervera R, Panés J. **Taxonomy, treatment, targets and remission-Identification of the molecular mechanisms of non-response to treatments, relapses and remission in autoimmune, inflammatory, and allergic conditions (3TR).**
Sponsored by: European Comission.
CE_IMI2-2018-14
Duration: 01/10/2019-31/09/2026

Ramos Casals M. **Harmonization and integrative analysis of regional, national and international Cohorts on primary Sjögrens Syndrome towards improved stratification, treatment and health policy.**
Sponsored by: European Comission.
CE_H2020-SC1_16abr1s
Duration: 01/01/2017-30/06/2020

Ramos-Casals M. **New Clinical Endpoints in primary Sjögren#s Syndrome: an Interventional Trial based on stratifYing patients.**
Sponsored by: European Commission.
CE_IMI2_2017_12th
Duration: 01/01/2019-31/12/2024

DOCTORAL THESES

Cervera R, Espinosa G. **Epidemiología y expresión del síndrome antifosfolipídico: estudios prospectivos europeos de larga duración.**
PhD student: Rosa María Serrano Morales

Espinosa G. **Caracterización serológica de la cohorte RESCLE: correlación clínico-pronóstica.**
PhD student: Nerea Iniesta Arandia

1.3 Systemic vasculitis

LOCATION
CELLEX building, floor 4B

KEYWORDS
1. **Vascular inflammation**
2. **Autoimmunity**
3. **Vascular remodelling and fibrosis**
4. **Biomarkers**
5. **Therapeutic targets**
6. **Innovative therapies**

RELATED DISEASES
1. **Systemic vasculitis**
2. **Autoimmune diseases**
3. **Autoinflammatory diseases**

GROUP INVOLVED IN
AGAUR_SGR17: 01592

Original publications

TOTAL	16
IF	101,63
Mean IF	6,35
Q1	56%
D1	13%
MA	0%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Maria Cinta Cid (HCB)
T. 93 227 57 74
mccid@clinic.cat

RESEARCHERS
Georgina Espigol Frigolé (HCB-IDIBAPS)
José Hernández Rodríguez (HCB)

POST-DOCTORAL RESEARCHERS
Marco Antonio Alba (IDIBAPS)
Marc Corbera (IDIBAPS)
Sergio Prieto (HCB)

PRE-DOCTORAL RESEARCHERS
Roser Alba (IDIBAPS)
Farah Kamberovic (IDIBAPS)
Javier Marco Hernández (HCB)
Roberto Ríos Garcés (IDIBAPS)

COLLABORATORS
Ana García Martínez (HCB)

PROBLEM

The systemic vasculitides encompass an heterogenous grup of rare diseases characterised by chronic inflammation of blood vessels. The inflammatory process leads to the occlusion, dilatation or rupture of the involved vasculature with the potential of severe complications.

The vasculitides are relapsing disases and irreversible damage derived from the disease activity or treatments cumulate over the years with a deep impact on quality of life. 5-year mortality is still 15-20%.

APPROACH

The group's research focuses on
a) Investigating mechanisms involved in vascular inflammation and remodeling,
b) Identifiying biomarkers clinically useful for diagnosis, prognosis, assessment of disease activity and prediction of reponse to conventional and new therapies,
c) Development of functional models and pre-clinical testing of targeted therapies,
d) Design and performance of innovative clinical trials. The group studies pathogenic pathways related to the development of inflammation and vascular remodelling in samples (blood, tissue and primary cultures) from patients with vasculitis, using biochemical , cellular and molecular biology techniques, in vitro functional models (adhesion, migration, chemotaxis, angiogenesis) and ex-vivo tissue cultures. Both candidate molecule approach and omics are used for biomarker studies which are applied to carefully characterized prospective patient cohorts with defined clinical and imaging outcomes. The group has developd a wide network of national and international collaboration, essential for studies on rare diseases.

IMPACT

The group has contributed to:

- Improvement of the diagnostic accuracy of systemic vaculitis by identifying histopathologic and imaging findings with diagnostic potential

-Identification of clinical, biologic and immunopathologic (blood and tissue) biomarkers predictors of vascular complications or relapsing disease

- Contribution to large-scale genetic studies characterizing the genetic background of giant-cell arteritis and eosinophilic granulomatosis with polyangiitis.

-Development of original functional models (primary cells, co-cultures and ex-vivo 3D tissue culture). These have attracted the interest of companies leading to research agreements and are currently used by other reearchers.

- Identification of potential therapeutic targets ad pre-clinical testing of targeted therapies.

-Participation in the design and performance of innovative clinical trials leading to the approval of new treatments.

- Contribution of the group have impacted national and international guidelines for the management of systemic vasculitis. Reflected in the most important national and international clinical guidelines.

RESEARCH LINES

SYSTEMIC VASCULITIS. MECHANISMS INVOLVED IN INFLAMMATION AND VASCULAR REMODELING AS A SOURCE OF BIOMARKERS OF CLINICAL UTILITY AND THERAPEUTIC TARGETS

- Accurate characterization of patient cohorts (systemic vasculitis and autoinflammatory diseases) according to relevant outcomes (disease extent, relapses, complications derived from vascular occlusion or dilatation, or reparative fibrosis, treatment toxicity) according to international consensus.

- Identification of biomarkers associated with specific phenotypes, prognosis or response to therapies (clinical or imaging data, genetic, epigenetic, immunopathological or molecular biomarkers in biologic fluids or tissues) through candidate biomarker approach or through multi-omic approaches, locally or through multi-centre collaboration.

- Funtional testing of candidate molecules/pathways in in vitro models including primary cell cultures and co-cultures, biologic models (adhesion, migration, angiogenesis), 3D-models, ex-vivo explants.

- Generation of pre-clinical data with targeted therapies in these models.

- Participation in the design and performance of innovative clinical trials with targeted therapies in patients with systemic vasculitis.

PUBLICATIONS

Originals / I.F.: 101.628

1. Pinato DJ, Zambelli A, Aguilar-Company J, Bower M, Sng C, Salazar R, Bertuzzi A, Brunet J, Mesia R, Segui E, Biello F, Generali D, Grisanti S, Rizzo G, Libertini M, Maconi A, Harbeck N, Vincenzi B, Bertulli R, Ottaviani D, Carbo A, Bruna R, Benafif S, Marrari A, Wuerstlein R, Carmona-Garcia MC, Chopra N, Tondini C, Mirallas O, Tovazzi V, Betti M, Provenzano S, Fotia V, Cruz CA, Dalla Pria A, D'Avanzo F, Evans JS, Saoudi-Gonzalez N, Felip E, Galazi M, Garcia-Fructuoso I, Lee AJX, Newsom-Davis T, Patriarca A, Garcia-Illescas D, Reyes R, Dileo P, Sharkey R, Wong YNS, Ferrante D, Marco-Hernandez J, Sureda A, Maluquer C, Ruiz-Camps I, Gaidano G, Rimassa L, Chiudinelli L, Izuzquiza M, Cabirta A, Franchi M, Santoro A, Prat A, Tabernero J, Gennari A . **Clinical Portrait of the SARS-CoV-2 Epidemic in European Patients with Cancer.** *Cancer Discovery.* 10(10):1465-1474. I.F.: 29.497

2. Ehling M, Celus W, Martín-Pérez R, Alba-Rovira R, Willox S, Ponti D, Cid MC, Jones EAV, Di Conza G, Mazzone M . **B55 α/PP2A Limits Endothelial Cell Apoptosis During Vascular Remodeling: A Complementary Approach To Kill Pathological Vessels?** *Circulation Research.* 127(6):707-723. I.F.: 14.467

3. Matas-García A; Milisenda JC; Selva-O'Callaghan A; Prieto-González S; Padrosa J; Cabrera C; Reguart N; Castrejón N; Solé M; Ros J; Trallero-Araguas E; Antoniol MN; Vila-Pijoan G; Grau JM. **Emerging PD-1 and PD-1L inhibitors-associated myopathy with a characteristic histopathological pattern.** *Autoimmunity Reviews.* 19(2):102455. I.F.: 7.767

4. Pinato DJ, Lee AJX, Biello F, Seguí E, Aguilar-Company J, Carbó A, Bruna R, Bower M, Rizzo G, Benafif S, Carmona C, Chopra N, Cruz CA, D'Avanzo F, Evans JS, Galazi M, Garcia-Fructuoso I, Dalla Pria A, Newsom-Davis T, Ottaviani D, Patriarca A, Reyes R, Sharkey R, Sng CCT, Wong YNS, Ferrante D, Scotti L, Avanzi GC, Bellan M, Castello LM, Marco-Hernández J, Mollà M, Pirisi M, Ruiz-Camps I, Sainaghi PP, Gaidano G, Brunet J, Tabernero J, Prat A, Gennari A. **Presenting Features and Early Mortality from SARS-CoV-2 Infection in Cancer Patients during the Initial Stage of the COVID-19 Pandemic in Europe.** *Cancers.* 12(7):1841-13. I.F.: 6.126

5. Florez H, Hernández-Rodríguez J, Muxi A, Carrasco JL, Prieto-González S, Cid MC, Espinosa G, Gómez-Puerta JA, Monegal A, Guañabens N, Peris P . **Trabecular bone score improves fracture risk assessment in glucocorticoid-induced osteoporosis.** *Rheumatology.* 59(7):1574-1580. I.F.: 5.606

6. Alijotas-Reig J, Esteve-Valverde E, Ferrer-Oliveras R, Sáez-Comet L, Lefkou E, Mekinian A, Belizna C, Ruffatti A, Hoxha A, Tincani A, Nalli C, Marozio L, Maina A, Espinosa G, Ríos-Garcés R, Cervera R, Carolis S, Monteleone G, Latino O, Udry S, LLurba E, Garrido-Gimenez C, Trespidi L, Gerosa M, Chighizola CB, Rovere-Querini P, Canti V, Mayer-Pickel K, Tabacco S, Arnau A, Trapé J, Ruiz-Hidalgo D, Sos L, Farran-Codina I, EUROAPS Study Group. **Comparative study of obstetric antiphospholipid syndrome (OAPS) and non-criteria obstetric APS (NC-OAPS): report of 1640 cases from the EUROAPS registry.** Rheumatology. 59(6):1306-1314. I.F.: 5.606

7. Serrat N, Guerrero-Hernández M, Matas-Céspedes A, Yahiaoui A, Valero JG, Nadeu F, Clot G, Di Re M, Corbera-Bellalta M, Magnano L, Rivas-Delgado A, Enjuanes A, Beà S, Cid MC, Campo E, Montero J, Hodson DJ, López-Guillermo A, Colomer D, Tannheimer S, Pérez-Galán P. **PI3Kδ inhibition reshapes follicular lymphoma-immune microenvironment cross talk and unleashes the activity of venetoclax**. *Blood Advances.* 4(17):4217-4231. I.F.: 4.910

8. López-Mejías R, Remuzgo-Martínez S, Genre F, Pulito-Cueto V, Rozas SMF, Llorca J, Fernández DI, Cuesta VMM, Ortego-Centeno N, Gómez NP, Mera-Varela A, Martínez-Barrio J, López-Longo FJ, Mijares V, Lera-Gómez L, Usetti MP, Laporta R, Pérez V, Gafas AP, González MAA, Calvo-Alén J, Romero-Bueno F, Sanchez-Pernaute O, Nuno L, Bonilla G, Balsa A, Hernández-González F, Grafia I, Prieto-González S, Narvaez J, Trallero-Araguas E, Selva-O'Callaghan A, Gualillo O, Castañeda S, Cavagna L, Cifrian JM, González-Gay MA. **Influence of MUC5B gene on antisynthetase syndrome**. *Scientific Reports (Nature Publisher Group).* 10(1):1415. I.F.: 3.998

9. Fabiani, Claudia; Sota, Jurgen; Sainz-de-la-Maza, Maite; Pelegrin, Laura; Emmi, Giacomo; Lopalco, Giuseppe; Iannone, Florenzo; Vannozzi, Lorenzo; Guerriero, Silvana; Gelmi, Maria Chiara; Rigante, Donato; Tosi, Gian Marco; Hernandez-Rodriguez, Jose; Cantarini, Luca. **New Potential Weapons for Refractory Scleritis in the Era of Targeted Therapy.** *Mediators Of Inflammation.* 2020(8294560). I.F.: 3.758

10. Vitale A; Sota J; Obici L; Ricco N; Maggio MC; Cattalini M; Ruscitti P; Caso F; Manna R; Viapiana O; Caggiano V; Emmi G; Insalaco A;

Montin D; Licciardi F; Soriano A; Dagna L; Salvarani C; Lamacchia V; Hernández-Rodríguez J; Giacomelli R; Frediani B; Renieri A; Cantarini L. **Role of Colchicine Treatment in Tumor Necrosis Factor Receptor Associated Periodic Syndrome (TRAPS): Real-Life Data from the AIDA Network.** *Mediators Of Inflammation.* 2020(1936960). I.F.: 3.758

11. Gaggiano, Carla; Vitale, Antonio; Obici, Laura; Merlini, Giampaolo; Soriano, Alessandra; Viapiana, Ombretta; Cattalini, Marco; Maggio, Maria Cristina; Lopalco, Giuseppe; Montin, Davide; Jaber, Masen Abdel; Dagna, Lorenzo; Manna, Raffaele; Insalaco, Antonella; Piga, Matteo; La Torre, Francesco; Berlengiero, Virginia; Gelardi, Viviana; Ciarcia, Luisa; Emmi, Giacomo; Ruscitti, Piero; Caso, Francesco; Cimaz, Rolando; Hernandez-Rodriguez, Jose; Parronchi, Paola; Sicignano, Ludovico Luca; Verrecchia, Elena; Iannone, Florenzo; Sota, Jurgen; Grosso, Salvatore; Salvarani, Carlo; Frediani, Bruno; Giacomelli, Roberto; Mencarelli, Maria Antonietta; Renieri, Alessandra; Rigante, Donato; Cantarini, Luca. **Clinical Features at Onset and Genetic Characterization of Pediatric and Adult Patients with TNF-alpha Receptor-Associated Periodic Syndrome (TRAPS): A Series of 80 Cases from the AIDA Network.** *Mediators Of Inflammation.* 2020(8562485). I.F.: 3.758

12. Prevete I, Espinosa G, Bellisai F, Bortoluzzi A, Conti F, Fredi M, Fonseca-Aizpuru EM, García de Viedma V, González-García A, González-León R, Iaccarino L, Iannone F, Marín-Ballvé A, Mitjavila F, Pallarés L, Piga M, Ríos-Garcés R, Suárez S, Tani C, Zanetti A, Ruiz-Irastorza G, Sebastiani GD, Gruppo di Studio SIR sul Lupus Eritematoso Sistemico di recente insorgenza-Early Lupus and Registro Español de pacientes con Lupus Eritematoso Sistémico (RELES), Autoimmune Diseases Study Group (GEAS). **Comparative study between two European inception cohorts of patients with early systemic lupus erythematosus.** *Clinical And Experimental Rheumatology.* 38(5):925-932. I.F.: 3.319

13. Fabiani C, Sota J, Sainz-de-la-Maza M, Pelegrín L, Emmi G, Lopalco G, Iannone F, Vannozzi L, Guerriero S, Frediani B, Tosi GM, Hernández-Rodríguez J, Cantarini L. **Effectiveness of TNF-α blockade in the treatment of refractory non-infectious scleritis: a multicentre study.** Clinical And Experimental Rheumatology. 38(6):1138-1144. I.F.: 3.319

14. Tuca A, Viladot M, Barrera C, Chicote M, Casablancas I, Cruz C, Font E, Marco-Hernández J, Padrosa J, Pascual A, Codorniu N, Román B . **Prevalence of ethical dilemmas in advanced cancer patients (secondary analysis of the PALCOM study).** *Supportive Care In Cancer.* I.F.: 2.635

15. Hernandez-Gonzalez F; Prieto-González S; Brito-Zeron P; Cuerpo S; Sanchez M; Ramirez J; Agustí C; Lucena CM; Paradela M; Grafia I; Espinosa G; Sellares J. **Impact of a systematic evaluation of connective tissue disease on diagnosis approach in patients with interstitial lung diseases.** *Medicine. 99(4):e18589.* I.F.: 1.552

16. Montori-Palacín E, Ramon J, Compta Y, Insa M, Prieto-González S, Carrasco-Miserachs I, Vidal-Serra RX, Altes-Capella J, López-Soto A, Bosch X. **Quick diagnosis units: predictors of time to diagnosis and costs.** *Medicine.* 99(30):e21241. I.F.: 1.552

17. Florez H, Hernández-Rodríguez J, Carrasco JL, Prieto-González S, Muxi A, Filella X, Ruiz-Gaspà S, Gómez-Puerta JA, Cid M, Espinosa G, Monegal A, Guañabens N, Peris P. **Vertebral fracture risk in glucocorticoid-induced osteoporosis: the role of hypogonadism and corticosteroid boluses.** *RMD Open.* 6(2):e001355.

Review / I.F.: 26.011

1. Hernández-Rodríguez J, Carbonell C, Mirón-Canelo JA, Diez-Ruiz S, Marcos M, Chamorro AJ. **Rituximab treatment for IgA vasculitis: A systematic review.** *Autoimmunity Reviews.* 19(4):102490. I.F.: 7.767

2. Cid, Maria C; Rios-Garces, Roberto; Terrades-Garcia, Nekane; Espigol-Frigole, Georgina. **Treatment of giant-cell arteritis: from broad spectrum immunosuppressive agents to targeted therapies.** *Rheumatology.* 59(3):17-27. I.F.: 5.606

3. Soriano A; Soriano M; Espinosa G; Manna R; Emmi G; Cantarini L; Hernández-Rodríguez J. **Current Therapeutic Options for the Main Monogenic Autoinflammatory Diseases and PFAPA Syndrome: Evidence-Based Approach and Proposal of a Practical Guide.** *Frontiers In Immunology.* 11(865). I.F.: 5.085

4. Ríos-Garcés R; Espinosa G; van Vollenhoven R; Cervera R. **Treat-to-target in systemic lupus erythematosus: Where are we?** *European Journal Of Internal Medicine.* 74:29-34. I.F.: 4.329

5. González-Gay MA; Mayo J; Castañeda S; Cifrián JM; Hernández-Rodríguez J. **Tocilizumab: from the rheumatology practice to the fight against COVID-19, a virus infection with multiple faces.** *Expert Opinion On Biological Therapy.* 20(7):717-723. I.F.: 3.224

Editorial / I.F.: 5.085

1. Aksentijevich I; Soriano A; Hernández-Rodríguez J. **Editorial: Autoinflammatory Diseases: From Genes to Bedside.** *Frontiers In Immunology.* 11(1177). I.F.: 5.085

Case Reports / I.F.: 11.212

1. Villarreal-Compagny M, Iglesias P, Marco-Hernández J, Milisenda JC, Casanova-Molla J, Hernández-Rodríguez J, Puig S, Carrera C, Prieto-González S . **ANCA-associated vasculitic neuropathy during treatment with ipilimumab.** *Rheumatology.* 59(1):251-252. I.F.: 5.606

2. Gonzalez-Garcia, Andres; Garcia-Sanchez, Isabel; Lopes, Vanessa; Munoz Moreno-Arrones, Oscar; Tortosa-Cabanas, Marina; Elias-Saenz, Isabel; Hernandez-Rodriguez, Jose. **Successful treatment of severe COVID-19 with subcutaneous anakinra as a sole treatment.** *Rheumatology.* 59(8):2171-2173. I.F.: 5.606

Clinical Guidelines / I.F.: 27.314

1. Hellmich B; Agueda A; Monti S; Buttgereit F; De Boysson H; Brouwer E; Cassie R; Cid MC; Dasgupta B; Dejaco C; Hatemi G; Hollinger N; Mahr A; Mollan SP; Mukhtyar C; Ponte C; Salvarani C; Sivakumar R; Tian X; Tomasson G; Turesson C; Schmidt W; Villiger PM; Watts R; Young C; Luqmani RA. **2018 Update of the EULAR recommendations for the management of large vessel vasculitis.** *Annals Of The Rheumatic Diseases.* 79(1):19-30. I.F.: 16.102

2. Mackie SL; Dejaco C; Appenzeller S; Camellino D; Duftner C; Gonzalez-Chiappe S; Mahr A; Mukhtyar C; Reynolds G; de Souza AWS; Brouwer E; Bukhari M; Buttgereit F; Byrne D; Cid MC; Cimmino M; Direskeneli H;

Gilbert K; Kermani TA; Khan A; Lanyon P; Luqmani R; Mallen C; Mason JC; Matteson EL; Merkel PA; Mollan S; Neill L; Sullivan EO; Sandovici M; Schmidt WA; Watts R; Whitlock M; Yacyshyn E; Ytterberg S; Dasgupta B. **British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis: executive summary**. *Rheumatology*. 59(3):487-494. I.F.: 5.606

3. Mackie SL; Dejaco C; Appenzeller S; Camellino D; Duftner C; Gonzalez-Chiappe S; Mahr A; Mukhtyar C; Reynolds G; de Souza AWS; Brouwer E; Bukhari M; Buttgereit F; Byrne D; Cid MC; Cimmino M; Direskeneli H; Gilbert K; Kermani TA; Khan A; Lanyon P; Luqmani R; Mallen C; Mason JC; Matteson EL; Merkel PA; Mollan S; Neill L; Sullivan EO; Sandovici M; Schmidt WA; Watts R; Whitlock M; Yacyshyn E; Ytterberg S; Dasgupta B. **British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis.** *Rheumatology*. 59(3):e1-e23. I.F.: 5.606

Consortium Publications / I.F.: 10.229

1. Londoño MC, Reig M, RETOINMUNO Multidisciplinary Group. . **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers*. 12(11):1-22. I.F.: 6.126

2. Floris A, Espinosa G, Serpa Pinto L, Kougkas N, Lo Monaco A, Lopalco G, Orlando I, Bertsias G, Cantarini L, Cervera R, Correia J, Govoni M, Iannone F, Mathieu A, Neri P, Martins Silva A, Vasconcelos C, Muntoni M, Cauli A, Piga M, BODI Project collaborators. **Discordance between patient and physician global assessment of disease activity in Behçet's syndrome: a multicenter study cohort.** *Arthritis Research & Therapy*. 22(1):278. I.F.: 4.103

3. Piga M, Floris A, Espinosa G, Serpa Pinto L, Kougkas N, Lo Monaco A, Lopalco G, Orlando I, Pirani V, Santos E, Bertsias G, Cantarini L, Cauli A, Cervera R, Correia J, Govoni M, Iannone F, Neri P, Martins Silva A, Vasconcelos C, Muntoni M, Mathieu A; the BODI Project Group. **Development and preliminary validation of the Behçet's syndrome Overall Damage Index (BODI).** *RMD Open*. 6(2):e001192.

GRANTS FOR RESEARCH IN PROGRESS

Cid MC. **Dilatació d'aorta ascendent i aneurismes coronaris en pacients amb vasculitis sistèmiques (arteritis de cèlules gegants i malaltia de Kawasaki). Rol de la via HIF en remodelatge/inflamació vascular.**
Sponsored by: Fundació La Marató de TV3. Cor_15
Duration: 10/05/2016-31/08/2020

Cid MC, Pérez-Galán P. **Interacciones multi-celulares en la progresión de las enfermedades inflamatorias crónicas y síndromes linfoproliferativos: modelos 3D para investigar inmunoterapias dirigidas.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2017-88275-R
Duration: 01/01/2018-30/06/2021

Cid MC. **HEalth data LInkage for ClinicAL benefit.**
Sponsored by: European Commission. CE_H2020-MSCA-ITN-18
Duration: 01/01/2019-31/12/2022

Cid MC. **Effects of blocking IL-6 receptor with tocilizumab on ex-vivo cultured arteries from patients with giant-cell arteritis. Searching for predictors of response.**
Sponsored by: Vasculitis Foundation. INT_VASCFOUND_RG_18_01
Duration: 01/06/2019-30/07/2021

Espigol-Frigolé G. **Vasculitis de pequeño vaso rodeando a una arteria temporal preservada: significado clínico y búsqueda de biomarcadores de utilidad diagnóstica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00092
Duration: 01/01/2016-30/11/2020

Espigol-Frigolé G. **Perfil de expresión génica en linfocitos T CD4 + de pacientes con Granulomatosis Eosinofilica con Eosinofílica con Poliangeitis o Síndrome de Churg-Strauss.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00461
Duration: 01/01/2019-31/12/2021

1.4 Molecular and cellular bases of inflammation. Structural and biological mass spectrometry

LOCATION
IIBB-CSIC labs

KEYWORDS
1. **Inflammation**
2. **Fibrosis**
3. **Proteomics**
4. **Cell therapy**
5. **Exosomes**
6. **Wastewater epidemiology**

RELATED DISEASES
1. **Pancreatitis**
2. **Lung fibrosis**
3. **Pancreatic cancer**

GROUP INVOLVED IN
AGAUR_SGR17: 01228

Original publications

TOTAL	8
IF	36,12
Mean IF	4,52
Q1	63%
D1	13%
MA	38%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Daniel Closa (IIBB-CSIC)
T. 93 363 83 43
daniel.closa@iibb.csic.es

RESEARCHERS
Joaquín Abian (IIBB-CSIC)
Montserrat Carrascal (IIBB-CSIC)
Anna Serrano (IIBB-CSIC)

TECHNICIANS
Luis Ignacio Sánchez López (IIBB-CSIC)

PROBLEM

Many diseases involve alterations of the body's defence mechanisms and tissue-repair mechanisms. This leads to inflammatory modifications and fibrous tissue that sometimes becomes the disease's main problem.

This group researches inflammatory and fibrotic processes in respiratory and digestive diseases, such as idiopathic pulmonary fibrosis, pancreatic cancer, and acute pancreatitis.

APPROACH

The group studies intercellular signalling mechanisms based on the exchange of soluble molecules and on those transported by extracellular vesicles, the interaction cell/cell, the phenotypic changes associated with these diseases, and the alteration of different markers at the molecular level.

It also develops techniques for analysing biomolecules using mass spectrometry , including envirommental proteomics directed to the characterization of human protein biomarkers in sewage.

IMPACT

The group aims to discover innovative strategies that, by altering the communication between cells, will make it possible to develop new therapeutic applications for different diseases.

The group has already developed a new therapy for treating idiopathic pulmonary fibrosis, based on the transplantation of alveolar cells. It was also a pioneer in describing the role of exosomes (groups of proteins) in the progression of inflammation in different tissues during the course of pancreatitis.

Finally, it has published the first database of phosphorylation sites for the human lymphocyte, with over 2,000 modification sites.

RESEARCH LINES

- Molecular and cellular bases of inflammation and remodeling.

- -Structural, biological and environmental mass spectrometry.

PUBLICATIONS

Originals / I.F.: 36.123

1. Carrascal M; Abian J; Ginebreda A; Barceló D. **Discovery of large molecules as new biomarkers in wastewater using environmental proteomics and suitable polymer probes.** *Science Of The Total Environment.* 747(141145). I.F.: 6.551

2. Gella A, Prada-Dacasa P, Carrascal M, Urpi A, González-Torres M, Abian J, Sanz E, Quintana A . **Mitochondrial Proteome of Affected Glutamatergic Neurons in a Mouse Model of Leigh Syndrome.** *Frontiers In Cell And Developmental Biology.* 8(660). I.F.: 5.186

3. Alvarez-Palomo B; Sanchez-Lopez LI; Moodley Y; Edel MJ; Serrano-Mollar A. **Induced pluripotent stem cell-derived lung alveolar epithelial type II cells reduce damage in bleomycin-induced lung fibrosis.** Stem Cell Research & Therapy. 11(1):213. I.F.: 5.116

4. Izquierdo I, Barrachina MN, Hermida-Nogueira L, Casas V, Morán LA, Lacerenza S, Pinto-Llorente R, Eble JA, de Los Ríos V, Domínguez E, Loza MI, Casal JI, Carrascal M, Abián J, García A . **A Comprehensive Tyrosine Phosphoproteomic Analysis Reveals Novel Components of the Platelet CLEC-2 Signaling Cascade**. *Thrombosis And Haemostasis*. 120(2):262-276. I.F.: 4.385

5. Guillamat-Prats R; Camprubí-Rimblas M; Puig F; Herrero R; Tantinyà N; Serrano-Mollar A; Artigas A. **Alveolar Type II Cells or Mesenchymal Stem Cells: Comparison of Two Different Cell Therapies for the Treatment of Acute Lung Injury in Rats.** *Cells*. 9(8):1816. I.F.: 4.366

6. Hernandez, Raul Bonne; Carrascal, Montserrat; Abian, Joaquin; Michalke, Bernhard; Farina, Marcelo; Gonzalez, Yasmilde Rodriguez; Iyirhiaro, Grace O; Moteshareie, Houman; Burnside, Daniel; Golshani, Ashkan; Sunol, Cristina. **Manganese-induced neurotoxicity in cerebellar granule neurons due to perturbation of cell network pathways with potential implications for neurodegenerative disorders.** *Metallomics*. 12(11):1656-1678. I.F.: 3.796

7. Ferrero-Andrés A, Closa D, Roselló-Catafau J, Folch-Puy E . **Polyethylene Glycol 35 (PEG35) Modulates Exosomal Uptake and Function. Polymers.** 12(12):3044. I.F.: 3.426

8. García-Rayado G; Varela-Moreiras G; Lanas Á; Ferrández Á; Balza-Lareu N; Cervera JI; Bodenlle-Bello MP; Argüelles-Arias AM; Latorre P; Udaondo-Cascante MA; Soria-de-la-Cruz MJ; Lariño-Noia J; García-Figueiras R; Gil-García-Ollauri C; Ituarte-Uriarte R; Rosales-Alexander CL; Soriano J; Rodríguez-Peláez M; Mesa-Álvarez A; Oblitas E; Menso MM; Bertoletti F; Rodríguez-Prada JI; Guzmán-Suárez S; Closa D; de-Madaria E. **Dietary Fat Patterns and Outcomes in Acute Pancreatitis in Spain.** *Frontiers Of Medicine*. 7(126). I.F.: 3.297

GRANTS FOR RESEARCH IN PROGRESS

Abian J. **Plataforma de recursos biomoleculares PRB3 (Plataforma de proteomica, genotipado y lineas celulares).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PT17/0019/0008
Duration: 01/01/2018-31/12/2020

Closa D. **Importancia de los microRNAs transportados por exosomas en la progresión de la inflamación sistémica durante la pancreatitis aguda.**
Sponsored by: Asociación Española de Gastro Enterología (AEG). AEG_BECAGONMIÑO_01
Duration: 01/03/2017-

DOCTORAL THESES

Closa D, Gironella M. **MicroRNAs (miRNAs) circulantes en modelos de patología digestiva: cáncer colorrectal y pancreatitis aguda.**
PhD student: Maria Marcuello Fernandez

1.5 Immunogenetics and immunotherapy in autoinflammatory and immune responses

LOCATION
CELLEX building, floor 4B
CEK building, floor 2

KEYWORDS
1. **Autoinflammation**
2. **Immunogenetics**
3. **Inflammasome**
4. **Immunotherapy**
5. **Immunodeficiencies**
6. **Adoptive cell therapy**

RELATED DISEASES
1. **Immunodeficiencies**
2. **Autoinflammatory diseases**
3. **Cancer**
4. **Autoimmunity**
5. **Transplantation**

GROUP INVOLVED IN
AGAUR_SGR17: 01539

Original publications

TOTAL	8
IF	**47,70**
Mean IF	**5,96**
Q1	**63%**
D1	**38%**
MA	**25%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Manel Juan (HCB)
T. 93 227 54 63
mjuan@clinic.cat

RESEARCHERS
Juan Ignacio Aróstegui (HCB)
Daniel Benítez (HCB)
Jordi Yagüe (HCB)

ASSISTANT RESEARCHERS
Mireia Uribe Herranz (FCRB)

POST-DOCTORAL RESEARCHERS
Hugo Calerón (FCRB)
Anna Mensa (HCB)

PRE-DOCTORAL RESEARCHERS
Ariadna Bartolo (FCRB)
Sergi Betriu (FCRB)
Berta Marzal (IDIBAPS)

TECHNICIANS
Libertad Heredia (HCB)

COLLABORATORS
Cristina Bayó (FCRB)
Raquel Cabezón (HCB)
Natalia Egri (HCB)
Marta Español (HCB)
Europa Azucena González (HCB)
Eva González Roca (HCB)
Iñaki Ortiz de Landaruzi (HCB)
Eduard Palou (HCB)

PROBLEM

Genes define the immune system as any biological cell system and, consequently, most human diseases. Therefore, immunogenetics is the basis for different diagnostic tools and treatments that are valid for many diseases, from autoinflammatory disorders to cancer.

The group uses immunogenetics to better understand and diagnose immune-mediated diseases, and particularly to generate its own cellular drugs in order to treat many of these diseases, starting with cancer using dendritic cells, TILs and CAR T cells, and in addition, to detect and obtain purposeful T-cells that can act as a measure of immune status and potential therapy against infections such as SARS-CoV2.

APPROACH

The group's research involves defining the molecular bases of certain diseases (especially problems at the genetic level), proposing a better diagnosis, and developing cellular immunotherapy strategies (the use of cells as treatment) in order to solve the abnormal functioning of patients' immune systems.

In infectious diseases, the focus is on the therapeutic options of the cellular response, coming to have tools to manipulate samples of individuals to detect and develop anti-pathogen and suppressor T-cells as a plausible therapy, now in the field of SARS-CoV2 infection.

In the case of cancer, the immunotherapy developed by the group aims to restore the patients' antitumor response, which makes it possible to control and even cure certain tumours. Some of our proposals use gene therapy to improve the function of these cancer cell therapies, being CAR T-cells the main example.

IMPACT

After thousands of patients with genetic diseases have been diagnosed and hundreds treated with cellular immunotherapy, the aim of the group is to provide the hospital with therapeutic tools for patients who have no other options.

Specifically, the group develops and presents clinical trials based on cell therapy to the Spanish Agency for Medicine and Medical Devices (AEMPS) for authorizing the use of these cellular drugs in the treatment of patients in whom their efficacy has been suggested or shown.

RESEARCH LINES

- Cellular and genetic immunotherapy for the treatment of cancer and other immune-mediated diseases.

- Genetic and epigenetic diagnosis of autoinflammatory disease.

- Molecular determination of the T-cell specific immune response.

PUBLICATIONS

Originals / I.F.: 47.7

1. Zanetti, Samanta Romina; Romecin, Paola Alejandra; Vinyoles, Meritxell; Juan, Manel; Fuster, Jose Luis; Camos, Mireia; Querol, Sergi; Delgado, Mario; Menendez, Pablo. **Bone marrow MSC from pediatric patients with B-ALL highly immunosuppress T-cell responses but do not compromise CD19-CAR T-cell activity.** *Journal For Immunotherapy Of Cancer.* 8(2):e001419. I.F.: 10.252

2. Giménez N, Schulz R, Higashi M, Aymerich M, Villamor N, Delgado J, Juan M, López-Guerra M, Campo E, Rosich L, Seiffert M, Colomer D. **Targeting IRAK4 disrupts inflammatory pathways and delays tumor development in chronic lymphocytic leukemia.** *Leukemia.* 34(1):100-114. I.F.: 8.665

3. Deyà-Martínez A, Gordón Y, Molina-Anguita C, Vlagea A, Piquer M, Juan M, Esteve-Solé A, Antón J, Madrid Á, García-García A, Plaza AM, Armangue T, Alsina L. **Single-cycle rituximab-induced immunologic changes in children: Enhanced in neuroimmunologic disease?** *Neurology-Neuroimmunology & Neuroinflammation.* 7(4):e724. I.F.: 7.724

4. Martín-Nalda A; Fortuny C; Rey L; Bunney TD; Alsina L; Esteve-Solé A; Bull D; Anton MC; Basagaña M; Casals F; Deyá A; García-Prat M; Gimeno R; Juan M; Martinez-Banaclocha H; Martinez-Garcia JJ; Mensa-Vilaró A; Rabionet R; Martin-Begue N; Rudilla F; Yagüe J; Estivill X; García-Patos V; Pujol RM; Soler-Palacín P; Katan M; Pelegrín P; Colobran R; Vicente A; Arostegui JI. **Severe Autoinflammatory Manifestations and Antibody Deficiency Due to Novel Hypermorphic PLCG2 Mutations.** *Journal Of Clinical Immunology.* 40(7):987-1000. I.F.: 6.780

5. Castella M; Caballero-Baños M; Ortiz-Maldonado V; González-Navarro EA; Suñé G; Antoñana-Vidósola A; Boronat A; Marzal B; Millán L; Martín-Antonio B; Cid J; Lozano M; García E; Tabera J; Trias E; Perpiña U; Canals JM; Baumann T; Benítez-Ribas D; Campo E; Yagüe J; Urbano-Ispizua Á; Rives S; Delgado J; Juan M. **Point-of-care CAR T-cell production (ARI-0001) using a closed semi-automatic bioreactor: Experience from an academic phase i clinical trial.** *Frontiers In Immunology.* 11(482). I.F.: 5.085

6. Marín-Aguilera M, Jiménez N, Reig Ò, Montalbo R, Verma AK, Castellano G, Mengual L, Victoria I, Pereira MV, Milà-Guasch M, García-Recio S, Benítez-Ribas D, Cabezón R, González A, Juan M, Prat A, Mellado B . **Androgen Receptor and Its Splicing Variant 7 Expression in Peripheral Blood Mononuclear Cells and in Circulating Tumor Cells in Metastatic Castration-Resistant Prostate Cancer.** *Cells.* 9(1):203. I.F.: 4.366

7. Merino A, Vlagea A, Molina A, Egri N, Laguna J, Barrera K, Boldú L, Acevedo A, Díaz-Pavón M, Sibina F, Bascón F, Sibila O, Juan M, Rodellar J . **Atypical lymphoid cells circulating in blood in COVID-19 infection: morphology, immunophenotype and prognosis value.** *Journal of Clinical Pathology.* I.F.: 2.460

8. Batlle-Masó L; Mensa-Vilaró A; Solís-Moruno M; Marquès-Bonet T; Arostegui JI; Casals F. **Genetic diagnosis of autoinflammatory disease patients using clinical exome sequencing.** *European Journal of Medical Genetics.* 63(5):103920. I.F.: 2.368

Review / I.F.: 13.758

1. Ortiz de Landazuri I; Egri N; Muñoz-Sánchez G; Ortiz-Maldonado V; Bolaño V; Guijarro C; Pascal M; Juan M. **Manufacturing and Management of CAR T-Cell Therapy in "COVID-19's Time": Central Versus Point of Care Proposals.** *Frontiers in Immunology.* 11:573179. I.F.: 5.085

2. Egri, Natalia; Ortiz de Landazuri, Inaki; San Bartolome, Clara; Ramon Ortega, J.; Espanol-Rego, Marta; Juan, Manel. **CART manufacturing process and reasons for academy-pharma collaboration.** *Immunology Letters.* 217:39-48. I.F.: 3.276

3. Rodríguez Pérez ; Campillo-Davo D; Van Tendeloo VFI; Benítez-Ribas D. **Cellular immunotherapy: a clinical state-of-the-art of a new paradigm for cancer treatment.** *Clinical & Translational Oncology.* 22(11):1923-1937. I.F.: 2.737

4. Pascual T, Cejalvo JM, Oliveira M, Vidal M, Vega E, Ganau S, Julve A, Zamora E, Miranda I, Delgado A, Bermejo B, la Cruz-Merino L, Juan M, Ferrero-Cafiero JM, Canes J, Gonzalez X, Villagrasa P, Prat A . **SOLTI-1503 PROMETEO TRIAL: combination of talimogene laherparepvec with atezolizumab in early breast cancer.** *Future Oncology.* 16(24):1801-1813. I.F.: 2.660

Letters / I.F.: 5.248

1. Vergara-de-la-Campa, L; Gatica-Ortega, M E; Pastor-Nieto, M A; Molina-Figueras, E; Perez-Mesonero, R; Luna-Bastante, L; Sanchez-Matas, I; Checa-Diaz, P; Arostegui, J I; Gimenez-Arnau, A. **Vibratory urticaria-angioedema: further insights into the response patterns to vortex provocation test**. *Journal Of The European Academy Of Dermatology And Venereology.* 34(11):e699-e701. I.F.: 5.248

Editorial / I.F.: 1.313

1. Juan, Manel; Rives, Susana. **CAR-T immunotherapy in pediatric hemato-oncology ... present and future.** *Anales de Pediatría.* 93(1):1-3. I.F.: 1.313

Case Reports / I.F.: 7.724

1. Bodro M, Compta Y, Llansó L, Esteller D, Doncel-Moriano A, Mesa A, Rodríguez A, Sarto J, Martínez-Hernandez E, Vlagea A, Egri N, Filella X, Morales-Ruiz M, Yagüe J, Soriano Á, Graus F, García F, "Hospital Clínic Infecto-COVID-19" and "Hospital Clínic Neuro-COVID-19" groups. **Increased CSF levels of IL-1β, IL-6, and ACE in SARS-CoV-2-associated encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(5):e821. I.F.: 7.724

Clinical Guidelines / I.F.: 9.228

1. Cordero E; Goycochea-Valdivia W; Mendez-Echevarria A; Allende LM; Alsina L; Bravo García-Morato M; Gil-Herrera J; Gudiol C; Len-Abad O; López-Medrano F; Moreno-Pérez D; Muñoz P; Olbrich P; Sánchez-Ramón S; Soler-Palacín P; Aguilera

Cros C; Arostegui JI; Badell Serra I; Carbone J; Fortún J; Gonzalez-Granado LI; López-Granados E; Lucena JM; Parody R; Ramakers J; Regueiro JR; Rivière JG; Roca-Oporto C; Rodríguez Pena R; Santos-Pérez JL; Rodríguez-Gallego C; Neth O. **Executive Summary of the Consensus Document on the Diagnosis and Management of Patients with Primary Immunodeficiencies.** *Journal Of Allergy And Clinical Immunology-In Practice.* 8(10):3342-3347. I.F.: 7.574

2. Cordero E; Goycochea-Valdivia W; Mendez-Echevarria A; Allende LM; Alsina L; Bravo García-Morato M; Gil-Herrera J; Gudiol C; Len-Abad O; López-Medrano F; Moreno-Pérez D; Muñoz P; Olbrich P; Sánchez-Ramón S; Soler-Palacín P; Aguilera Cros C; Arostegui JI; Badell Serra I; Carbone J; Fortún J; Gonzalez-Granado LI; López-Granados E; Lucena JM; Parody R; Ramakers J; Regueiro JR; Rivière JG; Roca-Oporto C; Rodríguez Pena R; Santos-Pérez JL; Rodríguez-Gallego C; Neth O. **Executive Summary of the Consensus Document on the Diagnosis and Management of Patients with Primary Immunodeficiencies.** *Enfermedades Infecciosas y Microbiología Clinica.* 38(9):438-443. I.F.: 1.654

GRANTS FOR RESEARCH IN PROGRESS

Aróstegui J. **Identificación de nuevos mecanismos moleculares en enfermedades autoinflamatorias.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-096824-B-C21
Duration: 01/01/2019-31/12/2021

Benitez D. **Inmunoterapia de cáncer de colon mediante la combinación de anticuerpos bloqueantes de la vía inhibidora PD-1-PD-L1 y células dendríticas autólogas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00732
Duration: 01/01/2018-31/12/2021

Juan M. **Immunoterapia y terapia génica del cáncer.**
Sponsored by: Research la Caixa Foundation. 3922-19
Duration: 01/01/2018-31/12/2022

Juan M. **Cellular immunological response to SARS-CoV2 decisions on the immunization of t-cells and their use in potential therapy.**
Sponsored by: CELLNEX. 5234_20
Duration: 01/06/2020-01/06/2022

Juan M. **Desarrollo de mejoras de la eficacia en nuestra propuesta académica de CART19 propio para síndromes linfoproliferativos B: modificaciones imprescindibles para mejorar resultados.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00775
Duration: 01/01/2019-31/12/2021

Juan M. **Cationic Gold nanoparticles mediated mRNA cytoplasmatic-targeted delivery for production of CAR-T lymphocytes for Chronic Lymphoid Leukemia immunotherapy.**
Sponsored by: European Commission and Instituto de Salud Carlos III (ISCIII). CE_ERA-Net_Nanomed18 and AC18/00072
Duration:01/01/2019-31/12/2021

Mensa A. **Diagnóstico y seguimiento de las enfermedades autoinflamatorias no filiadas mediante la aplicación de técnicas transcriptómicas y genómicas avanzadas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01567
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Juan M. **Reevaluando el papel de los linfocitos T CD4+: de la alorespuesta a la respuesta inmune anti-leucemia.**
PhD student: Europa Azucena González Navarro

1.6 Immune receptors of the innate and adaptive system

LOCATION
CEK building, floor 1

KEYWORDS
1. **Innate and adaptive immune response**
2. **Immune receptor-lig and interactions**
3. **Immunomodulation and immunotherapy**
4. **Host-pathogen interaction**
5. **Immunevasion**

RELATED DISEASES
1. **Systemic lupus erythematosus**
2. **Sjögren's syndrome**
3. **Chronic lymphocytic leukemia**
4. **Sepsis**
5. **Solid tumor cancer**
6. **Cytomegalovirus infection**

GROUP INVOLVED IN
AGAUR_SGR17:1582
Infect-ERA

Original publications

TOTAL	10
IF	112,08
Mean IF	11,21
Q1	80%
D1	60%
MA	40%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Francisco Lozano (HCB-UB)
T. 93 227 42 17
flozano@clinic.cat

RESEARCHERS
Ana Angulo (UB)
Pablo Engel (UB)
Carles Serra (HCB-UB)

POST-DOCTORAL RESEARCHERS
María Velasco (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Sergi Casadó (IDIBAPS)
Cristina Català (IDIBAPS)
Rebeca Gutiérrez Cózar (UB)
Pablo Hernández Luis (UB)
Alejandra Elizabeth Leyton (UB)
Francesc Poblador (UB)
Joan Puñet (UB)
Manuel Saéz (UB)

PROBLEM

The malfunctioning of the immune system is a factor in a wide number of incurable diseases such as autoimmune disorders, cancer, and certain serious infection processes, which pose a huge challenge for public health.

The development of novel immunotherapeutic strategies to treat these diseases requires a precise knowledge of the immune receptors that regulate innate and adaptive immune responses.

APPROACH

We aim to identify and understand the function of the molecules that regulate immune responses in health and disease.

We particularly focus on the molecular interactions involved in the intercommunication and coordination of immune cells during physiological and pathological processes.

This approach will allow the development of new approaches and biological tools (recombinant proteins and monoclonal antibodies) for the treatment of immune-mediated disorders (e.g., systemic autoimmune and infectious diseases, graft rejection, allergy, or cancer).

IMPACT

We aim to develop novel therapeutic strategies, disseminate our results in high-impact international journals and transfer the knowledge generated to biomedical companies.

Over the last 5 years, we have published over 50 research papers, created a new spin-off company, and filed 2 patents.

RESEARCH LINES

- Study of citomegalovirus (CMV) modulation of the immune response and viral immune evasion strategies.

- Study of the structure and function of scavenger-like receptors and their role as Inmunomodulators in infection, autoimmunity and cancer.

- Study of the structure and function of the slam leukocyte molecules and their role in autoimmunity and cancer.

PUBLICATIONS

Originals / I.F.: 112.078

1. Bosch M, Sánchez-Álvarez M, Fajardo A, Kapetanovic R, Steiner B, Dutra F, Moreira L, López JA, Campo R, Marí M, Morales-Paytuví F, Tort O, Gubern A, Templin RM, Curson JEB, Martel N, Català C, Lozano F, Tebar F, Enrich C, Vázquez J, Del Pozo MA, Sweet MJ, Bozza PT, Gross SP, Parton RG, Pol A. **Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense.** *Science*. 370(6514):eaay8085. I.F.: 41.846

2. Pose E, Coll M, Martínez-Sánchez C, Zeng Z, Surewaard BGJ, Català C, Velasco M, Lozano J, Ariño S, Fuster D, Niñerola-Bazán A, Graupera I, Muñoz É, Lozano F, Sancho-Bru P, Kubes P, Ginès P. **PD-L1 is overexpressed in liver macrophages in chronic liver diseases and its blockade improves the antibacterial activity against infections**. *Hepatology*. I.F.: 14.679

3. Huerga Encabo H, Traveset L, Argilaguet J, Angulo A, Nistal-Villán E, Jaiswal R, Escalante CR, Gekas C, Meyerhans A, Aramburu J, López-Rodríguez C . **The transcription factor NFAT5 limits infection-induced type I interferon responses.** *Journal Of Experimental Medicine*. 217(3):jem.20190449. I.F.: 11.743

4. Simões IT; Aranda F; Casadó-Llombart S; Velasco-de Andrés M; Català C; Álvarez P; Consuegra-Fernández M; Orta-Mascaró M; Merino R; Merino J; Alberola-Ila J; González-Aseguinolaza G; Carreras E; Martínez V; Lozano F. **Multifaceted effects of soluble human CD6 in experimental cancer models.** *Journal for Immunotherapy of Cancer*. 8(1):e000172. I.F.: 10.252

5. Velasco-Hernandez T, Zanetti SR, Roca-Ho H, Gutierrez-Aguera F, Petazzi P, Sánchez-Martínez D, Molina O, Baroni ML, Fuster JL, Ballerini P, Bueno C, Fernandez-Fuentes N, Engel P, Menendez P . **Efficient elimination of primary B-ALL cells in vitro and in vivo using a novel 4-1BB-based CAR targeting a membrane-distal CD22 epitope.** *Journal for Immunotherapy of Cancer*. 8(2):e000896. I.F.: 10.252

6. Strazic Geljic I; Kucan Brlic P; Angulo G; Brizic I; Lisnic B; Jenus T; Juranic Lisnic V; Pietri G; Engel P; Kaynan N; Zeleznjak J; Schu P; Mandelboim O; Krmpotic A; Angulo A; Jonjic S; Lenac Rovis T. **Cytomegalovirus protein m154 perturbs the adaptor protein-1 compartment mediating broad-spectrum immune evasion**. *eLife*. 9(e50803). I.F.: 7.080

7. Miles S, Velasco-de-Andrés M, Lozano F, Mourglia-Ettlin G. **Interactome analysis of CD5 and CD6 ectodomains with tegumental antigens from the helminth parasite Echinococcus granulosus sensu lato.** *International Journal of Biological Macromolecules*. 164:3718. I.F.: 5.162

8. Moreno-Manuel A, Jantus-Lewintre E, Simões I, Aranda F, Calabuig-Fariñas S, Carreras E, Zúñiga S, Saenger Y, Rosell R, Camps C, Lozano F, Sirera R. **CD5 and CD6 as immunoregulatory biomarkers in non-small cell lung cancer.** *Translational Lung Cancer Research*. 9(4):1074-1083.I.F.: 5.132

9. Martínez-Vicente P, Farré D, Engel P, Angulo A. **Divergent Traits and Ligand-Binding Properties of the Cytomegalovirus CD48 Gene Family.** *Viruses-Basel*. 12(8):813. I.F.: 3.816

10. Ojeda R; Arias-Guillén M; Gómez M; Vera M; Fontseré N; Rodas L; Filella X; Reverter JC; Lozano F; Villamor N; Maduell F. **Study of Biocompatibility of Membranes in Online Hemodiafiltration.** *Blood Purification*. 49(4):400-408. I.F.: 2.116

Review / I.F.: 4.366

1. Velasco-de Andrés M, Casadó-Llombart S, Català C, Leyton-Pereira A, Lozano F, Aranda F. **Soluble CD5 and CD6: Lymphocytic Class I Scavenger Receptors as Immunotherapeutic Agents.** *Cells*. 9(12):2589 I.F.: 4.366

GRANTS FOR RESEARCH IN PROGRESS

Angulo A. **Manipulación de inmunoreceptores de la superficie celular por citomegalovirus.**
Sponsored by: Ministerio de Economia y Competitividad. MINECO_-SAF2017-87688-R
Duration: 01/01/2018-31/12/2020

Angulo A, Engel P. **CoViproteHCt.**
Sponsored by: European Commission. HORIZON 2020_600238-EIT
Duration: 01/05/2020-31/12/2020

Engel P. **Repertorio, immunopatología y terapia dirigida a los linfocitos B en la enfermedad autoinmune Síndrome de Sjögren.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-094440-B-I00.
Duration: 01/01/2019-31/12/2021

Lozano F. **Immunoreceptores del Sistema Inmunitario Innato y Adaptativo.**
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR). 2017/SGR/1582.
Duration: 01/01/2017-31/12/2020

Lozano F. **Aproximaciones experimentales al estudio de las propiedades inmunomoduladores de receptores linfocitarios tipo scavenger en patología inmunomediada.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_-SAF2016-80535-R
Duration: 30/12/2016-31/12/2020

Lozano F. **Receptores linfocitarios scavenger como dianas de inmunomodulación en respuesta a agresión microbiana.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-106658RB-I00
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Lozano F. **CD5 as immunomodulatory agent in experimental models of fungal infection.**
PhD student: María Velasco de Andrés

1.7 AIDS and HIV infection

LOCATION
CELLEX building, floor 4A

KEYWORDS
1. **HIV infection**
2. **AIDS**
3. **Antiretroviral treatment**
4. **PrEP**
5. **PEP**
6. **Co-infection**
7. **Immunopathogenesis**
8. **Vaccines**

RELATED DISEASES
1. **VHC**
2. **VPH**
3. **STD/STI**
4. **Chemsex**

GROUP INVOLVED IN
AGAUR_SGR17: 00615
ERANET
RIS

Original publications

TOTAL	36
IF	**185,27**
Mean IF	**5,15**
Q1	**72%**
D1	**36%**
MA	**36%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep Mallolas (HCB)
T. 93 227 54 00 (Ext.: 3312)
mallolas@clinic.cat

RESEARCHERS
José Alcamí (FCRB)
José Luis Blanco (HCB)
Felipe García Alcaide (HCB)
Montserrat Laguno (HCB)
Esteban Martinez Chamorro (HCB)
Josep Maria Miró (HCB)
Montserrat Plana (IDIBAPS)

ASSISTANT RESEARCHERS
Juan Carlos Enrique Ambrosioni (HCB)
Núria Climent (IDIBAPS)
María Martínez Rebollar (HCB)
Maria Sonsoles Sánchez Palomino (FCRB)

POST-DOCTORAL RESEARCHERS
Fran Diez Fuertes (FCRB)
Maria Florencia Etcheverry (IDIBAPS-FCRB)
Ana González Cordón (FCRB)
Lorna Anabel Leal (IDIBAPS)
Jhon Fredy Rojas (FCRB)
Berta Torres (FCRB)
Lorena Usero (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Iván Chivite (HCB)
Lorena De La Mora (HCB)
Csaba Fehér (IDIBAPS)
Alexy Junior Inciarte (IDIBAPS)
Roque Pastor Ibáñez (IDIBAPS)
Ainoa Ugarte (HCB)

TECHNICIANS
Pilar Callau (FCRB)
Elisa De Lazzari (FCRB)
Esther Fagúndez (IDIBAPS)
Tania González Jiménez (FCRB)
Carmen Hurtado (FCRB)
M. José Maleno (FCRB)
Laia Miralles (IDIBAPS)
Cristina Rovira (IDIBAPS)

NURSING STAFF
Emma Fernández González (HCB)
Margarita Robau (HCB)
Ana Rodríguez Serna (HCB)

ADMINISTRATIVE STAFF
Raquel Aguiló (HCB)
Laura Novell (FCRB)
Mª Antònia Rodríguez Jové (HCB)

PROBLEM

HIV infection and AIDS are among the most important avoidable causes of death in the world. In Spain, there are some 140,000 infected individuals, of whom 100,000 are receiving antiretroviral treatment. Every year, some 3,000 new infections are diagnosed, 800 of which are in Catalonia.

To stop this epidemic, it is necessary to address our efforts at all aspects of the infection: clinical (ageing of those infected and new comorbidities), diagnosis (early identification), therapeutics (search for new treatments), prevention (PrEP) and research (studies of the immunopathology of infection and development of vaccines). Only by optimising all of this research can there be any real control of the disease.

APPROACH

The HIV-AIDS unit serves 6.000 people infected with HIV, most of whom receive antiretroviral treatment. The group also conducts a wide range of research activities, divided into two parts: firstly, clinical research focusing on antiretroviral efficacy and tolerance, resistance mechanisms, and opportunistic infections and coinfection. Secondly, it performs basic research in Retrovirology and Viral Immunopathology, which includes the development of vaccines.

IMPACT

Our research has played a key role in the development of strategies for the treatment and prevention of HIV and opportunistic infections and coinfection, both nationally and internationally. The impact of our research activity can be quantified through over 600 international publications in peer-review

journals with an impact factor of over 4,000, approximately 20,000 citations and over 50 manuscripts cited more than 50 times.

RESEARCH LINES

- Basic and translational research.
- Clinical and diagnostic aspects.
- Epidemiological research and public health.
- Therapeutic aspects.

PUBLICATIONS

Originals / 185.266

1. Blanco JL; Ambrosioni J; Garcia F; Martínez E; Soriano A; Mallolas J; Miro JM. **COVID-19 in patients with HIV: clinical case series**. *Lancet Hiv*. 7(5):e314-e316. I.F.: 14.813

2. Pothlichet J; Rose T; Bugault F; Jeammet L; Meola A; Haouz A; Saul F; Geny D; Alcami J; Ruiz-Mateos E; Teyton L; Lambeau G; Thèze J. **PLA2G1B is involved in CD4 anergy and CD4 lymphopenia in HIV-infected patients.** *Journal Of Clinical Investigation*. 130(6):2872-2887. I.F.: 11.864

3. Garcia-Vidal C, Moreno-García E, Hernández-Meneses M, Puerta-Alcalde P, Chumbita M, Garcia-Pouton N, Linares L, Rico V, Cardozo C, Martínez JA, García F, Mensa J, Castro P, Nicolás JM, Muñoz J, Vidal D, Soriano A, COVID19-Researchers. **Personalized therapy approach for hospitalized patients with COVID-19.** *Clinical Infectious Diseases*. I.F.: 8.313

4. Mocroft A, Lundgren J, Gerstoft J, Rasmussen LD, Bhagani S, Aho I, Pradier C, Bogner JR, Mussini C, Uberti Foppa C, Maltez F, Laguno M, Wandeler G, Falconer K, Trofimova T, Borodulina E, Jevtovic D, Bakowska E, Kase K, Kyselyova G, Haubrich R, Rockstroh JK, Peters L, EuroSIDA Study. **Clinical Outcomes in Persons Coinfected With Human Immunodeficiency Virus and Hepatitis C Virus: Impact of Hepatitis C Virus Treatment.** *Clinical Infectious Diseases*. 70(10):2131-2140. I.F.: 8.313

5. Atkinson A, Zwahlen M, Barger D, d'Arminio Monforte A, De Wit S, Ghosn J, Girardi E, Svedhem-Johansson V, Morlat P, Mussini C, Noguera-Julian A, Stephan C, Touloumi G, Kirk O, Mocroft A, Reiss P, Miro JM, Carpenter JR, Furrer H, Opportunistic Infections Project Working Group of the Collaboration of Observational HIV Epidemiological Research Europe (COHERE) in EuroCoord. **Withholding primary PcP prophylaxis in virologically suppressed HIV patients: An emulation of a pragmatic trial in COHERE.** *Clinical Infectious Diseases*. I.F.: 8.313

6. Díez-Fuertes F; De La Torre-Tarazona H; Calonge E; Pernas M; Bermejo M; García-Pérez J; Álvarez A; Capa L; García-García F; Saumoy M; Riera M; Boland-Auge A; López-Galíndez C; Lathrop M; Dopazo J; Sakuntabhai A; Alcamí J. **Association of a single nucleotide polymorphism in the ubxn6 gene with long-term non-progression phenotype in HIV-positive individuals.** *Clinical Microbiology And Infection*. 26(1):107-114. I.F.: 7.117

7. Gálvez C; Urrea V; Dalmau J; Jimenez M; Clotet B; Monceaux V; Huot N; Leal L; González-Soler V; González-Cao M; Müller-Trutwin M; Sáez-Cirión A; García F; Blanco J; Martinez-Picado J; Salgado M. **Extremely low viral reservoir in treated chronically HIV-1-infected individuals.** *Ebiomedicine*. 57(102830). I.F.: 5.736

8. Yeregui E; Viladés C; Domingo P; Ceausu A; Pacheco YM; Veloso S; Inciarte A; Vidal-González J; Peraire M; Perpiñán C; Falcó V; Masip J; Alba V; Vargas M; Martí A; Reverté L; Mallolas J; Vidal F; Peraire J; Rull A. **High circulating SDF-1and MCP-1 levels and genetic variations in CXCL12, CCL2 and CCR5: Prognostic signature of immune recovery status in treated HIV-positive patients.** *Ebiomedicine*. 62:103077. I.F.: 5.736

9. Dominguez-Molina B, Tarancon-Diez L, Milanés-Guisado Y, Genebat M, Resino S, Rodriguez C, Gonzalez-García J, Rallón N, Pernas M, Casado C, Lopez-Galíndez C, León A, Benito JM, García F, Del Romero J, Viciana P, Lopez-Cortes LF, Leal M, Ruiz-Mateos E, ECRIS integrated in the Spanish AIDS Research Network. **Persistent HIV-controllers are more prone to spontaneously clear HCV: a retrospective cohort study.** *Journal of the International AIDS Society*. 23(9):e25607. I.F.: 5.553

10. Martinez E, Negredo E, Knobel H, Ocampo A, Sanz J, Garcia-Fraile L, Martin-Carbonero L, Lozano F, Gonzalez-Domenech CM, Gutierrez M, Montero M, Boix V, Payeras A, Torralba M, Gonzalez-Cordon A, Moreno A, Alejos B, Perez-Elias MJ, GeSIDA 9316 CODAR Study Group. **Factors associated with the number of drugs in darunavir/cobicistat regimens.** *Journal Of Antimicrobial Chemotherapy*. 75(1):208-214. I.F.: 5.439

11. Gonzalez-Cordon A, Assoumou L, Camafort M, Domenech M, Guaraldi G, Domingo P, Rusconi S, Raffi F, Katlama C, Masia M, Bernardino JI, Saumoy M, Pozniak A, Gatell JM, Martinez E, NEAT022 Study Group. **Switching from boosted PIs to dolutegravir in HIV-infected patients with high cardiovascular risk: 48 week effects on subclinical cardiovascular disease.** *Journal Of Antimicrobial Chemotherapy*. 75(11):3334-3343. I.F.: 5.439

12. Navarro J, González-Cordón A, Casado JL, Bernardino JI, Domingo P, Portilla J, Llibre JM, Colomer J, Rial-Crestelo D, Vizcarra P, Curran A, Martínez E, Ribera E. **Effectiveness of boosted darunavir plus rilpivirine in patients with long-lasting HIV-1 infection: DARIL study.** *Journal Of Antimicrobial Chemotherapy*. 75(7):1955-1960. I.F.: 5.439

13. Izquierdo-Domínguez A, Rojas-Lechuga MJ, Chiesa-Estomba C, Calvo-Henríquez C, Ninchritz-Becerra E, Soriano-Reixach M, Poletti-Serafini D, Villarreal IM, Maza-Solano JM, Moreno-Luna R, Villarroel PP, Mateos-Serrano B, Agudelo D, Valcarcel F, Del Cuvillo A, Santamaría A, Mariño-Sánchez F, Aguilar J, Vergés P, Inciarte A, Soriano A, Mullol J, Alobid I. **Smell and taste dysfunctions in COVID-19 are associated with younger age in ambulatory settings - a multicenter cross-sectional study.** *Journal Of Investigational Allergology And Clinical Immunology*. 30(5):346-357. I.F.: 5.172

14. Rohner E; Bütikofer L; Schmidlin K; Sengayi M; Maskew M; Giddy J; Taghavi K; Moore RD; Goedert JJ; Gill MJ; Silverberg MJ; D'Souza G; Patel P; Castilho JL; Ross J; Sohn A; Bani-Sadr F; Taylor N; Paparizos V; Bonnet F; Verbon A; Vehreschild JJ; Post FA; Sabin C; Mocroft A; Dronda F; Obel N; Grabar S; Spagnuolo V; Quiros-Roldan E; Mussini C; Miro JM; Meyer L; Hasse B; Konopnicki D; Roca B; Barger D; Clifford GM; Franceschi S; Egger M; Rohner E. **Cervical cancer risk in women living with HIV across four continents: A multicohort study.** *International Journal Of Cancer*. 146(3):601-609. I.F.: 5.145

15. Sanchez J, Gonçalves E, Llano A, Gonzáles P, Fernández-Maldonado M, Vogt A, Soria A, Perez S, Cedeño S, Fernández MA,

Nourikyan J, de Bernard S, Ganoza C, Pedruzzi E, Bonduelle O, Mothe B, Gòmez CE, Esteban M, Garcia F, Lama JR, Brander C, Combadiere B. **Immune Profiles Identification by Vaccinomics After MVA Immunization in Randomized Clinical Study.** *Frontiers In Immunology.* 11(586124). I.F.: 5.085

16. Mothe B, Rosás-Umbert M, Coll P, Manzardo C, Puertas MC, Morón-López S, Llano A, Miranda C, Cedeño S, López M, Alarcón-Soto Y, Melis GG, Langohr K, Barriocanal AM, Toro J, Ruiz I, Rovira C, Carrillo A, Meulbroek M, Crook A, Wee EG, Miró JM, Clotet B, Valle M, Martinez-Picado J, Hanke T, Brander C, Moltó J, BCN02 Study Investigators. **HIVconsv Vaccines and Romidepsin in Early-Treated HIV-1-Infected Individuals: Safety, Immunogenicity and Effect on the Viral Reservoir (Study BCN02).** *Frontiers In Immunology.* 11(823). I.F.: 5.085

17. Fichtenbaum, Carl J; Ribaudo, Heather J; Leon-Cruz, Jorge; Overton, Edgar T; Zanni, Markella, V; Malvestutto, Carlos D; Aberg, Judith A; Kileel, Emma M; Fitch, Kathleen, V; Van Schalkwyk, Marije; Kumarasamy, Nagalingeswaran; Martinez, Esteban; Santos, Breno Riegel; Joseph, Yvetot; Lo, Janet; Siminski, Sue; Melbourne, Kathleen; Sponseller, Craig A; Desvigne-Nickens, Patrice; Bloomfield, Gerald S; Currier, Judith S; Hoffmann, Udo; Douglas, Pamela S; Grinspoon, Steven K; REPRIEVE Investigators. **Patterns of Antiretroviral Therapy Use and Immunologic Profiles at Enrollment in the REPRIEVE Trial**. *Journal Of Infectious Diseases.* 222(Suppl 1):S8-S19. I.F.: 5.022

18. Posas-Umbert, Miriam; Ruiz-Riol, Marta; Fernandez, Marco A; Marszalek, Marta; Coll, Pep; Manzardo, Christian; Cedeno, Samandhy; Miro, Jose M; Clotet, Bonaventura; Hanke, Tomas; Molto, Jose; Mothe, Beatriz; Brander, Christian;BCN02 Study Grp. **In vivo Effects of Romidepsin on T-Cell Activation, Apoptosis and Function in the BCN02 HIV-1 Kick&Kill Clinical Trial.** *Frontiers In Immunology.* 11(418). I.F.: 5.085

19. Vigón L, Rodríguez-Mora S, Luna A, Sandonís V, Mateos E, Bautista G, Steegmann JL, Climent N, Plana M, Pérez-Romero P, de Ory F, Alcamí J, García-Gutierrez V, Planelles V, López-Huertas MR, Coiras M. **Cytotoxic cell populations developed during treatment with tyrosine kinase inhibitors protect autologous CD4+ T cells from HIV-1 infection.** *Biochemical Pharmacology.* 182:114203. I.F.: 4.960

20. De la Torre-Tarazona HE; Jiménez R; Bueno P; Camarero S; Román L; Fernández-García JL; Beltrán M; Nothias LF; Cachet X; Paolini J; Litaudon M; Alcami J; Bedoya LM. **4-Deoxyphorbol inhibits HIV-1 infection in synergism with antiretroviral drugs and reactivates viral reservoirs through PKC/MEK activation synergizing with vorinostat.** *Biochemical Pharmacology.* 177(113937). I.F.: 4.960

21. Salgado M; Martinez-Picado J; Gálvez C; Rodríguez-Mora S; Rivaya B; Urrea V; Mateos E; Alcamí J; Coiras M. **Dasatinib protects humanized mice from acute HIV-1 infection.** *Biochemical Pharmacology.* 174:113625. I.F.: 4.960

22. Ambrosioni J, Farrera J, de Lazzari E, Nicolás D, Manzardo C, Hernández-Meneses MM, Mosquera MM, Ligero C, Marcos MA, Sánchez-Palomino S, Fernández E, Plana M, Miró JM, Hospital Clinic Acute/Recent HIV Study Group. **Immunological and virological efficacy of different antiretroviral regimens initiated during acute/recent HIV infection.** *Aids.* 34(15):2269-2274. I.F.: 4.534

23. Inciarte A, Gonzalez-Cordon A, Rojas J, Torres B, de Lazzari E, de la Mora L, Martinez-Rebollar M, Laguno M, Callau P, Gonzalez-Navarro A, Leal L, Garcia F, Mallolas J, Mosquera M, Marcos MA, Ambrosioni J, Miro JM, Martinez E, Blanco JL, (on behalf the COVID-19 in HIV Investigators). **Clinical characteristics, risk factors, and incidence of symptomatic COVID-19 in adults living with HIV: a single-center, prospective observational study.** *Aids.* 34(12):1775-1780. I.F.: 4.534

24. López-Huertas MR; Gutiérrez C; Madrid-Elena N; Hernández-Novoa B; Olalla-Sierra J; Plana M; Delgado R; Rubio R; Muñoz-Fernández MÁ; Moreno S. **Prolonged administration of maraviroc reactivates latent HIV in vivo but it does not prevent antiretroviral-free viral rebound.** *Scientific Reports (Nature Publisher Group).* 10(1):22286. I.F.: 3.998

25. Medina-Trillo C., Sedgwick D.M., Herrera L., Beltrán M., Moreno Á., Barrio P., Bedoya L.M., Alcamí J., Fustero S., Gallego J. **Nucleic acid recognition and antiviral activity of 1,4-substituted terphenyl compounds mimicking all faces of the HIV-1 Rev protein positively-charged α-helix.** *Scientific Reports (Nature Publisher Group).* 10(1):7190. I.F.: 3.998

26. Mocroft A, Lundgren JD, Rockstroh JK, Aho I, Wandeler G, Nielsen L, Edwards S, Viard JP, Lacombe K, Fätkenheuer G, Guaraldi G, Laguno M, Llibre J, Elinav H, Flamholc L, Gisinger M, Paduta D, Khromova I, Jilich D, Rozplochowski B, Oprea C, Peters L, EuroSIDA study. **Influence of Hepatitis C Coinfection and Treatment on Risk of Diabetes Mellitus in HIV-Positive Persons.** *Open Forum Infectious Diseases.* 7(12):ofaa470. I.F.: 3.656

27. Inciarte, A; Leal, L; Masfarre, L; Gonzalez, E; Diaz-Brito, V; Lucero, C; Garcia-Pindado, J; Leon, A; Garcia, F; Sexual Assault Victims Study Grp. **Post-exposure prophylaxis for HIV infection in sexual assault victims**. *Hiv Medicine.* 21(1):43-52. I.F.: 3.556

28. Fehér C, Plana M, Crespo Guardo A, Climent N, Leal L, Ugarte A, Fernández I, Etcheverry MF, Gatell JM, Sánchez-Palomino S, García F, Aloy P. **A classifier to predict viral control after antiretroviral treatment interruption in chronic HIV-1 infected patients.** *Jaids-Journal Of Acquired Immune Deficiency Syndromes.* 83(5):479-485. I.F.: 3.475

29. Ayala-Suarez, Ruben; Diez-Fuertes, Francisco; Calonge, Esther; De La Torre Tarazona, Humberto Erick; Gracia-Ruiz de Alda, Maria; Capa, Laura; Alcami, Jose. **Insight in miRNome of Long-Term Non-Progressors and Elite Controllers Exposes Potential RNAi Role in Restraining HIV-1 Infection.** *Journal Of Clinical Medicine.* 9(8):2452. I.F.: 3.303

30. Bano, Maria; Moren, Constanza; Barroso, Sergio; Juarez, Diana Luz; Guitart-Mampel, Mariona; Gonzalez-Casacuberta, Ingrid; Canto-Santos, Judith; Lozano, Ester; Leon, Agathe; Pedrol, Enric; Miro, Oscar; Tobias, Ester; Mallolas, Josep; Rojas, Jhon F; Cardellach, Francesc; Martinez, Esteban; Garrabou, Gloria. **Mitochondrial Toxicogenomics for Antiretroviral Management: HIV Post-exposure Prophylaxis in Uninfected Patients**. *Frontiers In Genetics.* 11(497). I.F.: 3.260

31. Martinez-Pérez A, Soriano-Pérez MJ, Salvador F, Gomez-Junyent J, Villar-Garcia J, Santin M, Muñoz C, González-Cordón A, Salas-Coronas J, Sulleiro E, Somoza D, Treviño B, Pecorelli R, Llaberia-Marcual J, Lozano-Serrano AB, Quinto L, Muñoz J,

Requena-Méndez A, Strong-Semtsi Working Group OBOT. **Clinical Features Associated with Strongyloidiasis in Migrants and the Potential Impact of Immunosuppression: A Case Control Study.** *Pathogens*. 9(6):1-12. I.F.: 3.018

32. Requena-Méndez A, Salas-Coronas J, Salvador F, Gomez-Junyent J, Villar-Garcia J, Santin M, Muñoz C, González-Cordón A, Cabezas Fernández MT, Sulleiro E, Arenas MDM, Somoza D, Vazquez-Villegas J, Treviño B, Rodríguez E, Valls ME, LLaberia-Marcual J, Subirá C, Muñoz J. **High Prevalence of Strongyloidiasis in Spain: A Hospital-Based Study**. *Pathogens*. 9(2):107. I.F.: 3.018

33. Vizcarra P, Blanco JL, Montejano R, Negredo E, Espinosa N, Casado JL, BIRDi study group. **Lack of impact of protease inhibitor resistance-associated mutations on the outcome of HIV-1-infected patients switching to darunavir-based dual therapy.** *Infectious Diseases*. 52(3):202-206. I.F.: 2.494

34. Dorman SE, Nahid P, Kurbatova EV, Goldberg SV, Bozeman L, Burman WJ, Chang KC, Chen M, Cotton M, Dooley KE, Engle M, Feng PJ, Fletcher CV, Ha P, Heilig CM, Johnson JL, Lessem E, Metchock B, Miro JM, Nhung NV, Pettit AC, Phillips PPJ, Podany AT, Purfield AE, Robergeau K, Samaneka W, Scott NA, Sizemore E, Vernon A, Weiner M, Swindells S, Chaisson RE, AIDS Clinical Trials Group and the Tuberculosis Trials Consortium. **High-dose rifapentine with or without moxifloxacin for shortening treatment of pulmonary tuberculosis: Study protocol for TBTC study 31/ACTG A5349 phase 3 clinical trial.** *Contemporary Clinical Trials*. 90(105938). I.F.: 1.832

35. Muelas Fernandez M; Rojas Lievano JF; Perez Vidal R; Flor Perez A; Tapiz Reula A; Mallolas Masferrer J. **Prevalence of late diagnosis of HIV infection.** *Medicina Clinica*. 155(9):388-391. I.F.: 1.635

36. Casado JL, Vizcarra P, Blanco JL, Montejano R, Negredo E, Espinosa N, Montero M, Mena A, Palacios R, Lopez JC, Vergas J, Galindo MJ, Cabello A, Deltoro MG, Diaz De Santiago A, BIRDi study group. **Maintenance of virologic suppression and improvement in comorbidities after simplification to raltegravir plus boosted darunavir among treatment-experienced HIV-infected patients.** *International Journal Of Std & Aids*. 31(5):467-473. I.F.: 1.406

Review / I.F.: 17.335

1. Letang E; Ellis J; Naidoo K; Casas EC; Sánchez P; Hassan-Moosa R; Cresswell F; Miró JM; García-Basteiro AL. **Tuberculosis-HIV Co-Infection: Progress and Challenges After Two Decades of Global Antiretroviral Treatment Roll-Out.** *Archivos De Bronconeumologia*. 56(7):446-454. I.F.: 4.957

2. Leal L, Fehér C, Richart V, Torres B, García F. **Antiretroviral Therapy Interruption (ATI) in HIV-1 Infected Patients Participating in Therapeutic Vaccine Trials: Surrogate Markers of Virological Response.** *Vaccines*. 8(3):442. I.F.: 4.086

3. Laut K, Kirk O, Rockstroh J, Phillips A, Ledergerber B, Gatell J, Gazzard B, Horban A, Karpov I, Losso M, d'Arminio Monforte A, Pedersen C, Ristola M, Reiss P, Scherrer AU, de Wit S, Aho I, Rasmussen LD, Svedhem V, Wandeler G, Pradier C, Chkhartishvili N, Matulionyte R, Oprea C, Kowalska JD, Begovac J, Miró JM, Guaraldi G, Paredes R, Raben D, Podlekareva D, Peters L, Lundgren JD, Mocroft A. **The EuroSIDA study: 25 years of scientific achievements.** *Hiv Medicine*. 21(2):71-83. I.F.: 3.556

4. Blanco JR, Morillo R, Abril V, Escobar I, Bernal E, Folguera C, Brañas F, Gimeno M, Ibarra O, Iribarren JA, Lázaro A, Mariño A, Martín MT, Martinez E, Ortega L, Olalla J, Robustillo A, Sanchez-Conde M, Rodriguez MA, de la Torre J, Sanchez-Rubio J, Tuset M, Gesida and SEFH. **Deprescribing of non-antiretroviral therapy in HIV-infected patients.** *European Journal Of Clinical Pharmacology*. 76(3):305-318. I.F.: 2.641

5. López M, Gonce A, Meler E, Plaza A, Hernández S, Martinez-Portilla RJ, Cobo T, García F, Gómez Roig MD, Gratacós E, Palacio M, Figueras F, on behalf of the COVID Collaborative Group. **Coronavirus Disease 2019 in Pregnancy: A Clinical Management Protocol and Considerations for Practice.** *Fetal Diagnosis And Therapy*. 47(7):519-528. I.F.: 2.095

Letters / I.F.: 34.336

1. Miró JM, Ambrosioni J, Blanco JL . **COVID-19 in patients with HIV - Authors' reply.** *Lancet Hiv*. 7(6):e383-e384. I.F.: 14.813

2. Pujol M, Tebé C, Pallarès N, Miró JM, Carratalà J. **Reply to authors.** *Clinical Infectious Diseases*. I.F.: 8.313

3. Ugarte A, Romero Y, Tricas A, Casado C, Lopez-Galindez C, Garcia F, Leal L. **Unintended HIV-1 Infection During Analytical Therapy Interruption.** *Journal Of Infectious Diseases*. 221(10):1740-1742. I.F.: 5.022

4. Etcheverry-Rufino F, Lucero C, López-Cerón M, Aleñar-Gelabert Y, Fernández I, Ugarte A, Bargalló ME, Goetz M, Veloza L, Bombí JA, Pellisé M, Leal L, Plana M, Climent N, García F. **Local barrier dysfunction identified by confocal laser endomicroscopy predicts bacterial translocation in HIV infection.** *Aids*. 34(2):328-331. I.F.: 4.534

5. Modesto Dos Santos JL, Laguno M, Inciarte A, González-Cordón A. **About Executive summary of the GeSIDA consensus document on control and monitoring of HIV-infected patients.** *Enfermedades Infecciosas Y Microbiologia Clinica*. 38(6):299-300. I.F.: 1.654

Case Reports / I.F.: 7.714

1. Ramos, Ainoa Ugarte; Hernandez, Daniel Martinez; Gallizo, Jesus Aibar. **Pulmonary Actinomycosis Presenting as Indurated Pectoral Mass.** *Archivos De Bronconeumologia*. 56(9):592. I.F.: 4.957

2. Díaz N; Ambrosioni J. **HIV-1 primary infection and acute hepatitis A: Beware of co-infection!** *Enfermedades Infecciosas Y Microbiologia Clinica*. 38(7):345-347. I.F.: 1.654

3. Aldecoa, Iban; Archilla, Ivan; Herrero, Laura; Garcia, Felipe; Torres, Berta; Gaig, Carles; Fernandez, Sara; Angeles Marcos, Maria; Gelpi, Ellen. **Image of the month: Measles inclusion body encephalitis**. *Clinical Neuropathology*. 39(4):148-151. I.F.: 1.103

Clinical Guidelines / I.F.: 36.13

1. Abdel-Mohsen M; Richman D; Siliciano RF; Nussenzweig MC; Howell BJ; Martinez-Picado J; Chomont N; Bar KJ; Yu XG; Lichterfeld M; Alcami J; Hazuda D; Bushman F; Siliciano JD; Betts MR; Spivak AM; Planelles V; Hahn BH; Smith DM; Ho YC; Buzon MJ; Gaebler C; Paiardini M; Li Q; Estes JD; Hope TJ; Kostman J; Mounzer K; Caskey M; Fox L; Frank I; Riley JL; Tebas P; Montaner LJ; BEAT-HIV Delaney Collaboratory to Cure HIV-1 infection.

Recommendations for measuring HIV reservoir size in cure-directed clinical trials. *Nature Medicine.* 26(9):1339-1350. I.F.: 36.130

Consortium Publications / I.F.: 53.834

1. Del Amo J, Polo R, Moreno S, Díaz A, Martínez E, Arribas JR, Jarrín I, Hernán MA, The Spanish HIV/COVID-19 Collaboration. **Incidence and Severity of COVID-19 in HIV-Positive Persons Receiving Antiretroviral Therapy: A Cohort Study.** *Annals Of Internal Medicine.* 173(7):536-541. I.F.: 21.317

2. Molina JM; Squires K; Sax PE; Cahn P; Lombaard J; DeJesus E; Lai MT; Rodgers A; Lupinacci L; Kumar S; Sklar P; Hanna GJ; Hwang C; Martin EA; Hagins DP; Osiyemi OO; Prelutsky DJ; Ramgopal MN; Scarsella AJ; Dretler R; Bettacchi CJ; Sims J; Clay PG; Bellos NC; Thompson MA; Montero J; McDonald CK; Creticos C; Shamblaw D; Mogyoros M; Terrelonge AE; Valdes M; Tashima KT; Robbins WJ; Felizarta FA; Elion RA; Slim J; Win SS; Lalla-Reddy SN; Ruane PJ. **Doravirine versus ritonavir-boosted darunavir in antiretroviral-naive adults with HIV-1 (DRIVE-FORWARD): 96-week results of a randomised, double-blind, non-inferiority, phase 3 trial.** *Lancet Hiv.* 7(1):e16-e26. I.F.: 14.813

3. Berenguer J, Ryan P, Rodríguez-Baño J, Jarrín I, Carratalà J, Pachón J, Yllescas M, Arriba JR, COVID-19@Spain Study Group. **Characteristics and predictors of death among 4,035 consecutively hospitalized patients with COVID-19 in Spain.** *Clinical Microbiology And Infection.* 26(11):1525-1536. I.F.: 7.117

4. Suárez-García I, Alejos B, Delgado E, Rivero M, Pineda JA, Jarrin I, Cohort of the Spanish HIV/AIDS Network (CoRIS) study group. **How well are we performing the initial assessment of HIV-positive patients? Results from a multicentre cohort in Spain.** *Hiv Medicine.* 21(2):128-134. I.F.: 3.556

5. Ryom L, Cotter A, De Miguel R, Béguelin C, Podlekareva D, Arribas JR, Marzolini C, Mallon P, Rauch A, Kirk O, Molina JM, Guaraldi G, Winston A, Bhagani S, Cinque P, Kowalska JD, Collins S, Battegay M, EACS Governing Board. **2019 update of the European AIDS Clinical Society Guidelines for treatment of people living with HIV version 10.** *Hiv Medicine.* 21(10):617-624. I.F.: 3.556

6. Greenberg L; Ryom L; Wandeler G; Grabmeier-Pfistershammer K; Öllinger A; Neesgaard B; Stephan C; Calmy A; Rauch A; Castagna A; Spagnuolo V; Johnson M; Stingone C; Mussini C; De Wit S; Necsoi C; Campins AA; Pradier C; Stecher M; Wasmuth JC; Monforte AD; Law M; Puhr R; Chkhartishvilli N; Tsertsvadze T; Garges H; Thorpe D; Lundgren JD; Peters L; Bansi-Matharu L; Mocroft A; RESPOND Study Group. **Uptake and Discontinuation of Integrase Inhibitors (INSTIs) in a Large Cohort Setting.** *Jaids-Journal Of Acquired Immune Deficiency Syndromes.* 83(3):240-250. I.F.: 3.475

GRANTS FOR RESEARCH IN PROGRESS

Blanco JL. **Papel de la determinación de resistencias en PMBC mediante secuenciación masica del DNA proviral integrado en sujetos VIH+ con fracaso virológico con viremias bajas (50-200 copias/mL).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01562
Duration: 01/01/2018-30/06/2021

Garcia F, Plana M. **Preclinical development of innovative mRNA/MVA vaccines against SARS-CoV2.**
Sponsored by: Generalitat de Catalunya. GENCAT_DGRIS_COVID19
Duration: 01/01/2020-31/12/2020

Garcia F, Plana M. **Preclinical development of innovative mRNA/MVA vaccines against SARS-CoV2.**
Sponsored by:Instituto de Salud Carlos III (ISCIII). FIS_COV20/00214
Duration: 30/04/2020-29/04/2021

Garcia F. **Red Temática de Investigación Cooperativa en Salud - SIDA.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0025/0002
Duration: 01/01/2017-31/12/2021

García F. **Utilización de medicina de sistemas para la predicción de la inmunogenicidad y eficacia de vacunas terapéuticas frente a VIH.**
Sponsored by: Ministerio de Economia y Competitividad (MINECO). SAF2015-66193-R
Duration: 01/01/2016-31/12/2020

Garcia F. **Desarrollo preclínico de una innovadora vacuna ARNm contra el VIH.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_RTI2018-096309-B-I00.
Duration: 01/01/2019-31/12/2021

Garcia F. **Evaluating mHealth technology in HIV to improve Empowerment and healthcare utilisation: Research and innovation to Generate Evidence for personalised care.**
Sponsored by: European Commission. CE_H2020-PHC-2014-1s
Duration: 01/05/2015-30/09/2020

Garcia F. **European HIV Vaccine Alliance (EHVA): a EU platform for the discovery and evaluation of novel prophylactic and therapeutic vaccine candidates.**
Sponsored by: European Commission. CE_H2020-PHCRTD-15
Duration: 01/01/2016-30/06/2023

Garcia F. **Evaluating a Combination of Immune-based Therapies to Achieve a Functional Cure of HIV Infection.**
Sponsored by: European Commission. CE_H2020-SC1_16abr1s
Duration: 01/01/2017-31/12/2021

Garcia F. **Joint Action on integrating prevention, testing and linkage to care strategies acros HIV, viral hepatitis, TB and STIs in Europe.**
Sponsored by: European Commission. CE_HP-JA-2016
Duration: 01/09/2017-28/02/2021

Laguno M. **Micro-eliminación de la infección por el VHC en el colectivo de HSH/VIH+ en Barcelona.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00583
Duration: 01/01/2019-31/12/2021

Mallolas J. **Grup de Recerca VIH/SIDA.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_00615
Duration: 01/01/2017-30/09/2021

Mallolas J. **Evaluación clínica y de consumo sanitario del seguimiento telemático de una cohorte de pacientes infectados por el VIH.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00726
Duration: 01/01/2018-30/06/2021

Martínez EJ. **Predictive Metabolomics biomarkers for cardiovascular disease risk in ART-HIV+ population.**
Sponsored by: Gilead Sciences (SLU).
GLD16/00104
Duration: 14/12/2016-

Martínez EJ. **Seguridad, tolerabilidad y eficacia de dos estrategias de simplificación basadas en dolutegravir en pacientes infectados por VIH con supresión virológica sostenida.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01085
Duration: 01/01/2017-30/06/2021

Ambrosioni J, Miró JM. **Intensified tuberculosis treatment to reduce the high mortality of tuberculous meningitis in HIV-infected and uninfected patients.**
Sponsored by: European Commission.
CE_EDCTP_17T
Duration: 01/01/2019-31/12/2023

Miró JM. **Microbiome-based stratification of individuals at risk of HIV-1 acquisition, chronic clinical complications,antimicrobial drug resistance,and unresponsiveness to therapeutic HIV-1 vaccination.**
Sponsored by: European Commission.
CE_H2020-SC1_2019_2s
Duration: 01/01/2020-31/12/2024

Plana M. **Desarrollo de una vacuna terapéutica frente al VIH basada en una nueva formulación de mRNA con nanopartículas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00480
Duration: 01/01/2016-30/11/2020

Plana M. **Diseño de vacunas frente a la gripe humana mediante micelas multifuncionales capaces de utilizar la inmunidad innata.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_AC16/00051
Duration: 01/01/2017-30/06/2021

Plana M. **Estudio preclínico de la eficacia de una nueva vacuna terapéutica frente al VIH-1 basada en mRNA.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00699
Duration: 01/01/2019-31/12/2021

DOCTORAL THESES

Miro JM, Sánchez-Palomino S. **Infección aguda y reciente por VIH-1: Epidemiología en Barcelona y evaluación de una estrategia de cura funcional.**
PhD student: David Nicolás Ocejo

Plana M, Crespo-Guardo A. **Nanopartículas y Células Dendríticas: estudio de nuevas estrategias en inmunoterapia frente al VIH.**
PhD student: Manuel Enric Bargalló Marès

1.8 Endocarditis. Cardiovascular infections. Experimental model

LOCATION
CELLEX building, floor 4A

KEYWORDS
1. **Endocarditis**
2. **Native valve endocarditis**
3. **Prosthetic valve endocarditis**
4. **Cardiac Implantable Electronic Device (CIED) infection**
5. **Vascular infections**
6. **Experimental endocarditis**

RELATED DISEASES
1. **Bacteremia**
2. **Sepsis**
3. **Heart failure**
4. **Stroke**
5. **Bone and joint infections**
6. **Cardiac surgery**
7. **Cardiac implantable electronic devices**

GROUP INVOLVED IN
REIPI

Original publications

TOTAL	8
IF	49,64
Mean IF	6,21
Q1	75%
D1	38%
MA	75%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
José M. Miró (HCB)
T. 93 227 54 00 (Ext.: 2765)
jmmiro@ub.edu

RESEARCHERS
Cristina García de la Maria (FCRB)

ASSISTANT RESEARCHERS
Juan Carlos Enrique Ambrosioni (HCB)

POST-DOCTORAL RESEARCHERS
Maria Alexandra Cañas (FCRB)
Eduardo Quintana (HCB)
Elena Sandoval (HCB)

PRE-DOCTORAL RESEARCHERS
Javier Garcia Gonzalez (FCRB)
Delia Garcia Pares (FCRB)
Marta Hernández Meneses (FCRB)
Adrián Tellez (FCRB)

ADMINISTRATIVE STAFF
Eva Ariza (IDIBAPS)

PROBLEM

Cardiovascular infections in general and infective endocarditis in particular are diseases that have severe effects on patients quality of life. They have high morbidity and mortality rates, as it affects the heart and the vessels as well as other organs such as the brain. Surgical treatment is necessary in more than fifty per cent of cases.

APPROACH

Our principal objective is to transfer basic scientific knowledge to daily clinical practice. Making progress in the study of IE requires an interdisciplinary and translational approach, from basic in vitro and in vivo laboratory research in an experimental endocarditis model to clinical studies. This is achieved by a close collaboration between experts in infectious disease, microbiology, cardiology, cardiac and electrophysiological imaging, heart surgery, nuclear medicine, neurology and anatomical pathology. The aspects of IE addressed covered all the clinical spectrum of IE: prevention strategies; optimising drug monitoring; improving clinical imaging and laboratory diagnostic techniques; developing new, effective treatment strategies; and studying improved surgical approaches.

IMPACT

The results of our studies can have an important impact on society, as they can lead to: earlier diagnosis of these diseases; the identification of new antibiotics, antibiotic combinations and therapeutic strategies that are effective for treating cardiovascular infections; better determination of the best time for heart surgery in diseases involving cardiovascular infections; and the prevention of post-operative cardiovascular infections and those that develop in patients with heart disease. The conclusions of the studies that we have conducted may be incorporated into national and international clinical guidelines.

RESEARCH LINES

- Clinical research.
- Translational research.
- Experimental endocarditis studies.

PUBLICATIONS

Originals / I.F.: 49.643

1. Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, Miró JM, GAMES Investigators. **A Contemporary Picture of Enterococcal Endocarditis.** *Journal Of The American College Of Cardiology.* 75(5):482-494. I.F.: 20.589

2. Orihuela-Martín J, Rodríguez-Núñez O, Morata L, Cardozo C, Puerta-Alcalde P, Hernández-Meneses M, Ambrosioni J, Linares L, Bodro M, de Los Angeles Guerre-

ro-León M, Del Río A, Garcia-Vidal C, Almela M, Pitart C, Marco F, Soriano A, Martínez JA. **Performance of differential time to positivity as a routine diagnostic test for catheter-related bloodstream infections: a single centre experience.** *Clinical Microbiology And Infection.* 26(3):303-e1-383.e7. I.F.: 7.117

3. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combinations are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis.** *Journal Of Antimicrobial Chemotherapy.* 75(12):3586-3592. I.F.: 5.439

4. Pericàs JM; Cervera C; Garcia-de-la-Mària C; Sharma-Kuinkel BK; Gonzales R; Moreno A; Almela M; Falces C; Quintana E; Fuster D; Marco F; Bayer AS; Fowler VG; Miró JM. **Relationship between Vancomycin MIC and Virulence Gene Expression in Clonal Complexes of Methicillin-Susceptible Staphylococcus aureus Strains Isolated from Left-Sided Endocarditis.** *Antimicrobial Agents And Chemotherapy.* 64(3):e01579-19. I.F.: 4.904

5. Bajic SS; Cañas MA; Tolinacki M; Badia J; Sánchez B; Golic N; Margolles A; Baldomá L; Ruas-Madiedo P. **Proteomic profile of extracellular vesicles released by Lactiplantibacillus plantarum BGAN8 and their internalization by non-polarized HT29 cell line.** *Scientific Reports (Nature Publisher Group).* 10(1):21829. I.F.: 3.998

6. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal Of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

7. Ramos-Martínez A, Pericàs JM, Fernández-Cruz A, Muñoz P, Valerio M, Kestler M, Montejo M, Fariñas MC, Sousa D, Domínguez F, Ojeda-Burgos G, Plata A, Vidal L, Miró JM, Grupo de Apoyo al Manejo de la Endocarditis Infecciosa en España (GAMES). **Four weeks versus six weeks of ampicillin plus ceftriaxone in Enterococcus faecalis native valve endocarditis: A prospective cohort study.** *Plos One.* 15(8):e0237011. I.F.: 2.74

8. Carino D, Fernández-Cisneros A, Hernández-Meneses M, Sandoval E, Llopis J, Falces C, Miró JM, Quintana E, Grup d'Estudi d'Endocarditis Infecciosa de l'Hospital Clínic de Barcelona. **The fate of active left-side infective endocarditis with operative indication in absence of valve surgery.** *Journal Of Cardiac Surgery.* 35(11):3034-3040. I.F.: 1.490

Review / I.F.: 22.673

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

Letters / I.F.: 28.902

1. Pericàs JM, Llopis J, Ramos-Martínez A, Muñoz P, Miró JM, GAMES Investigators. **Reply: The Need for Quality and Unbiased Data in Infective Endocarditis.** *Journal Of The American College Of Cardiology.* 75(23):2994-2995. I.F.: 20.589

2. Pericàs JM; Llopis J; Ramos-Martínez A; Fernández-Cruz A; Muñoz P; Miró JM. **Enterococcal endocarditis: the Eternal Return of the Same Bug.** *Clinical Infectious Diseases.* 71(11):3010-3011. I.F.: 8.313

Clinical Guidelines / I.F.: 3.271

1. Hasse B, Hannan MM, Keller PM, Maurer FP, Sommerstein R, Mertz D, Wagner D, Fernández-Hidalgo N, Nomura J, Manfrin V, Bettex D, Hernandez Conte A, Durante-Mangoni E, Tang TH, Stuart RL, Lundgren J, Gordon S, Jarashow MC, Schreiber PW, Niemann S, Kohl TA, Daley CL, Stewardson AJ, Whitener CJ, Perkins K, Plachouras D, Lamagni T, Chand M, Freiberger T, Zweifel S, Sander P, Schulthess B, Scriven JE, Sax H, van Ingen J, Mestres CA, Diekema D, Brown-Elliott BA, Wallace RJ, Baddour LM, Miro JM, Hoen B,, Athan E, Bayer A, Barsic B, Corey GR, Chu VH, Durack DT, Fortes CQ, Fowler V, Krachmer AW, Durante-Magnoni E, Wilson WR M. chimaera ISCVID Investigators and, ISCVID Executive Committee, Infectious Diseases Specialists, Hospital Epidemiologists, Microbiologists and Molecular Typing Specialists, Cardiac Surgeons/ Perfusionists/ Cardiologists, Ophthalmology, Anaesthesiologists, Public Health. **International Society of Cardiovascular Infectious Diseases Guidelines for the Diagnosis, Treatment and Prevention of Disseminated Mycobacterium chimaera Infection Following Cardiac Surgery with Cardiopulmonary Bypass.** *Journal Of Hospital Infection.* 104(2):214-235. I.F.: 3.271

GRANTS FOR RESEARCH IN PROGRESS

Ambrosioni J. **Tratamiento antimicrobiano oral vs. parenteral ambulatorio para la endocarditis infecciosa (Ensayo clínico OraPAT-EI GAMES).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00861
Duration: 01/01/2019-31/12/2022

Garcia de la Maria C. **Prevention of vascular catheter-related infections by the FUNctionalization of CATHeters with thermically activated hydrogels with antimicrobial agents of broad spectrum.**
Sponsored by: Fundació La Marató de TV3. Infeccioses_18
Duration: 21/06/2019-20/06/2022

Pericas JM. **Estudio prospectivo multicéntrico para explorar la relación entre las infecciones del torrente sanguineo por Enterococcus faecalis y la neoplasia colorrectal (Proyecto EnteroColonus-GAMES).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01898
Duration: 13/01/2020-31/12/2022

Miró JM, Garcia de la Maria C. **Eficacia de nuevas pautas de tratamiento antibiótico de la endocarditis enterocòcica evaluadas in vitro y en el modelo de endocarditis experimental.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01251
Duration: 01/01/2018-31/12/2021

1.9 Emergencies: processes and pathologies

LOCATION
HCB building

KEYWORDS
1. **Emergency department**
2. **Organization**
3. **Toxicology**
4. **Chest pain**
5. **Arrhythmia**
6. **Acute heart failure**

RELATED DISEASES
1. **Quality**
2. **Drug consumption and emergencies**
3. **Atrial fibrillation**
4. **Ischaemic cariomyopathy**
5. **Cardiopulmonar ressuscitation**
6. **Risk scores**

GROUP INVOLVED IN
AGAUR_SGR17: 01424

Original publications

TOTAL	42
IF	190,61
Mean IF	4,54
Q1	57%
D1	7%
MA	62%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Òscar Miró (HCB)
T. 93 227 54 00 (Ext. 3153)
omiro@clinic.cat

RESEARCHERS
Blanca Coll-Vinent (HCB)
Miguel Galicia (HCB)
Ana García Martínez (HCB)
Victor Gil (HCB)
Sònia Jiménez (HCB)
Santiago Nogué (HCB)
Mar Ortega (HCB)
Rafael Perelló (HCB)
Miguel Sánchez sánchez (HCB)

ASSISTANT RESEARCHERS
Ernest Bragulat (HCB)
Elisenda Gómez (HCB)

POST-DOCTORAL RESEARCHERS
Josep Ramon Alonso (HCB)
Montserrat Amigó (HCB)
Albert Antolín (HCB)
Rosa Escoda (HCB)
Carolina Fuenzalida Inostroza (HCB)
Francesc Xavier Jiménez (UB)
Beatriz López Barbeito (HCB)
Emilio Salgado (HCB)

PRE-DOCTORAL RESEARCHERS
Sira Aguiló (HCB)
Pablo Burbano (UB)
Javier Dario Cabrera (UB)
Francesc Xavier Escalada (UB)
Begoña Espinosa (UB)
Lluís Llauger (UB)
Javier López Piedra (UB)

NURSING STAFF
Sofía Calderón (HCB)
Helena Morera (HCB)
Cristina Ruiz Queija (IDIBAPS)

COLLABORATORS
Carolina Sanchez Marcos (FCRB)

PROBLEM

Emergency medicine has the principal mission of acting on any health condition during the acute phase. This initial care is uniquely and exclusively provided by emergency care professionals and has important implications in terms of patient survival and prognosis, especially in time-dependent conditions such as sepsis, acute myocardial infarctions, stroke, and heart failure, among others. Improved knowledge about emergency care processes is leading to continuous progress, which has a major care and organisational impact on the health system in both the short and long term.

APPROACH

The continuous cross-disciplinary nature of disease mean that the emergency services sequentially share care with other specialist areas. In other words, after the initial emergency care, the patient is referred to each of the different hospital specialist areas, depending on their illness.

Consolidating research (basically clinical research) in emergency processes (particularly the most prevalent ones) makes it possible to improve our knowledge of them and generate new research lines. This improves patient care and promotes the optimisation and the continuity of the medical process.

IMPACT

In recent years, the group has exponentially increased its research activity, with its global impact factor rising from 37.46 in 2016, to 235.95 in 2017. This upwards trend has continued during the past year.

As a result of this research work, modifications have been made in certain areas of care practice such as heart failure, chest pain, and intoxicated patient care. Furthermore, the group has promoted the creation of national and international work networks, which are especially relevant in a world where multidisciplinary working and teamwork are of fundamental importance.

RESEARCH LINES

- Acute heart failure.

- Attention to infectious diseases in emergency departments.

- Clinical aspects of intoxicated patients and medical care for problems caused by drug abuse.

- Diffusion of the teaching of cardiopulmonary resuscitation maneuvers among the general population.

- Dynamics of teaching and research in emergency medicine.

- Evaluation of chest pain in the emergency department.

- Functional aspects of the hospital emergency departments.

PUBLICATIONS

Originals / I.F.: 190.608

1. Schoepfer H, Nestelberger T, Boeddinghaus J, Twerenbold R, Lopez-Ayala P, Koechlin L, Wussler D, Zimmermann T, Miro O, Martín-Sánchez JF, Christ M, Keller DI, Rubini Gimenez M, Mueller C, APACE (Advantageous Predictors of Acute Coronary Syndrome Evaluation) Investigators. **Effect of a Proposed Modification of the Type 1 and Type 2 Myocardial Infarction Definition on Incidence and Prognosis**. *Circulation.* 142(21):2083-2085. I.F.: 23.603

2. Motiejunaite, Justina; Akiyama, Eiichi; Cohen-Solal, Alain; Maggioni, Aldo Pietro; Mueller, Christian; Choi, Dong-Ju; Kavoliuniene, Ausra; Celutkiene, Jelena; Parenica, Jiri; Lassus, Johan; Kajimoto, Katsuya; Sato, Naoki; Miro, Oscar; Peacock, W Frank; Matsue, Yuya; Voors, Adriaan A; Lam, Carolyn S P; Ezekowitz, Justin A; Ahmed, Ali; Fonarow, Gregg C; Gayat, Etienne; Regitz-Zagrosek, Vera; Mebazaa, Alexandre;Great Global Res Acute Conditions. **The association of lorg-term outcome and biological sex in patients with acute heart failure from different geographic regions.** *European Heart Journal.* 41(13):1357-1364. I.F.: 22.673

3. Boeddinghaus J, Nestelberger T, Koechlin L, Wussler D, Lopez-Ayala P, Walter JE, Troester V, Ratmann PD, Seidel F, Zimmermann T, Badertscher P, Wildi K, Rubini Giménez M, Potlukova E, Strebel I, Freese M, Miró Ò, Martin-Sanchez FJ, Kawecki D, Keller DI, Gualandro DM, Christ M, Twerenbold R, Mueller C, APACE Investigators. **Early Diagnosis of Myocardial Infarction With Point-of-Care High-Sensitivity Cardiac Troponin I**. *Journal Of The American College Of Cardiology.* 75(10):1111-1124. I.F.: 20.589

4. Miró Ò; Takagi K; Gayat É; Gil V; Llorens P; Martín-Sánchez FJ; Jacob J; Herrero-Puente P; Escoda R; Pilar López-Díez M; Valero A; Fuentes M; Garrido JM; Salvo E; Rizzi MA; Aguirre A; Travería Bécquer L; Domínguez-Rodríguez A; Padrosa J; Martínez G; Arrigo M; Freund Y; Mebazaa A. **Time-pattern of adverse outcomes after an infection-triggered acute heart failure decompensation and the influence of early antibiotic administration and hospitalisation: results of the PAPRICA-3 study.** *Clinical Research In Cardiology.* 109(1):34-45. I.F.: 5.268

5. Rizzi MA, Sarasola AG, Arbé AA, Mateo SH, Gil V, Llorens P, Jacob J, Martín-Sánchez FJ, Puente PH, Escoda R, Espinosa B, Roset À, Torres-Gárate R, Torres-Murillo J, Mecina AB, López-Díez MP, Pérez JMÁ, Tost J, Salvo E, López-Grima ML, Gil C, Mir M, Rutzinska F, Chioncel O, Miró Ò, ICA-SEMES Research Group. **Factors associated with in-hospital mortality and adverse outcomes during the vulnerable post-discharge phase after the first episode of acute heart failure: results of the NOVICA-2 study.** *Clinical Research In Cardiology*. I.F.: 5.268

6. Rubini Giménez M, Wildi K, Wussler D, Koechlin L, Boeddinghaus J, Nestelberger T, Badertscher P, Sedlmayer R, Puelacher C, Zimmermann T, du Fay de Lavallaz J, Lopez-Ayala P, Leu K, Rentsch K, Miró Ò, López B, Martín-Sánchez FJ, Bustamante J, Kawecki D, Parenica J, Lohrmann J, Kloos W, Buser A, Keller DI, Reichlin T, Twerenbold R, Mueller C. **Early kinetics of cardiac troponin in suspected acute myocardial infarction.** *Revista Espanola De Cardiologia.* I.F.: 4.642

7. Miró Ò, Llorens P, Jiménez S, Piñera P, Burillo-Putze G, Martín A, Martín-Sánchez FJ, Lamberechts J, Alquézar-Arbé A, Jacob J, Noceda J, Cano Cano MJ, Fortuny Bayarri MJ, Marín Porrino JM, Meléndez N, Pérez García C, Brasó Aznar JV, Ponce MC, Díaz Fernández E, Ejarque Martínez L, Peiró Gómez A, Tost J, Domínguez MJ, Teigell Muñoz FJ, González Del Castillo J, Spanish Investigators on Emergency Situations TeAm (SIESTA) network. **A case-control emergency department-based analysis of acute pancreatitis in Covid-19: Results of the UMC-19-S₆.** *Journal Of Hepato-Biliary-Pancreatic Sciences.* I.F.: 4.160

8. Zimmermann T, du Fay de Lavallaz J, Nestelberger T, Gualandro DM, Strebel I, Badertscher P, Lopez-Ayala P, Widmer V, Freese M, Miró Ò, Christ M, Cullen L, Than M, Martin-Sanchez FJ, Di Somma S, Peacock WF, Keller DI, Boeddinghaus J, Twerenbold R, Wussler D, Koechlin L, Walter JE, Bürgler F, Geigy N, Kühne M, Reichlin T, Lohrmann J, Mueller C. **Incidence, characteristics, determinants, and prognostic impact of recurrent syncope.** *Europace.* 22(12):1885-1895. I.F.: 4.045

9. Harjola P, Miró Ò, Martín-Sánchez FJ, Escalada X, Freund Y, Penaloza A, Christ M, Cone DC, Laribi S, Kuisma M, Tarvasmäki T, Harjola VP, EMS-AHF Study Group. **Pre-hospital management protocols and perceived difficulty in diagnosing acute heart failure.** *ESC Heart Failure.* 7(1):289-296. I.F.: 3.902

10. Llauger L, Jacob J, Herrero-Puente P, Aguirre A, Suñén-Cuquerella G, Corominas-Lasalle G, Llorens P, Martín-Sánchez FJ, Gil V, Roset A, Ruibal JC, Pérez-Durá MJ, Juan-Gómez MÁ, Garrido JM, Richard F, Lucas-Imbernon FJ, Alonso H, Tost J, Gil C, Miró Ò, ICA-SEMES Research Group. **The CRAS-EAHFE study: Characteristics and prognosis of acute heart failure episodes with cardiorenal-anaemia syndrome at the emergency department.** *European Heart Journal-Acute Cardiovascular Care.* 9(5):406-418. I.F.: 3.813

11. Rossello X, Bueno H, Gil V, Jacob J, Javier Martín-Sánchez F, Llorens P, Herrero Puente P, Alquézar-Arbé A, Raposeiras-Roubín S, López-Díez MP, Pocock S, Miró Ò . **MEESSI-AHF risk score performance to predict multiple post-index event and post-discharge short-term outcomes.** *European Heart Journal-Acute Cardiovascular Care.* I.F.: 3.813

12. Grimm, Karin; Twerenbold, Raphael; Abaecherli, Roger; Boeddinghaus, Jasper; Nestelberger, Thomas; Koechlin, Luca; Troester, Valentina; Bourtzou, Anna; Keller,

Dagmar, I; Geigy, Nicolas; Kozhuharov, Nikola; Wussler, Desiree; Wildi, Karin; Hillinger, Petra; Rubini Gimenez, Maria; Strebel, Ivo; Badertscher, Patrick; Puelacher, Christian; de Lavallaz, Jeanne du Fay; Osswald, Luca; Morawiec, Beata; Kawecki, Damian; Miro, Oscar; Kuehne, Michael; Reichlin, Tobias; Mueller, Christian. **Diagnostic and prognostic value of ST-segment deviation scores in suspected acute myocardial infarction.** *European Heart Journal-Acute Cardiovascular Care.* 9(8):857-868. I.F.: 3.813

13. Miró Ò, Lopez-Ayala P, Martínez-Nadal G, Troester V, Strebel I, Coll-Vinent B, Gil V, Jiménez S, García-Martínez A, Ortega M, Boeddinghaus J, Nestelberger T, Gualandro DM, Bragulat E, Sánchez M, Peacock WF, Mueller C, López-Barbeito B. **External validation of an emergency department triage algorithm for chest pain patients. European** *Heart Journal-Acute Cardiovascular Care.* 9(6):576-585. I.F.: 3.813

14. Dominguez-Rodriguez A; Avanzas P; Abreu-Gonzalez P; Baez-Ferrer N; Martín-Sanchez F; Mirò Ó. **Adherence to Mediterranean diet and prognosis in older patients scheduled to undergo cardiac resynchronization therapy.** *Nutrition Metabolismand Cardiovascular Diseases.* 30(1):77-83. I.F.: 3.700

15. Roset A, Jacob J, Herrero-Puente P, Alquézar A, Martín-Sanchez FJ, Llorens P, Gil V, Cabello I, Richard F, Garrido JM, Gil C, Llauger L, Wussler D, Mueller C, Miró Ò, ICA-SEMES Research Group. **High-sensitivity cardiac troponin T 30 days all-come mortality in patients with acute heart failure.** *European Journal of Clinical Investigation.* 50(6):e13248. I.F.: 3.481

16. Bano, Maria; Moren, Constanza; Barroso, Sergio; Juarez, Diana Luz; Guitart-Mampel, Mariona; Gonzalez-Casacuberta, Ingrid; Canto-Santos, Judith; Lozano, Ester; Leon, Agathe; Pedrol, Enric; Miro, Oscar; Tobias, Ester; Mallolas, Josep; Rojas, Jhon F; Cardellach, Francesc; Martinez, Esteban; Garrabou, Gloria. **Mitochondrial Toxicogenomics for Antiretroviral Management: HIV Post-exposure Prophylaxis in Uninfected Patients.** *Frontiers in Genetics.* 11(497). I.F.: 3.260

17. Llauger L; Jacob J; Moreno LA; Aguirre A; Martín-Mojarro E; Romero-Carrete JC; Martínez-Nadal G; Tost J; Corominas-Lasalle G; Roset À; Cardozo C; Suñén-Cuquerella G; Alarcón B; Herrera-Mateo S; Ruibal JC; Alquézar-Arbé A; Gil V; Donea R; Berenguer M; Llorens P; Villanueva-Cutillas B; Martín-Sánchez FJ; Herrero P; Miró Ò. **Worsening renal function during an episode of acute heart failure and its relation to short-and long-term mortality: Associated factors in the epidemiology of acute heart failure in emergency departments–worsening renal function study.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(5):332-339. I.F.: 3.173

18. Gil-Rodrigo A, Miró Ò, Piñera P, Burillo-Putze G, Jiménez S, Martín A, Martín-Sánchez FJ, Jacob J, Guardiola JM, García-Lamberechts EJ, Espinosa B, Martín Mojarro E, González Tejera M, Serrano L, Agüera C, Soy E, Llauger L, Juan MÁ, Palau A, Del Arco C, Rodríguez Miranda B, Maza Vera MT, Martín Quirós A, Tejada de Los Santos L, Ruiz de Lobera N, Iglesias Vela M, Torres Garate R, Alquézar-Arbé A, González Del Castillo J, Llorens P, en representación de la red de investigación SIESTA. **Analysis of clinical characteristics and outcomes in patients with COVID-19 based on a series of 1000 patients treated in Spanish emergency departments.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(4):233-241. I.F.: 3.173

19. Alquezar-Arbe, Aitor; Pinera, Pascual; Jacob, Javier; Martin, Alfonso; Jimenez, Sonia; Llorens, Pere; Javier Martin-Sanchez, Francisco; Burillo-Putze, Guillermo; Jorge Garcia-Lamberechts, Eric; Gonzalez del Castillo, Juan; Rizzi, Miguel; Agudo Villa, Teresa; Haro, Antoni; Martin Diaz, Natalia; Miro, Oscar. **Impact of the COVID-19 pandemic on hospital emergency departments: results of a survey of departments in 2020-the Spanish ENCOVUR study.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(5):320-331. I.F.: 3.173

20. Jiménez Hernández S, Lozano Polo L, Suñen Cuquerella G, Peña Pardo B, Espinosa B, Cardozo C, Aguirre Tejedo A, Llorens Soriano P, Miró Ò. **Clinical findings, risk factors, and final outcome in patients diagnosed with pulmonary thromboembolism and COVID-19 in hospital emergency departments.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(4):253-257. I.F.: 3.173

21. Amigó-Tadín M; Pané-Vila A; Nogué-Xarau S. **Blood glucose level after infusing an activated charcoal suspension for acute drug poisoning.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(3):185-187. I.F.: 3.173

22. Yuguero-Torres, Oriol; Jesus Lopez, Maria; Cortes, Emilia; Boque, Carme; Navarra, Montse; Jimenez, Sonia. **Palliative sedation and mortality in emergency departments: descriptive study of cases in the MORCAT registry.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(2):118-121. I.F.: 3.173

23. Martínez-Nadal G; Prepoudis A; Miró Ò; Matas A; Cepas P; Aldea A; Izquierdo M; Viladot JRA; Flores D; Gualandro DM; Müller C; López-Barbeito B. **Clinical features of pericarditis with and without myocardial involvement diagnosed in the emergency department and factors associated with need for hospitalization.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(2):97-104. I.F.: 3.173

24. Escalada X; Sánchez P; Hernández R; Gené E; Jacob J; Alonso G; Rimbau P; Zorrilla J; Casarramona F; Netto C; Flores S; Puig M; Villamor A; Sánchez M; Miró Ò. **Prehospital emergency services in Catalonia: the SEPHCAT analysis.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias*32(2):90-96. I.F.: 3.173

25. Miró Ò; Martínez-Nadal G; Jiménez S; Gómez-Angelats E; Alonso JR; Antolín A; Salgado E; Perelló R; Gualandro DM; Strebel I; López-Ayala P; Rosselló X; Bragulat E; Sánchez M; Müller C; López-Barbeito B. **Nontraumatic chest pain and suspicion of acute coronary syndrome: associated clinical and electrocardiographic findings on initial evaluation.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(1):9-18. I.F.: 3.173

26. Beatriz López Barbeito; Ana García Martínez; Blanca Coll Vinent; Arrate Placer; Carme Font Puig; Carmen Rosa Vargas; Carolina Sánchez Gómez; Daniela Piñango; Elisenda Gómez Angelats; David Curtelín Pérez; Emilio Salgado; Francisco Aya; Gemma Martínez Nadal; José Ramón Alonso Viladot; Julia García Gozalbes; Leticia Fresco; Miguel Galicia Paredes; Milagrosa Perea; Míriam Carbó; Nerea Iniesta; Ona Escoda;

Rafael Perelló Carbonell; Sandra Cuerpo; Vanesa Flores; Francesc Xavier Alemany; Óscar Miró Andreu; Mar Ortega Romero. **Factors associated with revisits by patients with SARS-CoV-2 infection discharged from a hospital emergency department.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(6):386-394. I.F.: 3.173

27. Inés María Fernández Guerrero; Alba María Ruiz Allende; Luis Contreras Briones; Concepción Moll Tudurí; Francisco Javier Martín Sánchez; Óscar Miró Andreu. **Emergency medicine questions on the entrance examination for medical internships and residency training in Spain: analysis of changes between 2010 and 2019.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(6):403-408. I.F.: 3.173

28. Nogué-Xarau S; Amigó-Tadín M. **Activated charcoal dose in acute drug poisoning.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(3):210-211. I.F.: 3.173

29. Carbo, Miriam; Fresco, Leticia; Osorio, Gina; Monclus, Ester; Ortega, Mar. **Predictors of mortality in emergency department patients with sepsis scored 2 or 3 on the Quick Sequential Organ Failure Assessment scale.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(3):169-176. I.F.: 3.173

30. Carriel Mancilla J, Jiménez Hernández S, Martín-Sánchez FJ, Jiménez D, Fuentes Ferrer M, Ruiz-Artacho P, Grupo de Enfermedad Tromboembólica Venosa de la Sociedad Española de Medicinade Urgencias y Emergencias (ETV-SEMES). **Clinical characteristics and course in emergency department patients with chronic obstructive pulmonary disease and symptomatic acute venous thromboembolic disease: secondary analysis of the ESPHERIA registry.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(1):40-44. I.F.: 3.173

31. Gómez Calderón MI, Monforte Castro S, Castellà Kastner M, Nogué Xarau S. **Use and cost of antidotes for acute poisoning in a hospital emergency department.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias* 32(2):140-141. I.F.: 3.173

32. Freund Y, Drogrey M, Miró Ò, Marra A, Féral-Pierssens AL, Penaloza A, Hernandez BAL, Beaune S, Gorlicki J, Vaittinada Ayar P, Truchot J, Pena B, Aguirre A, Fémy F, Javaud N, Chauvin A, Chouihed T, Montassier E, Claret PG, Occelli C, Roussel M, Brigant F, Ellouze S, Le Borgne P, Laribi S, Simon T, Lucidarme O, Cachanado M, Bloom B, IMPROVING EMERGENCY CARE FHU Collaborators. **Association between Pulmonary Embolism and COVID-19 in ED patients Undergoing CTPA: the PEPCOV international retrospective study.** *Academic emergency Medicine.* 27(9):811-820. I.F.: 3.064

33. González González R, Jacob J, Miró Ò, Llorens P, Jiménez S, González Del Castillo J, Burillo-Putze G, Martín A, Martín-Sánchez FJ, Lamberechts JG, Alquézar-Arbé A, Higa-Sansone L, Gayoso Martín S, Carbajosa V, Beddar Chaib F, Salido M, Marchena González MJ, Calvo López R, González Martínez F, Pavón Monzo J, Velarde Herrera DM, Niembro Valdés AP, Quero Motto E, Ferreras Amez JM, Piñera-Salmerón P, Spanish Investigators on Emergency Situations TeAm (SIESTA) Network. **Incidence, Clinical Characteristics, Risk Factors, and Outcomes of Upper Gastrointestinal Bleeding in Patients With COVID-19: Results of the UMC-19-S12.** *Journal Of Clinical Gastroenterology.* I.F.: 2.973

34. Jacob J, Miró Ò, Ferre C, Borraz-Ordás C, Llopis-García G, Comabella R, Fernández-Cañadas JM, Mercado A, Roset A, Richard-Espiga F, Valero-Domènech A, Martínez-Gimeno JL, Martín-Sánchez FJ, Llorens P, Berrocal-Gil P, Pérez-Durá MJ, Álvarez-Pérez JM, López-Díez P, Herrero-Puente P, Comín-Colet J. **Iron deficiency and safety of ferric carboxymaltose in patients with acute heart failure.** *International Journal Of Clinical Practice.* 74(10):e13584. I.F.: 2.444

35. Martín-Sánchez FJ, Llopis García G, González-Colaço Harmand M, Fernandez Pérez C, González Del Castillo J, Llorens P, Herrero P, Jacob J, Gil V, Domínguez-Rodriguez A, Rossello X, Miró O, en representación de los investigadores del Registro OAK, Resto de investigadores del registro OAK. **Identification of Senior At Risk scale predicts 30-day mortality among older patients with acute heart failure.** *Medicina Intensiva.* 44(1):9-17. I.F.: 2.363

36. Mir AS; Nogué Xarau S; Alcaraz Peñarrocha RM; Morán Chorro I; Montero Clavero FJ; Palomar Martínez M; Grupo de trabajo de Toxicología de la SEMICYUC y participantes en EMPIUCI 13-14. **Evolution of poisoned patients admitted to Spanish intensive care units: Comparing two periods.** *Medicina Intensiva.* S0210-5691(20):30185-6. I.F.: 2.363

37. Takagi K, Miró Ò, Gayat E, Llorens P, Wussler DN, Čerlinskaitė K, Msolli MA, Kavoliūnienė A, Sekma A, Čelutkienė J, Nouira S, Gil V, Martínez-Nadal G, Breidthardt T, Kozhuharov N, Martin J, Müller C, Mebazaa A. **Safety of diuretic administration during the early management of dyspnea patients who are not finally diagnosed with acute heart failure.** *European Journal of Emergency Medicine.* 27(6):422-428. I.F.: 2.170

38. Miró Ò, Llorens P, Jiménez S, Piñera P, Burillo-Putze G, Martín A, Martín-Sánchez FJ, González Del Castillo J, Spanish Investigators in Emergency Situations TeAm (SIESTA) network. **Frequency of five unusual presentations in patients with COVID-19: Results of the UMC-19-S1.** *Epidemiology And Infection.* 148(e189). I.F.: 2.152

39. Philippon, Anne-Laure; Dumont, Margaux; Jimenez, Sonia; Salhi, Sarah; Cachanado, Marine; Durand-Zaleski, Isabelle; Simon, Tabassome; Freund, Yonathan. **MOdified DIagnostic strateGy to safely ruLe-out pulmonary embolism In the emergency depArtment: study protocol for the Non-Inferiority MODIGLIANI cluster cross-over randomized trial.** *Trials.* 21(1):458. I.F.: 1.883

40. Martínez-Sánchez L; Ferrés-Padró V; Martínez-Millán D; Fernández-Calabria C; Amigó-Tadín M; Jiménez-Fàbrega FX; Nogué-Xarau S. **Prehospital emergency care of patients exposed to poisoning: Assessment of epidemiological, clinical characteristics and quality of care.** *Anales de Pediatria.* 92(1):37-45. I.F.: 1.313

41. Martínez-Sánchez L, Aguilar-Salmerón R, Pi-Sala N, Gispert-Ametller MÀ, García-Peláez M, Broto-Sumalla A, Fernández de Gamarra-Martínez E, Nogué-Xarau S. **[Availability in Spain of "one pill killers" and other highly toxic drugs in infants].** *Anales de Pediatria* 93(6):380-395. I.F.: 1.313

42. Osorio G, Fresco L, Monclús E, Carbó M, Ortega M. **[Adequacy of the special category antibiotics prescriptions in the Emergency Department of a third level urban Hospital].** *Revista Espanol de Quimioterapia.* 33(1):24-31. I.F.: 1.132

Review / I.F.: 3.173

1. Miró Ò, Rossello X, Platz E, Masip J, Gualandro DM, Peacock WF, Price S, Cullen L, DiSomma S, de Oliveira MT Jr, McMurray JJ, Martín-Sánchez FJ, Maisel AS, Vrints C, Cowie MR, Bueno H, Mebazaa A, Mueller C; Study Group on Acute Heart Failure of the Acute Cardiovascular Care Association of the European Society of Cardiology. **Risk stratification scores for patients with acute heart failure in the Emergency Department: A systematic review.** *European Heart Journal-acute Cardiovascular Care.* 9(5):375-398. I.F.: 3.813

2. Miró Ò, González Del Castillo J . **Collaboration among Spanish emergency departments to promote research: on the creation of the SIESTA (Spanish Investigators in Emergency Situations TeAm) network and the coordination of the UMC-19 (Unusual Manifestations of COVID-19) macroproject.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(4):269-277. I.F.: 3.173

Letters / I.F.: 84.878

1. Vinson DR; Kea B; Coll-Vinent B; Barrett TW. **Emergency department cardioversion of acute atrial fibrillation.** *Lancet.* 396. I.F.: 60.390

2. Miró Ò; Takagi K; Llorens P; Mebazaa A. **Reply: Corticosteroids Use During Heart Failure Decompensations**. *JACC-Heart Failure.* 8(2):154-155. I.F.: 9.140

3. Miró, Oscar; Dargan, Paul I; Galicia, Miguel; Anand, Jacek Sein; Bonnici, Jeffrey; Caganova, Blazena; Dines, Alison M; Eyer, Florian; Giraudon, Isabelle; Heyerdahl, Fridtjof; Jurgens, Gesche; Kabata, Piotr Maciej; Liakoni, Evangelia; Liechti, Matthias E; Megarbane, Bruno; Moughty, Adrian; O'Connor, Niall; Paasma, Raido; Persett, Per Sverre; Pold, Kristiina; Radenkova-Saeva, Julia; Scholz, Irene; Vallersnes, Odd Martin; Waring, W Stephen; Wood, David M; Yates, Christopher; Zacharov, Sergej;Euro-DEN Plus Res Grp. **Authors' reply to comment on Epidemiology, clinical features and management of patients presenting to European emergency departments with acute cocaine toxicity: comparison between powder cocaine and crack cocaine cases.** *Clinical Toxicology.* 58(1):72-74. I.F.: 3.659

4. Óscar Miró Andreu; Pedro López Ayala; Ivo Strebel. **Respecto a la comparación de dos estimaciones mediante el uso de sus intervalos de confianza**. *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(6):447-448. I.F.: 3.173

5. Cepas-Guillén PL, Pujol-López M, San Antonio R, Arbelo E, Salgado E, Brugada J. **Brugada syndrome, Brugada phenocopy, or simply arrythmia induced by cocaine intoxication?** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(1):72-74. I.F.: 3.173

6. Puiguriguer-Ferrando, Jordi; Salgado-Garcia, Emilio; Nogue-Xarau, Santiago. **Emergency-department-treated poisonings during home confinement for the COVID-19 pandemic.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(4):300-301. I.F.: 3.173

7. Ortega, Mar. **Feminization of Emergency Medicine in Europe in the 21st century.** *European Journal of Emergency Medicine.* 27(3):167-168. I.F.: 2.170

Editorial / I.F.: 22.364

1. Miró Ò, Gil V, Llorens P. **Key decision-making around hospitalization in patients with acute heart failure.** *European Journal of Internal Medicine.* 75:102-104. I.F.: 4.329

2. Miró Ò. **Message from a mundane virus to a mundus homanis.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(3):149-151.I.F.:3.173

3. Galicia, Miguel. **Acute adverse effects of synthetic drugs: beginning to understand the magnitude of the problem in Spain.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(1):7-8. I.F.: 3.173

4. Miró Ò. **EMERGENCIAS 2020-and beyond.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(1):1-2. I.F.: 3.173

5. Sanchez Sanchez, Miguel. **Passion for football - and the hospital emergency department.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(5):309-310. I.F.: 3.173

6. Óscar Miró Andreu. **Emergencias: 10 years with an impact factor.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(5):305-306. I.F.: 3.173

7. Miró Ò. **COVID-19: one threat, one world, one response (magical thinking).** *European Journal Of Emergency Medicine.* 27(3):165-166. I.F.: 2.170

Clinical Guidelines / I.F.: 26.427

1. Harjola VP, Parissis J, Bauersachs J, Brunner-La Rocca HP, Bueno H, Čelutkienė J, Chioncel O, Coats AJS, Collins SP, de Boer RA, Filippatos G, Gayat E, Hill L, Laine M, Lassus J, Lommi J, Masip J, Mebazaa A, Metra M, Miró Ò, Mortara A, Mueller C, Mullens W, Peacock WF, Pentikäinen M, Piepoli MF, Polyzogopoulou E, Rudiger A, Ruschitzka F, Seferovic P, Sionis A, Teerlink JR, Thum T, Varpula M, Weinstein JM, Yilmaz MB. **Acute coronary syndromes and acute heart failure: a diagnostic dilemma and high-risk combination.** *European Journal of Heart Failure.* 22(8):1298-1314. I.F.: 11.627

2. Chioncel O, Parissis J, Mebazaa A, Thiele H, Desch S, Bauersachs J, Harjola VP, Antohi EL, Arrigo M, Gal TB, Celutkiene J, Collins SP, DeBacker D, Iliescu VA, Jankowska E, Jaarsma T, Keramida K, Lainscak M, Lund LH, Lyon AR, Masip J, Metra M, Miro O, Mortara A, Mueller C, Mullens W, Nikolaou M, Piepoli M, Price S, Rosano G, Vieillard-Baron A, Weinstein JM, Anker SD, Filippatos G, Ruschitzka F, Coats AJS, Seferovic P . **Epidemiology, Pathophysiology and Contemporary Management of Cardiogenic Shock - A position statement from the Heart Failure Association (HFA) of the European Society of Cardiology (ESC).** *European Journal of Heart Failure*22(8):1315-1341. I.F.: 11.627

3. González Del Castillo J; Burillo-Putze G; Cabello A; Curran A; Saavedra EJ; Malchair P; Marchena MJ; Miró Ò; Pizarro A; Sotomayor C; Candel FJ; Moreno S. **Recommendations for the early diagnosis of suspected human**

immunodeficiency virus infection in the emergency department and the referral of patients for follow-up: a consensus statement of the Spanish Society of Emergency Medicine (SEMES). *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(6):416-426. I.F.: 3.173

Consortium Publications / I.F.: 36.336

1. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

2. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

3. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

4. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group**: SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals Of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

GRANTS FOR RESEARCH IN PROGRESS

Aguiló S, Pomar J. **Detección precoz de vulnerabilidad al trastorno de estrés postraumático en poblaciones altamanente expuestas al COVID-19.**
Sponsored by: Universitat Autònoma de Barcelona (UAB).
SANTANDER_COVID20_02
Duration: 01/07/2020-30/06/2021

Alonso JR. **International impact of TALK©: a simple and practical approach to multi-professional structured feedback and debriefing, to be used after unplanned learning events in clinical environments.**
Sponsored by: European Commission.
CE_H2020_MSCA_RISE16
Duration: 01/06/2017-31/05/2021

Miró O. **Identificació a urgències dels pacients amb insuficiència cardiaca aguda de baix risc i desenvolupament d'una escala per identificar-los i millorar l'evolució dels que són donats d'alta des d'urgències.**
Sponsored by: Fundació La Marató de TV3.
Cor_15
Duration: 09/03/2016-31/12/2020

Miró O. **Diseño de programas de intervención y escalas de riesgo con marcadores y biológicos de fragilidad para la insuficiencia cardiaca aguda en los servicios de urgencia españoles.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/01019
Duration: 01/01/2016-30/11/2020

Miró O. **Evaluación de la capacidad de la escala MEESSI-AHF para mejorar la toma de decisión y el pronóstico en pacientes diagnosticados de insuficiencia cardíaca aguda en urgencias: Estudio observacional, cuasiexperimental y ensayo clínico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00393
Duration: 01/01/2019-31/12/2021

DOCTORAL THESES

Miro Ò, Llorens P. **Análisis de los perfiles clínicos, hemodinámicos, ecocardiográficos y factores pronóstico en pacientes con insuficiencia cardiaca aguda atendidos en los servicios de urgencias.**
PhD student: Patricia Javaloyes Victoria

Miró O, J. **Paper de la funció renal en el pronòstic dels pacientsdiagnosticats d'insuficiència cardíaca aguda en els serveis d'urgències: anàlisi multidimensional.**
PhD student: Lluís Llauger Garcia

1.10 Infections in solid-organ transplant recipients

LOCATION
HCB building

KEYWORDS
1. **HIV**
2. **AIDS**
3. **Endocarditis**
4. **Nosocomial infections**
5. **Immune suppressed patients**

RELATED DISEASES
1. **Infections in transplant patients**
2. **Donor-to-recipient transmitted infections**
3. **Recipient antibiotic prophylaxis**
4. **Preventive measures**
5. **Innate and adaptive immunity**
6. **Epidemiology of infections**

GROUP INVOLVED IN
REIPI
RIS

Original publications

TOTAL	8
IF	42,89
Mean IF	5,36
Q1	100%
D1	50%
MA	0%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Asunción Moreno (HCB)
T. 93 227 54 00 (Ext.: 2657)
amoreno@clinic.cat

RESEARCHERS
Marta Bodro (HCB)

ASSISTANT RESEARCHERS
Frederic Cofan (HCB)

POST-DOCTORAL RESEARCHERS
Sabina Herrera (IDIBAPS)
Laura Linares (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
David Paredes (HCB)

PROBLEM

Transplant patients require immunosuppressive treatment to prevent graft rejection. However, this causes immunodepression (lowering of defences), which makes the patient more prone to infections.

For this reason, it is very important to be familiar with the most common infections and prevent them using antimicrobial and other prophylactic measures.

Infections differ over time, and so specialists must know how to request the pertinent tests and apply the most appropriate treatment in order to reduce patient morbidity and mortality.

APPROACH

The group is made up of specialists in infectious diseases, microbiology, immunology, as well as experts in diverse organ specialities (nephrology, gastroenterology, cardiology, endocrinology and surgery, among others) and in transplant coordination. Almost fifty per cent of transplant patients will develop an infection during the postoperative phase.

The group's objective is to reduce the number of infections and minimise their severity, and to achieve this they develop and apply prophylactic, diagnostic and antimicrobial therapy protocols.

IMPACT

These preventive, diagnostic and therapeutic measures have a positive effect on the solid-organ transplant population and on immunosuppressed patients. Antimicrobial prophylaxis and other prevention measures are applied and developed (vaccines, colonisation by multi-drug resistant bacteria, etc.).

Protocols are applied for the study and early detection of diverse infections, as are highly effective antimicrobial treatment guidelines for use in opportunistic and nosocomial (hospital-acquired) infections. In addition, isolation measures are applied in cases when the micro-organism detected makes this necessary.

Many of the results of the studies published by the group in biomedical journals have been included in national and international clinical practice guidelines.

RESEARCH LINES

- Epidemiological evolution of pulmonary infections in immunosuppressed patients (SOT, HIV, others).

- Evolution of the epidemiology of infection in SOT (including HIV-infected patients and donors) and role of the immunosuppressors. Evaluation of the sensitivity and specificity of diagnostic techniques and biological markers and prognostic factors of oppor.

- Multicenter research projects within the reipi. Clinical trials in the area of infections in SOT recipients.

- Role of innate and adaptive immunity (including genetic markers) in the risk of infections in SOT.

PUBLICATIONS

Originals / I.F.: 42.886

1. Fernández-Ruiz M, Seron D, Alonso Á, Lora D, Hernández D, González E, Pérez-Sáez MJ, Gómez G, Pallardó-Mateu LM, Jimeno-García L, Cofán F, Gutierrez-Dalmau A, Ruiz JC, Ramírez-Puga A, Santana Estupiñán R, Marcén R, Portolés JM, Muñoz-Cepeda MÁ, López-Medrano F, San Juan R, Andrés A, Aguado JM, Spanish Network for Research in Infectious Diseases (REIPI RD16/0016) and Spanish Network for Research in Renal Diseases (REDinREN RD16/0009). **Derivation and external validation of the SIMPLICITY Score as a simple immune-based risk score to predict infection in kidney transplant recipients.** *Kidney International.* 98(4):1031-1043. I.F.: 8.945

2. Orihuela-Martín J, Rodríguez-Núñez O, Morata L, Cardozo C, Puerta-Alcalde P, Hernández-Meneses M, Ambrosioni J, Linares L, Bodro M, de Los Angeles Guerrero-León M, Del Río A, Garcia-Vidal C, Almela M, Pitart C, Marco F, Soriano A, Martínez JA. **Performance of differential time to positivity as a routine diagnostic test for catheter-related bloodstream infections: a single centre experience.** *Clinical Microbiology And Infection.* 26(3):303-e1-383.e7. I.F.: 7.117

3. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combinations are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis.** *Journal Of Antimicrobial Chemotherapy.* 75(12):3586-3592. I.F.: 5.439

4. Cordero E; Bulnes-Ramos A; Aguilar-Guisado M; González Escribano F; Olivas I; Torre-Cisneros J; Gavaldá J; Aydillo T; Moreno A; Montejo M; Fariñas MC; Carratalá J; Muñoz P; Blanes M; Fortún J; Suárez-Benjumea A; López-Medrano F; Roca C; Lara R; Pérez-Romero P. **Effect of Influenza Vaccination Inducing Antibody Mediated Rejection in Solid Organ Transplant Recipients.** *Frontiers In Immunology.* 11:1917. I.F.: 5.085

5. Pericàs JM; Cervera C; Garcia-de-la-Mària C; Sharma-Kuinkel BK; Gonzales R; Moreno A; Almela M; Falces C; Quintana E; Fuster D; Marco F; Bayer AS; Fowler VG; Miró JM. **Relationship between Vancomycin MIC and Virulence Gene Expression in Clonal Complexes of Methicillin-Susceptible Staphylococcus aureus Strains Isolated from Left-Sided Endocarditis.** *Antimicrobial Agents And Chemotherapy.* 64(3):e01579-19. I.F.: 4.904

6. Cucchiari D, Molina-Andujar A, Montagud-Marrahi E, Revuelta I, Rovira J, Ventura-Aguiar P, Piñeiro GJ, De Sousa-Amorim E, Esforzado N, Cofán F, Torregrosa JV, Ugalde-Altamirano J, Ricart MJ, Centellas-Pérez FJ, Solè M, Martorell J, Ríos J, Campistol JM, Diekmann F, Oppenheimer F . **Use of de-novo mtor inhibitors in hypersensitzed kidney trasplant recipients: experience from clinical practice.** *Transplantation.* 104(8):1686-1694. I.F.: 4.546

7. Cucchiari D; Ríos J; Molina-Andujar A; Montagud-Marrahi E; Revuelta I; Ventura-Aguiar P; Piñeiro GJ; De Sousa-Amorim E; Esforzado N; Cofán F; Torregrosa JV; Ugalde-Altamirano J; Ricart MJ; Rovira J; Torres F; Solè M; Campistol JM; Diekmann F; Oppenheimer F. **Combination of calcineurin and mTOR inhibitors in kidney transplantation: a propensity score analysis based on current clinical practice.** *Journal Of Nephrology.* 33(3):601-610. I.F.: 3.484

8. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal Of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

Review / I.F.: 25.935

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

2. Len O; Los-Arcos I; Aguado JM; Blanes M; Bodro M; Carratalà J; Cordero E; Fariñas MC; Fernández-Ruiz M; Fortún J; Gavaldà J; López-Medrano F; López-Vélez R; Lumbreras C; Mahillo B; Marcos MÁ; Martin-Dávila P; Montejo JM; Moreno A; Muñoz P; Norman F; Pérez-Sáenz JL; Pumarola T; Sabé N; San-Juan R; Vidal E; Domínguez-Gil B. **Selection criteria of solid organ donors in relation to infectious diseases: A Spanish consensus.** *Transplantation Reviews.* 34(2):100528. I.F.: 3.262

Letters / I.F.: 7.338

1. Montagud-Marrahi E, Cofan F, Torregrosa JV, Cucchiari D, Ventura-Aguiar P, Revuelta I, Bodro M, Piñeiro GJ, Esforzado N, Ugalde J, Guillén E, Rodríguez-Espinosa D, Campistol JM, Oppenheimer F, Moreno A, Diekmann F . **Preliminary data on outcomes of SARS-CoV-2 infection in a Spanish single centre cohort of kidney recipients.** *American Journal Of Transplantation.* 20(10):2958-2959. I.F.: 7.338

Case Reports / I.F.: 7.338

1. Guillen E; Pineiro GJ; Revuelta I; Rodriguez D; Bodro M; Moreno A; Campistol JM; Diekmann F; Ventura-Aguiar P. **Case report of COVID-19 in a kidney transplant recipient: Does immunosuppression alter the clinical presentation?** *American Journal Of Transplantation.* 20(7):1875-1878. I.F.: 7.338

Clinical Guidelines / I.F.: 1.654

1. Len O; Los-Arcos I; Aguado J; Blanes M; Bodro M; Carratalà J; Cordero E; Fariñas M; Fernández-Ruiz M; Fortún J; Gavaldà J; López-Medrano F; López-Vélez R; Lumbreras C; Mahillo B; Marcos M; Martin-Dávila P; Montejo J; Moreno A; Muñoz P; Norman F; Pérez-Sáenz J; Pumarola T; Sabé N;

San-Juan R; Vidal E; Domínguez-Gil B. **Executive summary of the Consensus Statement of the Transplant Infection Study Group (GESITRA) of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC) and the National Transplant Organization (ONT) on the Selection Criteria of Donors of Solid Organs in relation to Infectious Diseases [Resumen ejecutivo de la Declaración de consenso del Grupo de Estudio de la Infección en el Trasplante (GESITRA) de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC) y la Organización Nacional de Trasplantes (ONT) sobre los criterios de selección de donantes de órganos sólidos en relación con las enfermedades infecciosas].** *Enfermedades Infecciosas y Microbiología Clínica.* 38(8):379-389. I.F.: 1.654

Consortium Publications / I.F.: 27.631

1. Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, Miró JM, GAMES Investigators. **A Contemporary Picture of Enterococcal Endocarditis.** *Journal Of The American College Of Cardiology.* 75(5):482-494. I.F.: 20.589

2. Inciarte, A; Leal, L; Masfarre, L; Gonzalez, E; Diaz-Brito, V; Lucero, C; Garcia-Pindado, J; Leon, A; Garcia, F; Sexual Assault Victims Study Grp. **Post-exposure prophylaxis for HIV infection in sexual assault victims.** *HIV Medicine.* 21(1):43-52. I.F.: 3.556

3. Varela Barca L, Fernández-Felix BM, Navas Elorza E, Mestres CA, Muñoz P, Cuerpo-Caballero G, Rodríguez-Abella H, Montejo-Baranda M, Rodríguez-Álvarez R, Gutiérrez Díez F, Goenaga MA, Quintana E, Ojeda-Burgos G, de Alarcón A, Vidal-Bonet L, Centella Hernández T, López-Menéndez J, Spanish Collaboration on Endocarditis-Grupo de Apoyo al Manejo de la Endocarditis infecciosa en ESpaña (GAMES). **Prognostic assessment of valvular surgery in active infective endocarditis: multicentric nationwide validation of a new score developed from a meta-analysis.** *European Journal Of Cardio-Thoracic Surgery.* 57(4):724-731. I.F.: 3.486

GRANTS FOR RESEARCH IN PROGRESS

Bodro M. **Utilidad de la prueba elispot-bkv para predecir el riesgo de desarrollar nefropatía por virus bk en receptores de riñón. Estudio multicéntrico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00608
Duration: 01/01/2020-31/12/2022

1.11 Inflammatory joint diseases (IJDs)

LOCATION
HCB building

KEYWORDS
1. **Rheumatoid arthritis**
2. **Psoriatic arthritis**
3. **Pathogenesis**
4. **Biomarkers**
5. **Targeted therapies**
6. **Synovial immunopathology**

RELATED DISEASES
1. **Rheumatoid arthritis**
2. **Psoriatic arthritis**
3. **Spondyloarthritis**
4. **Palindromic rheumatism**

GROUP INVOLVED IN
RIER

Original publications

TOTAL	15
IF	**74,77**
Mean IF	**4,98**
Q1	**47%**
D1	**13%**
MA	**40%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Raimon Sanmartí (HCB)
T. 93 227 54 00 (Ext.: 2236/2604)
sanmarti@clinic.cat

RESEARCHERS
Juan de Dios Cañete (HCB)

ASSISTANT RESEARCHERS
Jose Alfredo Gómez Puerta (HCB)

POST-DOCTORAL RESEARCHERS
Maria Raquel Celis (FCRB)
Rosa Morlà (HCB)
Felipe Julio Ramírez (HCB)
Virginia Ruiz Esquide (HCB)

PRE-DOCTORAL RESEARCHERS
Raul Antonio Castellanos (HCB)

PROBLEM

The various forms of chronic arthritis (rheumatoid arthritis, psoriatic arthritis and, spondylarthritis) affect nearly 2% of the population. They have a major social and health impact, due to the incapacity and loss of quality of life that they can cause.

Although there are currently no effective treatments that cure them, in recent years the mechanisms that cause inflammation and the destruction of the joints have become better known, and new drugs and therapeutic targets have been developed. However, not all patients respond favourably, so the challenge remains: new treatments and new biomarkers need to be developed to be able to treat each person with the most appropriate therapy.

APPROACH

This research group aims to increase its knowledge of the different prognostic factors that can determine a better evolution of arthritis and which treatment can be most effective for each patient.

It studies biomarkers present in the blood of patients with arthritis at the initial stages of the disease (especially autoantibodies) and is a pioneer in the field of immunopathological study of the synovial membrane in different forms of arthritis, including those that do not have an initial diagnosis, in order to improve the diagnostic and prognostic process.

The group also participates in strategic studies working towards the advancement of personalised medicine.

IMPACT

The group's objectives are to improve the diagnosis of rheumatoid arthritis, gain insight into the immune mechanisms involved, and identify biomarkers that could help to obtain a personalised therapy.

To do this, research is carried out in collaboration with other European groups. It is making advances in identifying individuals at risk of rheumatoid arthritis with a view to conducting clinical trials for therapies that regulate the adaptive immune response and thus prevent the onset of the disease.

RESEARCH LINES

- Clinical and sonographic characterization of clinical remission.

- Immunopathology of synovitis in chronic arthritis.

-Autoantibodies in rheumatois arthritis.

-Arthritis induced by immunotherapy.

-Arthritis in systemic autoimmune diseases.

- Pharmacogenomics of chronic arthritis.

- Prognostic factors in early arthritis.

- The gut-joint axis in rheumatoid arthritis patients: role of microbiota-induced intestinal t follicular helper cells and innate immune cells in the pathogenesis of the disease.

PUBLICATIONS

Originals / I.F.: 74.774

1. Castellanos-Moreira R; Rodríguez-García SC; Gomara MJ; Ruiz-Esquide V; Cuervo A; Casafont-Solé I; Ramírez J; Holgado S; Gómez-Puerta JA; Cañete JD; Haro I; Sanmarti R. **Anti-carbamylated proteins antibody repertoire in rheumatoid arthritis: Evidence of a new autoantibody linked to interstitial lung disease.** *Annals of the Rheumatic Diseases.* 79(5):587-594. I.F.: 16.102

2. Tajik N; Frech M; Schulz O; Schälter F; Lucas S; Azizov V; Dürholz K; Steffen F; Omata Y; Rings A; Bertog M; Rizzo A; Iljazovic A; Basic M; Kleyer A; Culemann S; Krönke G; Luo Y; Überla K; Gaipl US; Frey B; Strowig T; Sarter K; Bischoff SC; Wirtz S; Cañete JD; Ciccia F; Schett G; Zaiss MM. **Targeting zonulin and intestinal epithelial barrier function to prevent onset of arthritis.** *Nature Communications.* 11(1):1995. I.F.: 12.121

3. Florez H, Hernández-Rodríguez J, Muxi A, Carrasco JL, Prieto-González S, Cid MC, Espinosa G, Gómez-Puerta JA, Monegal A, Guañabens N, Peris P. **Trabecular bone score improves fracture risk assessment in glucocorticoid-induced osteoporosis.** *Rheumatology.* 59(7):1574-1580. I.F.: 5.606

4. Castellanos-Moreira R, Rodriguez-Garcia SC, Cabrera-Villalba S, Gomara MJ, Salvador G, Ruiz-Esquide V, Ramirez J, Inciarte-Mundo J, Morla R, Garcia-Moreno C, Cuervo A, Gómez-Puerta JA, Cañete JD, Haro I, Sanmarti R. **Anti-carbamylated protein antibody isotype pattern differs between palindromic rheumatism and rheumatoid arthritis.** *Therapeutic Advances In Musculoskeletal Disease.* 12(1759720X20978139). I.F.: 5.043

5. Julià A, Ávila G, Celis R, Sanmartí R, Ramírez J, Marsal S, Cañete JD . **Lower peripheral helper T cell levels in the synovium are associated with a better response to anti-TNF therapy in rheumatoid arthritis.** *Arthritis Research & Therapy.* 22(1):196. I.F.: 4.103

6. Queiro R, Cañete JD, Montoro M, Gómez S, Cábez A, MAAPS study group. **Disease features associated with a low disease impact in patients with psoriatic arthritis: Results of a cross-sectional multicenter study.** *Arthritis Research & Therapy.* 22(1):82. I.F.: 4.103

7. Combe B, Rahman P, Kameda H, Cañete JD, Gallo G, Agada N, Xu W, Genovese MC . **Safety results of ixekizumab with 1822.** *Arthritis Research & Therapy.* 22(1):14. I.F.: 4.103

8. Palominos PE; Coates L; Kohem CL; Orbai AM; Smolen J; de Wit M; Kiltz U; Leung YY; Cañete JD; Scrivo R; Balanescu A; Dernis E; Meisalu S; Soubrier M; Aydin SZ; Gaydukova I; Kalyoncu U; Gossec L. **Determinants of sleep impairment in psoriatic arthritis: An observational study with 396 patients from 14 countries.** *Joint Bone Spine.* 87(5):449-454. I.F.: 3.741

9. Lubrano E, Scriffignano S, Azuaga AB, Ramirez J, Cañete JD, Perrotta FM. **Impact of Comorbidities on Disease Activity, Patient Global Assessment, and Function in Psoriatic Arthritis: A Cross-Sectional Study.** *Rheumatol Ther.* 7(4):825-836. I.F.: 3.615

10. Castellanos-Moreira R, Rodriguez-Garcia SC, Gómez-Puerta JA, Ruiz-Esquide V, Camacho O, Ramírez J, Cuervo A, Morlà R, Cañete JD, Haro I, Sanmarti R. **Rheumatoid Arthritis Initiating as Palindromic Rheumatism: A Distinct Clinical Phenotype?** *Journal Of Rheumatology.* 47(5):652-657. I.F.: 3.350

11. Cañete JD, Nolla JM, Queiro R, Rodríguez MJ, Ruiz M, Lizán L, MERECES Working Group. **Expert consensus on a set of outcomes to assess the effectiveness of biologic treatment in psoriatic arthritis: the MERECES study.** *Journal Of Rheumatology.* 47(11):1637-1643. I.F.: 3.350

12. Bastida C; Huitema ADR; I'Ami MJ; Ruiz-Esquide V; Wolbink GJ; Sanmartí R; Soy D. **Evaluation of dose-tapering strategies for intravenous tocilizumab in rheumatoid arthritis patients using model-based pharmacokinetic/pharmacodynamic simulations.** *European Journal of Clinical Pharmacology.* 76(10):1417-1425. I.F.: 2.641

13. Azuaga AB, Frade-Sosa B, Laiz A, Estrada P, Prior-Español A, Horcada L, Polino L, Moreno M, Moragues C, Urruticoechea-Arana A, Sellas A, Tandaipan JL, Torrente-Segarra V, Garcia-Miguel J, Ros I, Ordoñez S, Moya P, Reina D, Mateo-Soria L, Fito C, Beltrán E, Pujol M, Cuervo AM, Cañete JD, Ramírez J, ESPOCAT group. **Effectiveness of ustekinumab in patients with psoriatic arthritis in a real-world, multicenter study.** *Clinical Rheumatology.* 39(10):2963-2971. I.F.: 2.394

14. Frade-Sosa B; Narváez J; Salman-Monte TC; Castellanos-Moreira R; Ortiz-Santamaria V; Torrente-Segarra V; Castellvi I; Magallares B; Reina D; Minguez S; Sallés M; Manrique de Lara MG; Ordoñez S; Riera E; Schur PH; Gómez-Puerta JA. **A comparative study on clinical and serological characteristics between patients with rhupus and those with systemic lupus erythematosus and rheumatoid arthritis.** *Lupus.* 29(10):1216-1226. I.F.: 2.251

15. Quintana, Rosana; Pons-Estel, Guillermo J; Roberts, Karen; Sacnun, Monica; Serrano, Rosa; Nieto, Romina; Conti, Silvana; Gervasoni, Viviana; Catoggio, Luis J; Soriano, Enrique R; Scolnik, Marina; Garcia, Mercedes A; Alvarellos, Alejandro; Saurit, Veronica; Berbotto, Guillermo A; Sato, Emilia, I; Lavras Costallat, Lilian T; Borba Neto, Eduardo Ferreira; Bonfa, Eloisa; Xavier, Ricardo M; de Oliveira e Silva Montandon, Ana Carolina; Molina-Restrepo, Jose Fernando; Iglesias-Gamarra, Antonio; Guibert-Toledano, Marlene; Reyes-Llerena, Gil Alberto; Massardo, Loreto; Neira, Oscar J; Cardiel, Mario H; Barile-Fabris, Leonor A; Amigo, Mary-Carmen; Silveira, Luis H; De La Torre, Ignacio Garcia; Acevedo-Vasquez, Eduardo M; Ugarte-Gil, Manuel F; Alfaro-Lozano, Jose Luis; Segami, Maria Ines; Chacon-Diaz, Rosa; Esteva-Spinetti, Maria H; Gomez-Puerta, Jose A; Alarcon, Graciela S; Pons-Estel, Bernardo A; Grp Latinoamer Estudio Lupus GLADE. **Clinical features, damage accrual, and survival in patients with familial systemic lupus erythematosus: data from a multi-ethnic, multinational Latin American lupus cohort.** *Lupus.* 29(9):1140-1145. I.F.: 2.251

Review / I.F.: 11.382

1. Ruiz de Morales JMG, Puig L, Daudén E, Cañete JD, Pablos JL, Martín AO, Juanatey CG, Adán A, Montalbán X, Borruel N, Ortí G, Holgado-Martín E, García-Vidal C, Vizcaya-Morales C, Martín-Vázquez V, González-Gay MÁ. **Critical role of interleukin (IL)-17 in inflammatory and immune disorders: An updated review of the evidence focusing in controversies.** *Autoimmunity Reviews.* 19(1):102429. I.F.: 7.767

2. Cañete JD, Tasende JAP, Laserna FJR, Castro SG, Queiro R . **The Impact of Comorbidity on Patient-Reported Outcomes in Psoriatic Arthritis: A Systematic Literature Review.** *Rheumatol Ther.* 7(2):237-257. I.F.: 3.615

Letters / I.F.: 46.118

1. Betancur, Juan F; Gomez-Puerta, Jose A. **Antinuclear antibodies mitotic patterns and their clinical associations.** *Annals of the Rheumatic Diseases.* 79(6):e63. I.F.: 16.102

2. Castellanos-Moreira R; Rodríguez-García SC; Haro I; Sanmarti R. **Relationship between rheumatoid arthritis and interstitial lung disease is a 'two-way street'.** *Annals of the Rheumatic Diseases.* I.F.: 16.102

3. Castellanos-Moreira R, Rodriguez-Garcia SC, Hernandez-Gonzalez F, Sellares J, Haro I, Sanmarti R . **Is Auto-Antibody Expansion the Turning Point Between Idiopathic Pulmonary Fibrosis and Rheumatoid Arthritis?** *Chest.* 158(4):1777-1778. I.F.: 8.308

4. Ariel Izcovich, Graciela S Alarcón, José A Gómez-Puerta, Guillermo J Pons-Estel, Manuel F Ugarte-Gil, Mario H Cardiel, Bernardo A Pons-Estel, GLADEL study group. **Clinical practice guidelines and recommendations for the management of patients with systemic lupus erythematosus: a critical comparison**. *Rheumatology*. 59(12):e165-e168. I.F.: 5.606

Case Reports / I.F.: 2.394

1. Cajiao, Katherine; Gomez-Puerta, Jose A. **Coexistence of antiphospholipid syndrome and cryoglobulinemia in a patient with rheumatoid arthritis.** *Clinical Rheumatology.* 39(9):2833-2835. I.F.: 2.394

Clinical Guidelines / I.F.: 16.102

1. Gossec L, Baraliakos X, Kerschbaumer A, de Wit M, McInnes I, Dougados M, Primdahl J, McGonagle DG, Aletaha D, Balanescu A, Balint PV, Bertheussen H, Boehncke WH, Burmester GR, Canete JD, Damjanov NS, Kragstrup TW, Kvien TK, Landewé RBM, Lories RJU, Marzo-Ortega H, Poddubnyy D, Rodrigues Manica SA, Schett G, Veale DJ, Van den Bosch FE, van der Heijde D, Smolen JS. **EULAR recommendations for the management of psoriatic arthritis with pharmacological therapies: 2019 update.** *Annals of the Rheumatic Diseases.* 79(6):700-712. I.F.: 16.102

Consortium Publications / I.F.: 23.087

1. Rivellese F, Humby F, Bugatti S, Fossati-Jimack L, Rizvi H, Lucchesi D, Lliso-Ribera G, Nerviani A, Hands RE, Giorli G, Frias B, Thorborn G, Jaworska E, John C, Goldmann K, Lewis MJ, Manzo A, Bombardieri M, Pitzalis C, PEAC-R4RA Investigators. **B Cell Synovitis and Clinical Phenotypes in Rheumatoid Arthritis: Relationship to Disease Stages and Drug Exposure.** *Arthritis & Rheumatology.* 72(5):714-725. I.F.: 9.586

2. Londoño MC, Reig M, RETOINMUNO Multidisciplinary Group. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers.* 12(11):1-22. I.F.: 6.126

3. Fernández-Carballido C, Martín-Martínez MA, García-Gómez C, Castañeda S, González-Juanatey C, Sánchez-Alonso F, García de Vicuña R, Erausquin-Arruabarrena C, López-Longo J, Sánchez MD, Corrales A, Quesada-Masachs E, Chamizo E, Barbadillo C, Bachiller-Corral J, Cobo-Ibañez T, Turrión A, Giner E, Llorca J, González-Gay MA, Cardiovascular in Rheumatology Project Collaborative Group. **Impact of Comorbidity on Physical Function in Patients With Ankylosing Spondylitis and Psoriatic Arthritis Attending Rheumatology Clinics: Results From a Cross-Sectional Study.** *Arthritis Care & Research.* 72(6):822-828. I.F.: 4.056

4. Zegarra-Mondragón S, López-González R, Martín-Martínez MA, García-Gómez C, Sánchez-Alonso F, González-Juanatey C, Manrique Arija S, Bonilla Hernán G, Martínez Pardo S, Ruibal Escribano A, Pagán García E, Delgado Frías E, Rivera Redondo J, Delgado Sánchez M, Rodriguez Cambrón AB, Moreno Ramos MJ, Rodríguez Montero SA, Navío Marco MT, Morcillo Valle M, García González J, Bachiller Corral J, Llorca J, Castañeda S, González-Gay MÁ, CARMA Project Collaborative Group. **Association of apolipoprotein B/apolipoprotein A1 ratio and cardiovascular events in rheumatoid arthritis: results of the CARMA study.** *Clinical and Experimental Rheumatology.* 38(4):662-669. I.F.: 3.319

GRANTS FOR RESEARCH IN PROGRESS

Cañete JD. **Clinical validation of genetic markers to predict persistent remission in rheumatoid arthritis patients treated with biological therapy (REMRABIT).**
Sponsored by: Fundación Profesor Novoa Santos. FIS_PMP15/00032
Duration: 01/01/2016-31/12/2020

Cañete JD. **Red Temática de Investigación Cooperativa en Salud - Inflamación y enfermedades reumáticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0012/0010
Duration: 01/01/2017-31/12/2021

Cañete JD, Sanmartí R. **Biomarcadores sinoviales y séricos de mal pronóstico en Artritis Indeferenciadas de inicio. Un estudio longitudinal, prospectivo, de 18 meses de seguimiento.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00993
Duration: 01/01/2018-30/06/2021

Cañete JD. **3TR: Taxonomy, treatment, targets and remission-Identification of the molecular mechanisms of non-response to treatments, relapses and remission in autoimmune, inflammatory, and allergic conditions.**
Sponsored by: European Comission. CE_IMI2-2018-14
Duration: 01/10/2019-31/09/2026

Castellanos RA. **Estudi dels autoanticossos en malaltia pulmonar intersticial difusa associada a artritis reumatoide.**
Sponsored by: Societat Catalana de Reumatologia. SCR_19_01
Duration: 07/06/2019-06/06/2021

1.12 Nosocomial infection

LOCATION
HCB

KEYWORDS
1. **Nosocomial infection**
2. **Bacteremia**
3. **Inmunosuppresed patients**
4. **Bone and joint infection**

RELATED DISEASES
1. **Infectious diseases**

GROUP INVOLVED IN
AGAUR_SGR17: 01432, 01067
REIPI

Original publications

TOTAL	29
IF	202,26
Mean IF	6,97
Q1	69%
D1	45%
MA	34%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Alex Soriano (HCB)
T. 93 227 54 00 (Ext.: 5708)
asoriano@clinic.cat

EMERITUS
Josep Mensa (HCB)

RESEARCHERS
Ana del Río (HCB)
Carolina García Vidal (HCB)
Jose Antonio Martinez Martinez (FCRB)

POST-DOCTORAL RESEARCHERS
Laura Morata (HCB)
Pedro Puerta (HCB)

PRE-DOCTORAL RESEARCHERS
Daiana Lorena Agüero (HCB-FCRB)
Andrea Aira (FCRB)
Celia Cardozo (HCB)
Mariana Chumbita (FCRB)
Verónica Rico (HCB)

TECHNICIANS
Antonio Moreno (FCRB)

NURSING STAFF
Montserrat Solà (FCRB)

ADMINISTRATIVE STAFF
Maria Carmen Mensa (FCRB)

PROBLEM

Eight per cent of patients admitted have a nosocomial infection (infection acquired in the hospital) and approximately 20-30% of cases are due to multi-drug resistant organisms.

This has direct consequences for the health of patients, prolonging their stay in hospital and can lead to death.

APPROACH

This group is a multidisciplinary team in which doctors specialising in infectious diseases, microbiology and preventive medicine along with pharmacists cooperate in the study of the causes of nosocomial infections, in order to prevent them or treat them when they appear.

IMPACT

The research carried out by the group may help to reduce the number of healthcare-associated infections, promote the rational use of antibiotics and reduce the rate of multi-drug resistant organisms.

RESEARCH LINES

- Bacteremia.
- Bone and joint infections.
- Immunocompromised patients.
- Intestinal microbiota.

PUBLICATIONS

Originals / I.F.: 202.261

1. Spinner, Christoph D; Gottlieb, Robert L; Criner, Gerard J; Arribas Lopez, Jose Ramon; Cattelan, Anna Maria; Soriano Viladomiu, Alex; Ogbuagu, Onyema; Malhotra, Prashant; Mullane, Kathleen M; Castagna, Antonella; Chai, Louis Yi Ann; Roestenberg, Meta; Tsang, Owen Tak Yin; Bernasconi, Enos; Le Turnier, Paul; Chang, Shan-Chwen; SenGupta, Devi; Hyland, Robert H; Osinusi, Anu O; Cao, Huyen; Blair, Christiana; Wang, Hongyuan; Gaggar, Anuj; Brainard, Diana M; McPhail, Mark J; Bhagani, Sanjay; Ahn, Young; Sanyal, Arun J; Huhn, Gregory; Marty, Francisco M; GS-US-540-5774 Investigators. **Effect of Remdesivir vs Standard Care on Clinical Status at 11 Days in Patients With Moderate COVID-19 A Randomized Clinical Trial.** *Jama-Journal of the American Medical Association.* 324(11):1048-1057. I.F.: 45.540

2. Kuehl R, Morata L, Boeing C, Subirana I, Seifert H, Rieg S, Kern WV, Kim HB, Kim ES, Liao CH, Tilley R, Lopez-Cortés LE, Llewelyn MJ, Fowler VG, Thwaites G, Cisneros JM, Scarborough M, Nsutebu E, Gurgui Ferrer M, Pérez JL, Barlow G, Hopkins S, Ternavasio-de

la Vega HG, Török ME, Wilson P, Kaasch AJ, Soriano A, International Staphylococcus aureus collaboration study group and the ESCMID Study Group for Bloodstream Infections, Endocarditis and Sepsis. **Defining persistent Staphylococcus aureus bacteraemia: secondary analysis of a prospective cohort study.** *Lancet Infectious Diseases.* 20(12):1409-1417. I.F.: 24.446

3. Cilloniz C, Dominedo C, Peroni HJ, Di Giannatale P, Garcia-Vidal C, Gabarrus A, Liapikou A, Ceccato A, Torres A. **Difficult to Treat Microorganisms in Patients Over 80 Years with Community-Acquired Pneumonia: The Prevalence of PES Pathogens**. *European Respiratory Journal.* 56(4):2000773. I.F.: 12.339

4. Garcia-Vidal C, Moreno-García E, Hernández-Meneses M, Puerta-Alcalde P, Chumbita M, Garcia-Pouton N, Linares L, Rico V, Cardozo C, Martínez JA, García F, Mensa J, Castro P, Nicolás JM, Muñoz J, Vidal D, Soriano A, COVID19-Researchers. **Personalized therapy approach for hospitalized patients with COVID-19.** *Clinical Infectious Diseases.* I.F.: 8.313

5. Wouthuyzen-Bakker M, Sebillotte M, Arvieux C, Fernandez-Sampedro M, Senneville E, Barbero JM, Lora-Tamayo J, Aboltins C, Trebse R, Salles MJ, Kramer TS, Ferrari M, Garcia-Cañete J, Benito N, Diaz-Brito V, Del Toro MD, Scarborough M, Soriano A, ESCMID Study Group for Implant-Associated Infections (ESGIAI). **How to handle concomitant asymptomatic prosthetic joints during an episode of hematogenous PJI, a multicentre analysis.** *Clinical Infectious Diseases.* I.F.: 8.313

6. Martinez-Nadal G, Puerta-Alcalde P, Gudiol C, Cardozo C, Albasanz-Puig A, Marco F, Laporte-Amargós J, Moreno-García E, Domingo-Doménech E, Chumbita M, Martínez JA, Soriano A, Carratalà J, Garcia-Vidal C. **Inappropriate Empirical Antibiotic Treatment in High-risk Neutropenic Patients With Bacteremia in the Era of Multidrug Resistance.** *Clinical Infectious Diseases.* 70(6):1068-1074. I.F.: 8.313

7. Löwik CAM, Parvizi J, Jutte PC, Zijlstra WP, Knobben BAS, Xu C, Goswami K, Belden KA, Sousa R, Carvalho A, Martínez-Pastor JC, Soriano A, Wouthuyzen-Bakker M. **Debridement, antibiotics and implant retention is a viable treatment option for early periprosthetic joint infection presenting more than four weeks after index arthroplasty.** *Clinical Infectious Diseases.* 71(3):630-636. I.F.: 8.313

8. Viasus D, Puerta-Alcalde P, Cardozo C, Suárez-Lledó M, Rodríguez-Núñez O, Morata L, Fehér C, Marco F, Chumbita M, Moreno-García E, Fernández-Avilés F, Gutiérrez-Garcia G, Martínez JA, Mensa J, Rovira M, Esteve J, Soriano A, Garcia-Vidal C . **Predictors of multidrug-resistant Pseudomonas aeruginosa in neutropenic patients with bloodstream infection.** *Clinical Microbiology and Infection.* 26(3):345-350. I.F.: 7.117

9. Orihuela-Martín J, Rodríguez-Núñez O, Morata L, Cardozo C, Puerta-Alcalde P, Hernández-Meneses M, Ambrosioni J, Linares L, Bodro M, de Los Angeles Guerrero-León M, Del Río A, Garcia-Vidal C, Almela M, Pitart C, Marco F, Soriano A, Martínez JA. **Performance of differential time to positivity as a routine diagnostic test for catheter-related bloodstream infections: a single centre experience.** *Clinical Microbiology And Infection.* 26(3):303-e1-383.e7. I.F.: 7.117

10. Escudero-Sanchez R, Senneville E, Digumber M, Soriano A, Del Toro MD, Bahamonde A, Del Pozo JL, Guio L, Murillo O, Rico A, García-País MJ, Rodríguez-Pardo D, Iribarren JA, Fernández M, Benito N, Fresco G, Muriel A, Ariza J, Cobo J. **Suppressive antibiotic therapy in prosthetic joint infections: a multicentre cohort study.** *Clinical Microbiology And Infection.* 26(4):499-505. I.F.: 7.117

11. Bassetti M; Vena A; Meroi M; Cardozo C; Cuervo G; Giacobbe DR; Salavert M; Merino P; Gioia F; Fernández-Ruiz M; López-Cortés LE; Almirante B; Escolà-Vergé L; Montejo M; Aguilar-Guisado M; Puerta-Alcalde P; Tasias M; Ruiz-Gaitán A; González F; Puig-Asensio M; Marco F; Pemán J; Fortún J; Aguado JM; Soriano A; Carratalá J; Garcia-Vidal C; Valerio M; Sartor A; Bouza E; Muñoz P. **Factors associated with the development of septic shock in patients with candidemia: A post hoc analysis from two prospective cohorts.** *Critical Care.* 24(1):117. I.F.: 6.407

12. Cardozo C, Cuervo G, Salavert M, Merino P, Gioia F, Fernández-Ruiz M, López-Cortés LE, Escolá-Vergé L, Montejo M, Muñoz P, Aguilar-Guisado M, Puerta-Alcalde P, Tasias M, Ruiz-Gaitán A, González F, Puig-Asensio M, Vena A, Marco F, Pemán J, Fortún J, Aguado JM, Almirante B, Soriano A, Carratalá J, Garcia-Vidal C, GEMICOMED (SEIMC) and the Spanish CANDI-Bundle Group. **An evidence-based bundle improves the quality of care and outcomes of patients with candidaemia.** *Journal Of Antimicrobial Chemotherapy.* 75(3):730-737. I.F.: 5.439

13. Izquierdo-Domínguez A, Rojas-Lechuga MJ, Chiesa-Estomba C, Calvo-Henríquez C, Ninchritz-Becerra E, Soriano-Reixach M, Poletti-Serafini D, Villarreal IM, Maza-Solano JM, Moreno-Luna R, Villarroel PP, Mateos-Serrano B, Agudelo D, Valcarcel F, Del Cuvillo A, Santamaría A, Mariño-Sánchez F, Aguilar J, Vergés P, Inciarte A, Soriano A, Mullol J, Alobid I. **Smell and taste dysfunctions in COVID-19 are associated with younger age in ambulatory settings - a multicenter cross-sectional study.** *Journal Of Investigational Allergology And Clinical Immunology.* 30(5):346-357. I.F.: 5.172

14. Gudiol C, Albasanz-Puig A, Laporte-Amargós J, Pallarès N, Mussetti A, Ruiz-Camps I, Puerta-Alcalde P, Abdala E, Oltolini C, Akova M, Montejo M, Mikulska M, Martín-Dávila P, Herrera F, Gasch O, Drgona L, Paz Morales H, Brunel AS, García E, Isler B, Kern WV, Morales I, Maestro-de la Calle G, Montero M, Kanj SS, Sipahi OR, Calik S, Márquez-Gómez I, Marin JI, Gomes MZR, Hemmatti P, Araos R, Peghin M, Del Pozo JL, Yáñez L, Tilley R, Manzur A, Novo A, Carratalà J, IRONIC Study Group. **A clinical predictive model of multidrug resistance in neutropenic cancer patients with bloodstream infection due to Pseudomonas aeruginosa (IRONIC study).** *Antimicrobial Agents And Chemotherapy.* 64(4):e02494-19. I.F.: 4.904

15. Puerta-Alcalde P; Cardozo C; Marco F; Suárez-Lledó M; Moreno E; Morata L; Fernández-Avilés F; Gutiérrez-Garcia G; Chumbita M; Rosiñol L; Martínez JA; Martínez C; Mensa J; Urbano Á; Rovira M; Soriano A; Garcia-Vidal C. **Changing epidemiology of bloodstream infection in a 25-years hematopoietic stem cell transplant program: current challenges and pitfalls on empiric antibiotic treatment impacting outcomes.** *Bone Marrow Transplantation.* 55(3):603-612. I.F.: 4.725

16. Bassetti M, Russo A, Cilloniz C, Giacobbe DR, Vena A, Amaro R, Graziano E, Soriano A, Torres A. **Ceftaroline for Severe Community-Acquired Pneumonia: A Real-World Two-Center Experience in Italy and Spain: Ceftaroline for severe pneumonia.** *International Journal of Antimicrobial Agents.* 55(4):105921. I.F.: 4.621

17. Wouthuyzen-Bakker M, Sebillotte M, Huotari K, Escudero Sánchez R, Benavent E, Parvizi J, Fernandez-Sampedro M, Barbero JM, Garcia-Cañete J, Trebse R, Del Toro M, Diaz-Brito V, Sanchez M, Scarborough M, Soriano A, ESCMID Study Group for Implant-Associated Infections (ESGIAI). **Lower Success Rate of Débridement and Implant Retention in Late Acute versus Early Acute Periprosthetic Joint Infection Caused by Staphylococcus spp.** *Clinical Orthopaedics And Related Research.* 478(6):1348-1355. I.F.: 4.329

18. Shohat N, Goswami K, Tan TL, Yayac M, Soriano A, Sousa R, Wouthuyzen-Bakker M, Parvizi J, ESCMID Study Group of Implant Associated Infections (ESGIAI) and the Northern Infection Network of Joint Arthroplasty (NINJA). **2020 Frank Stinchfield Award: Identifying who will fail following irrigation and debridement for prosthetic joint infection.** *Bone & Joint Journal.* 102-B(7_Supple_B):11-19. I.F.: 4.306

19. Vargas-Reverón C; Soriano A; Fernández-Valencia JA; Martínez-Pastor JC; Morata L; Muñoz-Mahamud E. **Prevalence and Impact of Positive Intraoperative Cultures in Partial Hip or Knee Revision.** *Journal Of Arthroplasty.* 35(7):1912-1916. I.F.: 3.709

20. Lanternier F; Seidel D; Pagano L; Styczynski J; Mikulska M; Pulcini C; Maertens J; Munoz P; Garcia-Vidal C; Rijnders B; Arendrup MC; Sabino R; Verissimo C; Gaustad P; Klimko N; Arikan-Akdagli S; Arsic V; Barac A; Skiada A; Klingspor L; Herbrecht R; Donnelly P; Cornely OA; Lass-Flörl C; Lortholary O. **Invasive Pulmonary Aspergillosis treatment duration in haematology patients in Europe: an EFISG, IDWP-EBMT, EORTC-IDG, SEIFEM survey.** *Mycoses.* 63(5):420-429. I.F.: 3.575

21. Rodríguez-Lobato LG, Martínez-Roca A, Moreno DF, Gutiérrez-García G, Suárez-Lledó M, Rovira M, Martínez C, Rosiñol L, Almeida Jorge AS, Pedraza A, Cardozo C, Puerta-Alcalde P, Garcia-Vidal C, Marín P, Cid J, Lozano M, Gallego C, Hernando A, Segura S, Urbano-Ispizua Á, Fernández-Avilés F. **Impact of intensifying primary antibiotic prophylaxis in at-home autologous stem cell transplantation program for lymphoma patients.** *Leukemia & Lymphoma.* 61(7):1565-1574. I.F.: 2.969

22. Camprubí D, Almuedo-Riera A, Martí-Soler H, Soriano A, Hurtado JC, Subirà C, Grau-Pujol B, Krolewiecki A, Muñoz J. **Lack of efficacy of standard doses of ivermectin in severe COVID-19 patients.** *Plos One.* 15(11):e0242184. I.F.: 2.740

23. Diez AIG, Fuster D, Morata L, Torres F, Garcia R, Poggio D, Sotes S, Del Amo M, Isern-Kebschull J, Pomes J, Soriano A, Brugnara L, Tomas X . **Comparison of the diagnostic accuracy of diffusion-weighted and dynamic contrast-enhanced MRI with 18F-FDG PET/CT to differentiate osteomyelitis from Charcot neuro-osteoarthropathy in diabetic foot.** *European Journal Of Radiology.* 132:109299. I.F.: 2.687

24. Llorenç V, Benejam G, Mesquida M, Sainz de la Maza M, Molins B, Alba C, Pelegrin L, Martínez JA, Adán A. **Antituberculous Treatment Itself Might Prevent Visual Impairment in Presumed Tuberculosis-Related Uveitis.** *Ocular Immunology And Inflammation.* 28(1):103-110. I.F.: 2.112

25. Laporte-Amargos J., Gudiol C., Arnan M., Puerta-Alcalde P., Carmona-Torre F., Huguet M., Albasanz-Puig A., Parody R., Garcia-Vidal C., Del Pozo J.L., Batlle M., Tebé C., Rigo-Bonnin R., Muñoz C., Padullés A., Tubau F., Videla S., Sureda A., Carratalà J. **Efficacy of extended infusion of β-lactam antibiotics for the treatment of febrile neutropenia in haematologic patients: Protocol for a randomised, multicentre, open-label, superiority clinical trial (BEATLE).** *Trials.* 21(1):412. I.F.: 1.883

26. Vaquero-Herrero MP, Ragozzino S, Iriart X, Castaño-Romero F, Sailler L, Sánchez-González R, Cassaing S, Charpentier E, Berry A, Carbonell C, Siller-Ruiz M, García-García I, Soriano A, Marcos M, Ternavasio-de la Vega HG . **Candida bloodstream infection in patients with systemic autoimmune diseases.** *Medecine Et Maladies Infectieuses.* 50(4):372-376. I.F.: 1.782

27. Isern-Kebschull J; Tomas X; García-Díez AI; Morata L; Moya I; Ríos J; Soriano A. **Value of multidetector computed tomography for the differentiation of delayed aseptic and septic complications after total hip arthroplasty.** *Skeletal Radiology.* 49(6):893-902. I.F.: 1.618

28. Jiménez Hernández M; Soriano A; Filella X; Calvo M; Coll E; Rebled JM; Poch E; Graterol F; Compte MT; Maduell F; Fontsere N. **Impact of locking solutions on conditioning biofilm formation in tunnelled haemodialysis catheters and inflammatory response activation.** *Journal Of Vascular Access.* I.F.: 1.223

29. Francisco Arnaíz de las Revillas; Dolores Sousa; Carmen Ardanuy; Carolina García Vidal; José Miguel Montejo Baranda; Regino Rodríguez Álvarez; Juan Pasquau Liaño; Emilio Bouza; José Antonio Oteo Revuelta; César Balseiro; Cristina Méndez; Nadia Lwoff Ivanissevich; Pedro Llinares Mondéjar; María del Carmen Fariñas Álvarez. **Healthcare-associated pneumonia: a prospective study in Spain.** *Revista Espanola de Quimioterapia.* 33(5):358-368. I.F.: 1.132

Review / I.F.: 44.03

1. Puerta-Alcalde P; Champlin RE; Kontoyiannis DP. **How I perform hematopoietic stem cell transplantation on patients with a history of invasive fungal disease.** *Blood.* 136(24):2741-2753. I.F.: 17.794

2. Ruiz de Morales JMG, Puig L, Daudén E, Cañete JD, Pablos JL, Martín AO, Juanatey CG, Adán A, Montalbán X, Borruel N, Ortí G, Holgado-Martín E, García-Vidal C, Vizcaya-Morales C, Martín-Vázquez V, González-Gay MÁ . **Critical role of interleukin (IL)-17 in inflammatory and immune disorders: An updated review of the evidence focusing in controversies.** *Autoimmunity Reviews.* 19(1):102429. I.F.: 7.767

3. Kuehl R, Morata L, Meylan S, Mensa J, Soriano A . **When antibiotics fail: a clinical and microbiological perspective on antibiotic tolerance and persistence of Staphylococcus aureus.** *Journal Of Antimicrobial Chemotherapy.* 75(5):1071-1086. I.F.: 5.439

4. Soriano A; Rossolini GM; Pea F. **The role of dalbavancin in the treatment of acute bacterial skin and skin structure infections (ABSSSIs).** *Expert Review of Anti-Infective Therapy.* 18(5):415-422. I.F.: 3.767

5. Chumbita M, Cillóniz C, Puerta-Alcalde P, Moreno-García E, Sanjuan G, Garcia-Pouton N, Soriano A, Torres A, Garcia-Vidal C. **Can Artificial Intelligence Improve the Management of Pneumonia.** *Journal Of Clinical Medicine.* 9(1):248. I.F.: 3.303

6. Soriano A, Stefani S, Pletz MW, Menichetti

F, Italian Group for Antimicrobial Stewardship (GISA). **Antimicrobial stewardship in patients with acute bacterial skin and skin structures infections: an international Delphi consensus.** *Journal Of Global Antimicrobial Resistance.* 22:296-301. I.F.: 2.706

7. Candel FJ; Peñuelas M; Tabares C; Garcia-Vidal C; Matesanz M; Salavert M; Rivas P; Pemán J. **Fungal infections following treatment with monoclonal antibodies and other immunomodulatory therapies.** *Revista Iberoamericana de Micología.* 37(1):5-16. I.F.: 1.627

8. Javier Pemán García; Alba Cecilia Ruiz Gaitán; Carolina García Vidal; Miguel Salavert Lletí; Paula Ramírez Galleymore; Francesc Puchades Gimeno; Marta García Hita; Ana Alastruey-Izquierdo; Guillermo Quindós Andrés. **Fungal co-infection in COVID-19 patients: Should we be concerned?** *Revista Iberoamericana de Micología.* 37(2):41-46. I.F.: 1.627

Letters / I.F.: 88.955

1. Cuadrado-Payán E, Montagud-Marrahi E, Torres-Elorza M, Bodro M, Blasco M, Poch E, Soriano A, Piñeiro GJ . **SARS-CoV-2 and influenza virus co-infection.** *Lancet.* 395(10236):e84. I.F.: 60.390

2. Blanco JL; Ambrosioni J; Garcia F; Martínez E; Soriano A; Mallolas J; Miro JM. **COVID-19 in patients with HIV: clinical case series.** *Lancet Hiv.* 7(5):e314-e316. I.F.: 14.813

3. Wouthuyzen-Bakker M, Lora-Tamayo J, Soriano A, ESCMID Study Group for Implant-associated Infections. **Antibiotic Use in Total Knee Arthroplasty Periprosthetic Joint Infection.** *Clinical Infectious Diseases.* 70(6):1259-1260. I.F.: 8.313

4. Garcia-Vidal C; Lewis RE; Kontoyiannis DP. **Combination antifungal therapy for breakthrough invasive mould disease in patients with haematological malignancies: when management reasoning eclipses evidence-based medicine.** *Journal of Antimicrobial Chemotherapy.* 75(11):3096-3098. I.F.: 5.439

Editorial / I.F.: 3.173

1. Puerta-Alcalde P; García-Vidal C. **Profile of patients with COVID-19 treated in Spanish emergency departments during the 2020 pandemic**. *Emergencias: Revista de la Sociedad Españolade Medicina de Urgencias y Emergencias.* 32(4):225-226. I.F.: 3.173

Case Reports / I.F.: 25.203

1. Bodro M, Compta Y, Llansó L, Esteller D, Doncel-Moriano A, Mesa A, Rodríguez A, Sarto J, Martínez-Hernandez E, Vlagea A, Egri N, Filella X, Morales-Ruiz M, Yagüe J, Soriano Á, Graus F, García F, "Hospital Clínic Infecto-COVID-19" and "Hospital Clínic Neuro-COVID-19" groups. **Increased CSF levels of IL-1β, IL-6, and ACE in SARS-CoV-2-associated encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(5):e821. I.F.: 7.724

2. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

3. Aira A; Rubio E; Vergara Gómez A; Fehér C; Casals-Pascual C; González B; Morata L; Rico V; Soriano A. **rUTI Resolution After FMT for Clostridioides difficile Infection: A Case Report.** *Infectious Diseases And Therapy.* I.F.: 4.307

4. Albiach L; Camprubí D; Alvarez-Martínez MJ; Soriano A. **Ribotype 027 Clostridioides difficile infection presented as a traveller's diarrhoea.** *Enfermedades Infecciosas y Microbiología Clínica.* 38(4):196-197. I.F.: 1.654

5. Tomas X, Campistol JM, Fontdevila J, Pomes J, Soriano A. **Axillary lymphadenitis associated with a herpes-zoster mimicking a liposarcoma: MRI findings.** *Medicina Clínica.* I.F.: 1.635

6. Fernandez-Pittol M; Bosch J; Morata L; Lozano L; Martínez Pastor JC; Soriano A. **Prosthetic joint infection by Bordetella holmesii: Case report and a review of the literature.** *International Journal Of Artificial* Organs. 43(11):748-750. I.F.: 1.337

7. Mensa J; Gutiérrez CD; Cardozo C; Fernández LR; Kestler M; Muñoz P; Bouza E. **Neck infection after allogenic hematopoietic progenitors transplantation.** *Revista Espanola de Quimioterapia.* 33(2):130-136. I.F.: 1.132

Clinical Guidelines / I.F.: 6.094

1. Gudiol C, Aguilar-Guisado M, Azanza JR, Candel FJ, Cantón R, Carratalà J, Garcia-Vidal C, Jarque I, Lizasoain M, Gil-Bermejo JM, Ruiz-Camps I, Sánchez-Ortega I, Solano C, Suárez-Lledó M, Vázquez L, de la Cámara R . **Executive summary of the consensus document of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC), the Spanish Network for Research in Infectious Diseases (REIPI) and the Spanish Society of Haematology and Haemotherapy (SEHH) on the management of febrile neutropenia in patients with hematological malignancies.** *Enfermedades Infecciosas y Microbiología Clínica.* 38(4):174-181. I.F.: 1.654

2. Cantón R; Oliver A; Alós JI; de Benito N; Bou G; Campos J; Calvo J; Canut A; Castillo J; Cercenado E; Domínguez MÁ; Fernández-Cuenca F; Guinea J; Larrosa N; Liñares J; López-Cerero L; López-Navas A; Marco F; Mirelis B; Moreno-Romo MÁ; Morosini MI; Navarro F; Oteo J; Pascual Á; Pérez-Trallero E; Pérez-Vázquez M; Soriano A; Torres C; Vila J; Martínez-Martínez L. **Recommendations of the Spanish Antibiogram Committee (COESANT) for selecting antimicrobial agents and concentrations for in vitro susceptibility studies using automated systems [Recomendaciones del Comité Español del Antibiograma (COESANT) para la selección de antimicrobianos y sus concentraciones en el estudio in vitro de la sensibilidad con métodos automáticos].** *Enfermedades Infecciosas y Microbiología Clínica.* 38(4):182-187. I.F.: 1.654

3. Aira A, Arajol C, Casals-Pascual C, González-Suárez B, Martí S, Domínguez MÁ, Guardiola J, Soriano Á, en representación del grupo catalán para el estudio y desarrollo de la transferencia de microbiota fecal. **Recommendations for stool donor selection for fecal microbiota transplant. Consensus document endorsed by the Catalan Society of Digestology, Catalan Society of Infectious diseases and Clinical microbiology and the GEMBIOTA group from Spanish Society of Infectious**

Diseases and Clinical Microbiology. *Enfermedades Infecciosas y Microbiología Clínica.* S0213-005X(20)30292-5. I.F.: 1.654

4. Bouza E; Aguado JM; Alcalá L; Almirante B; Alonso-Fernández P; Borges M; Cobo J; Guardiola J; Horcajada JP; Maseda E; Mensa J; Merchante N; Muñoz P; Sáenz JLP; Pujol M; Reigadas E; Salavert M; Barberán J. **Recommendations for the diagnosis and treatment of Clostridioides difficile infection: An official clinical practice guideline of the Spanish Society of Chemotherapy (SEQ), Spanish Society of Internal Medicine (SEMI) and the working group of Postoperative Infection of the Spanish Society of Anesthesia and Reanimation (SEDAR).** *Revista Espanola de Quimioterapia.* 33(2):151-175. I.F.: 1.132

Consortium Publications / I.F.: 4.836

1. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of the American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

GRANTS FOR RESEARCH IN PROGRESS

Del Río A, Martinez JA. **Ensayo clínico randomizado para comparar la eficacia de la combinación de antibióticos no absorbibles seguidos de un probiótico o de trasplante de flora fecal (FMT) en la descolonización rectal por MDRO.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00842
Duration: 01/01/2020-31/12/2022

García-Vidal C. **Impacto de un paquete de intervenciones basadas en la evidencia en la calidad de la atención y el pronóstico de la candidemia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00744
Duration: 05/07/2016-31/12/2020

García-Vidal C. **Uso del aprendizaje automático (machine learning) y la inteligencia artificial para mejorar el tratamiento antibiótico empírico de los pacientes hematológicos con neutropenia febril.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01061
Duration: 01/01/2019-31/12/2021

Soriano A. **Estudio de estabilidad y viabilidad de la microbiota intestinal liofilizada y su utilidad en el tratamiento de la infección por Clostridium difficile.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01023
Duration: 01/01/2017-30/06/2021

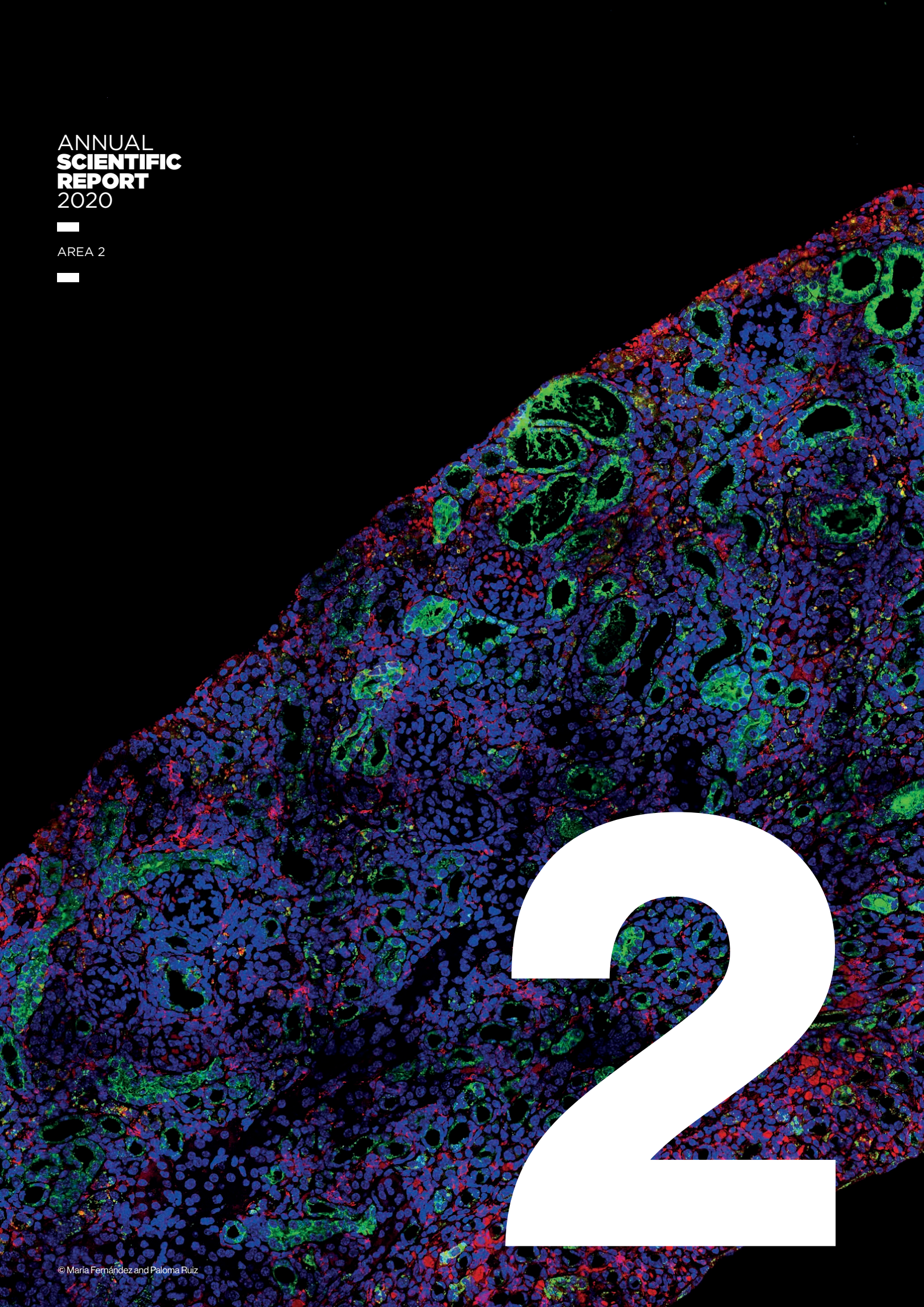
Soriano A. **Eficacia del PET-TC precoz en la detección de metástasis sépticas en pacientes con bacteremia por S. aureus de alto riesgo. Estudio piloto empleando el 2-[18F]F-PABA-PET/TC como marcador de S. aureus.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01116
Duration: 01/01/2020-31/12/2022

DOCTORAL THESIS

Soriano A, Garcia-Vidal C. **Multidrug resistance challenges in bacterial infection of oncohematological patients.**
PhD student: Pedro Puerta Alcalde

ANNUAL
SCIENTIFIC REPORT
2020

AREA 2



2

© María Fernández and Paloma Ruiz

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

2.1 **Inflammation and repair in respiratory diseases**
Alvar Agustí

2.2 **Genetics and urological tumours**
Antonio Alcaraz

2.3 **Physiopathological mechanisms of respiratory illnesses**
Joan Albert Barberà

2.4 **Translational computing in cardiology**
Bart Bijnens

2.5 **Translational research in pulmonary vascular diseases: cell proliferation and apoptotic mechanisms in pulmonary arterial hypertension**
Isabel Blanco

2.6 **Familial cardiomyopathies and sudden death syndromes**
Josep Brugada

2.7 **Nephro-urological diseases and kidney transplantation**
Fritz Diekmann

2.8 **Vascular cell biology**
Gustavo Egea

2.9 **Cardiovascular risk, nutrition and aging**
Ramon Estruch

2.10 **Respiratory biophysics and bioengineering**
Ramon Farré

2.11 **Arrhythmias and physical activity**
Eduard Guasch

2.12 **Atrial fibrillation biopathology and therapy**
Lluís Mont

2.13 **Breathing disturbances in sleep**
Josep Maria Montserrat

2.14 **Clinical and experimental respiratory immunoallergy**
Joaquim Mullol

2.15 **Translational research in post-transplant neoplasia**
Ignacio Revuelta

2.16 **Atherosclerosis, coronary disease and heart failure**
Manel Sabaté

2.17 **Cardiac imaging**
Marta Sitges

2.18 **Applied research in infectious respiratory diseases and critically ill patients**
Antoni Torres

2.1 Inflammation and repair in respiratory diseases

LOCATION
CELLEX building, floor 2A

KEYWORDS
1. **COPD**
2. **Emphysema**
3. **Inflammation**
4. **Networks**
5. **Systems biology**

RELATED DISEASES
1. **Lung cancer**
2. **Interstitial lung diseases**
3. **Fibrosis**
4. **Bronchiectasis**
5. **COVID-19 lung sequelae**

GROUP INVOLVED IN
CIBERES

Original publications

TOTAL	20
IF	213,11
Mean IF	10,66
Q1	60%
D1	40%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Alvar Agustí (HCB)
T. 93 227 17 01
aagusti@clinic.cat

RESEARCHERS
Eugenio Ballester (HCB)
Maria Rosa Faner (CIBER)
Abel Gómez-Caro (HCB)
Ramón Marrades (HCB)
Jacobo Sellarés (HCB)
Oriol Sibila (HCB)

POST-DOCTORAL RESEARCHERS
Tamara Cruz (FCRB)
Angela Guirao (HCB)
Alejandra López Giraldo (HCB)

PRE-DOCTORAL RESEARCHERS
Núria Albacar (HCB)
Sandra Casas (CIBER)
Sandra Cuerpo (HCB)
Fernanda Hernández González (HCB)
Núria Mendoza (IDIBAPS)
Núria Olvera (CIBER)

TECHNICIANS
Tamara Garcia Sanchez (CIBER)
Gemma Sunyer (CIBER)

PROBLEM

Chronic obstructive pulmonary disease (COPD) – also known as pulmonary emphysema or chronic bronchitis – pulmonary fibrosis, and lung cancer, are common and potentially serious respiratory diseases. And they are all the result of everyday interactions between environmental factors and genetic factors.

This group's research focuses on the study of those interactions and potential translation to clinical practice, with the aim of improving the diagnosis and treatment of patients who suffer from them.

APPROACH

To meet these goals, the group uses a combined research strategy that includes clinical information and knowledge; pulmonary function variables; quantitative thoracic imaging techniques; cellular and molecular analysis of biological samples; and analysis of the composition of exhaled air.

Ultimately, it combines this information with advanced bioinformatic methods (systems biology, network analysis and artificial intelligence) in healthy volunteers or patients who have given their informed consent to be part of each specific research project.

IMPACT

Thanks to its research, the group has shown that there are people whose lungs (and other organs) do not develop correctly, which favours the onset of chronic diseases in adults.

These observations open up new possibilities for prevention, early diagnosis and treatment. The group has also found ways of improving the diagnosis of lung cancer based on tumour markers in blood and trained dogs that can be used that identify affected patients by their breath.

Finally, thanks to its research, it has found that an abnormal immune response is a key mechanism in many respiratory diseases.

RESEARCH LINES

- Lung development and ageing as key pathogenic determinants of adulthood respiratory diseases.

- Early lung cancer diagnosis.

PUBLICATIONS

Originals / I.F.: 213.108

1. Chalmers JD, Haworth CS, Metersky ML, Loebinger MR, Blasi F, Sibila O, O'Donnell AE, Sullivan EJ, Mange KC, Fernandez C, Zou J, Daley CL, WILLOW Investigators. **Phase 2 trial of the DPP-1 inhibitor brensocatib in bronchiectasis**. *New England Journal Of Medicine*. 383(22):2127-2137. I.F.: 74.699

2. Criner GJ; Celli BR; Singh D; Agusti A; Papi A; Jison M; Makulova N; Shih VH; Brooks L; Barker P; Martin UJ; Newbold P. **Predicting response to benralizumab in chronic obstructive pulmonary disease: analyses of GALATHEA and TERRANOVA studies.** *Lancet Respiratory Medicine*. 8(2):158-170. I.F.: 25.094

3. Breyer-Kohansal R; Faner R; Breyer MK; Ofenheimer A; Schrott A; Studnicka M; Wouters EFM; Burghuber OC; Hartl S; Agusti A. **Factors Associated with Low Lung Function in Different Age Bins in the General Population.** *American Journal Of Respiratory And Critical Care Medicine*. 202(2):292-296. I.F.: 17.452

4. Martinez-Garcia MA, Faner R, Oscullo G, de la Rosa D, Soler-Cataluña JJ, Ballester M, Agusti A. **Inhaled Steroids, Circulating Eosinophils, Chronic Airway Infection and Pneumonia Risk in Chronic Obstructive Pulmonary Disease: A Network Analysis.** *American Journal Of Respiratory And Critical Care Medicine*. 201(9):1078-1085. I.F.: 17.452

5. Hartl S, Breyer MK, Burghuber OC, Ofenheimer A, Schrott A, Urban MH, Agusti A, Studnicka M, Wouters EFM, Breyer-Kohansal R. **Blood eosinophil count in the general population: typical values and potential confounders.** *European Respiratory Journal*. 55(5):1901874. I.F.: 12.339

6. Crichton ML, Lonergan M, Barker AF, Sibila O, Goeminne P, Shoemark A, Chalmers JD. **Inhaled aztreonam improves symptoms of cough and sputum production in patients with bronchiectasis: a post hoc analysis of the AIR-BX studies.** *European Respiratory Journal*. 56(1):2000608. I.F.: 12.339

7. Washko, George R; Nardelli, Pietro; Ash, Samuel Y; Rahaghi, Farbod N; Sanchez-Ferrero, Gonzalo Vegas; Come, Carolyn E; Dransfield, Mark T; Kalhan, Ravi; Han, MeiLan K; Bhatt, Surya P; Wells, J Michael; Pistenmaa, Carrie L; Diaz, Alejandro A; Ross, James C; Rennard, Stephen; Roca, Gabriela Querejeta; Shah, Amil M; Young, Kendra; Kinney, Gregory L; Hokanson, John E; Agusti, Alvar; Estepar, Raul San Jose; COPDGene Investigators. **Smaller Left Ventricle Size at Noncontrast CT Is Associated with Lower Mortality in COPDGene Participants.** *Radiology*. 296(1):208-215. I.F.: 7.931

8. Castellano JJ; Marrades RM; Molins L; Viñolas N; Moises J; Canals J; Han B; Li Y; Martinez D; Monzó M; Navarro A. **Extracellular vesicle lincRNA-p21 expression in tumor-draining pulmonary vein defines prognosis in NSCLC and modulates endothelial cell behavior.** *Cancers*. 12(3):734. I.F.: 6.126

9. Moisés J, Navarro A, Castellano JJ, Viñolas N, Molins L, Canals J, Han B, Martín J, Ramirez J, Frigola G, Marrades RM, Monzó M . **Long Non-Coding RNA NANCI/NKX2-1 Duplex Impacts Prognosis in Stage I Non-Small-Cell Lung Cancer.** *Archivos De Bronconeumologia*. 56(10):630-636. I.F.: 4.957

10. Lee EJ; Cárdenes N; Álvarez D; Sellarés J; Sembrat J; Aranda P; Peng Y; Bullock J; Nouraie SM; Mora AL; Rojas M. **Mesenchymal stem cells reduce ER stress via PERK-Nrf2 pathway in an aged mouse model.** *Respirology*. 25(4):417-426. I.F.: 4.880

11. Díaz-Peña R; Boekstegers F; Silva RS; Jaime S; Hosgood HD; Miravitlles M; Agustí À; Bermejo JL; Olloquequi J. **Amerindian ancestry influences genetic susceptibility to chronic obstructive pulmonary disease.** *J Pers Med*. 10(3):93. I.F.: 4.433

12. López-Mejías R, Remuzgo-Martínez S, Genre F, Pulito-Cueto V, Rozas SMF, Llorca J, Fernández DI, Cuesta VMM, Ortego-Centeno N, Gómez NP, Mera-Varela A, Martínez-Barrio J, López-Longo FJ, Mijares V, Lera-Gómez L, Usetti MP, Laporta R, Pérez V, Gafas AP, González MAA, Calvo-Alén J, Romero-Bueno F, Sanchez-Pernaute O, Nuno L, Bonilla G, Balsa A, Hernández-González F, Grafia I, Prieto-González S, Narvaez J, Trallero-Araguas E, Selva-O'Callaghan A, Gualillo O, Castañeda S, Cavagna L, Cifrian JM, González-Gay MA. **Influence of MUC5B gene on antisynthetase syndrome.** *Scientific Reports*. 10(1):1415. I.F.: 3.998

13. Perea L; Rodrigo-Troyano A; Cantó E; Domínguez-Álvarez M; Giner J; Sanchez-Reus F; Villar-Garciá J; Quero S; Garciá-Núñez M; Marín A; Monsó E; Faner R; Agustí A; Vidal S; Sibila O. **Reduced airway levels of fatty-acid binding protein 4 in COPD: relationship with airway infection and disease severity.** *Respiratory Research*. 21(1):21. I.F.: 3.924

14. Wilson AC; Kumar PL; Lee S; Parker MM; Arora I; Morrow JD; Wouters EFM; Casaburi R; Rennard SI; Lomas DA; Agusti A; Tal-Singer R; Dransfield MT; Wells JM; Bhatt SP; Washko G; Thannickal VJ; Tiwari HK; Hersh CP; Castaldi PJ; Silverman EK; McDonald MN. **Heme metabolism genes Downregulated in COPD Cachexia.** *Respiratory Research*. 21(1):100. I.F.: 3.924

15. Dean Hosgood H; Díaz-Peña R; Blansky D; Jaime S; Parra V; Boekstegers F; Bermejo JL; García-Valero J; Montes JF; Valdivia G; Miravitlles M; Agustí À; Silva RS; Olloquequi J. **PRDM15 Is Associated with Risk of Chronic Obstructive Pulmonary Disease in a Rural Population in Chile.** *Respiration*. 99(4):307-315. I.F.: 3.322

16. Cuerpo S; Palomo M; Hernández-González F; Francesqui J; Albacar N; Hernández C; Blanco I; Embid C; Sellares J. **Improving home oxygen therapy in patients with interstitial lung diseases: application of a noninvasive ventilation device.** *Therapeutic Advances In Respiratory Disease*. 14. I.F.: 3.095

17. Guzman R, Guirao À, Vela E, Clèries M, García-Altés A, Sagarra J, Magem D, Espinas JA, Grau J, Nadal C, Agusti À, Molins L . **Outcomes and cost of lung cancer patients treated surgically or medically in Catalunya: cost-benefit implications for lung cancer screening programs.** *European Journal Of Cancer Prevention*. 29(6):486-492. I.F.: 2.413

18. Boada, Marc; Sanchez-Lorente, David; Libreros, Alejandra; Lucena, Carmen M; Marrades, Ramon; Sanchez, Marcelo; Paredes, Pilar; Serrano, Mario; Guirao, Angela; Guzman, Rudith; Vinolas, Nuria; Casas, Francesc; Agusti, Carles; Molins, Laureano. **Is invasive mediastinal staging necessary in intermediate risk patients with negative PET/CT?** *Journal Of Thoracic Disease*. 12(8):3976-3986. I.F.: 2.046

19. Hernandez-Gonzalez F; Prieto-González S; Brito-Zeron P; Cuerpo S; Sanchez M; Ramirez J; Agustí C; Lucena CM; Paradela M; Grafia I; Espinosa G; Sellares J. **Impact of a systematic evaluation of connective**

tissue disease on diagnosis approach in patients with interstitial lung diseases. *Medicine*. 99(4):e18589. I.F.: 1.552

20. Bouza, Emilio; Alvar, Agustí; Almagro Mena, Pere; Alonso, Tamara; Ancochea Bermúdez, Julio; Barbé Illa, Ferrán; Corbella, Josep; Gracia, Diego; Mascarós, E; Melis, Joan; Miratvilles, Marc; Pastor, Mariano; Pérez Matute, Patricia; Rudilla García, David; Torres Martí, Antoni; Bautista Soriano, Joan; Vallano Ferraz, Antonio; Vargas, Franciso; Palomo, Esteban. **Chronic obstructive pulmonary disease (COPD) in Spain and the different aspects of its social impact: a multidisciplinary opinion document.** *Revista Espanola De Quimioterapia*. 33(1):49-67. I.F.: 1.132

Review / I.F.: 31.559

1. Angel Martinez-Garcia, Miguel; Aksamit, Timothy R; Agusti, Alvar. **Clinical Fingerprinting: A Way to Address the Complexity and Heterogeneity of Bronchiectasis in Practice.** *American Journal Of Respiratory And Critical Care Medicine*. 201(1):14-19. I.F.: 17.452

2. Castillo D, Sánchez-Font A, Pajares V, Franquet T, Llatjós R, Sansano I, Sellarés J, Centeno C, Fibla JJ, Sánchez M, Ramírez J, Moreno A, Trujillo-Reyes JC, Barbeta E, Molina-Molina M, Torrego A, por el grupo de trabajo CRIOMPID. **A Multidisciplinary Proposal for a Diagnostic Algorithm in Idiopathic Pulmonary Fibrosis: The Role of Transbronchial Cryobiopsy**. *Archivos De Bronconeumologia*. 56(2):99-105. I.F.: 4.957

3. Campeny E., López-Pelayo H., Nutt D., Blithikioti C., Oliveras C., Nuño L., Maldonado R., Florez G., Arias F., Fernández-Artamendi S., Villalbí J.R., Sellarès J., Ballbè M., Rehm J., Balcells-Olivero M.M., Gual A. **The blind men and the elephant: Systematic review of systematic reviews of cannabis use related health harms.** *European Neuropsychopharmacology*. 33:1-35. I.F.: 3.853

4. Agusti A; Faner R. **Chronic Obstructive Pulmonary Disease Pathogenesis.** *Clinics In Chest Medicine*. 41(3):307-314. I.F.: 2.667

5. Sellarés J; Francesqui J; Llabres M; Hernandez-Gonzalez F; Baughman RP. **Current treatment of sarcoidosis.** *Current Opinion In Pulmonary Medicine*. 26(5):591-597. I.F.: 2.630

Letters / I.F.: 75.299

1. Halpin DMG; Faner R; Sibila O; Badia JR; Agusti A. **Do chronic respiratory diseases or their treatment affect the risk of SARS-CoV-2 infection?** *Lancet Respiratory Medicine*. 8(5):436-438. I.F.: 25.094

2. Casanova GS; Amaro R; Soler N; Sánchez M; Badía JR; Barberà JA; Agustí A. **An imported case of e-cigarette or vaping associated lung injury in Barcelona.** *European Respiratory Journal*. 55(2):1902076. I.F.: 12.339

3. Agusti A. **Withdrawal of inhaled corticosteroids in COPD.** *European Respiratory Journal*. 56(1):2001684. I.F.: 12.339

4. Gramegna A, Aliberti S, Sibila O, Di Francesco C, Sotgiu G, Perea L, Terranova L, Oriano M, Pilocane T, Saderi L, Chalmers JD, Marchisio P, Blasi F. **Sputum neutrophil elastase in bronchiectasis: a Southern European cohort study.** *European Respiratory Journal*. 25(2001702). I.F.: 12.339

5. Castellanos-Moreira R, Rodriguez-Garcia SC, Hernandez-Gonzalez F, Sellares J, Haro I, Sanmarti R. I**s Auto-Antibody Expansion the Turning Point Between Idiopathic Pulmonary Fibrosis and Rheumatoid Arthritis?** *Chest*. 158(4):1777-1778. I.F.: 8.308

6. Agustí A. **COPD: Challenges and opportunities.** *Respirology*. 25(2):132-133. I.F.: 4.880

Editorial / I.F.: 49.08

1. Agusti A; Faner R. **When Harry Met Sally, or When Machine Learning Met Chronic Obstructive Pulmonary Disease.** *American Journal Of Respiratory And Critical Care Medicine*. 201(3):263-265. I.F.: 17.452

2. Agusti A, Alcazar B, Cosio B, Echave JM, Faner R, Izquierdo JL, Marin JM, Soler-Cataluña JJ, Celli B, Scientific Committee of the ANTES programme. **Time for a change: anticipating the diagnosis and treatment of COPD.** *European Respiratory Journal*. 56(1):2002104. I.F.: 12.339

3. Albacar N; Faner R; Sellarés J. **Smoking and Interstitial lung damage/effects: A Plausible Association?** *Archivos de Bronconeumologia*. 56(7):422-423. I.F.: 4.957

4. Sellarés J; Molina-Molina M. **Serum Biomarkers in Diffuse Interstitial Lung Diseases [Biomarcadores séricos en las enfermedades pulmonares intersticiales difusas].** *Archivos de Bronconeumología*. 56(6):349-350. I.F.: 4.957

5. Callejas-González FJ; Peces-Barba G; Agustí A. **The MENTOR Program, Young People, and the Scientific Future of SEPAR.** *Archivos de Bronconeumología*. 56(12):775-776. I.F.: 4.957

6. Agustí A; Vogelmeier C; Faner R. **COPD 2020: changes and challenges.** *American Journal Of Physiology-Lung Cellular And Molecular Physiology*. 319(5):L879-L883. I.F.: 4.418

Consortium Publications / I.F.: 28.258

1. Mathioudakis AG; Sivapalan P; Papi A; Vestbo J; DECODE-NET (DisEntangling Chronic Obstructive pulmonary Disease Exacerbations clinical trials NETwork) Investigators DECODE-NET (DisEntangling Chronic Obstructive pulmonary Disease Exacerbations clinical trials NETwork) Investigators. **The DisEntangling Chronic Obstructive pulmonary Disease Exacerbations clinical trials NETwork (DECODE-NET): rationale and vision. European Respiratory Journal.** 56(1):2000627. I.F.: 12.339

2. Londoño MC, Reig M, RETOINMUNO Multidisciplinary Group. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers*. 12(11):1-22. I.F.: 6.126

3. De la Rosa Carrillo, David; Luis Lopez-Campos, Jose; Alcazar Navarrete, Bernardino; Calle Rubio, Myriam; Canton Moreno, Rafael; Luis Garcia-Rivero, Juan; Maiz Carro, Luis; Olveira Fusteri, Casilda; Angel Martinez-Garciaj, Miguel; Comité Asesor del Documento de consenso sobre el diagnóstico y tratamiento de la infección bronquial crónica en la enfermedad pulmonar obstructiva crónica. **Consensus Document on the Diagnosis and Treatment of Chronic Bronchial Infection in Chronic Obstructive Pulmonary Disease.** *Archivos de Bronconeumología*. 56(10):651-664. I.F.: 4.957

4. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro

P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals Of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

GRANTS FOR RESEARCH IN PROGRESS

Agustí A. **Determinantes genético-ambientales del desarrollo de la función pulmonar en la infancia y adolescencia: CATCH-UP.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01008
Duration: 01/01/2019-31/12/2021

Agusti A, Faner R. **3TR: Identification of the molecular mechanisms of non-response to treatments, relapses and remission in autoimmune, inflammatory, and allergic conditions.**

Faner R. **Desarrollo pulmonar anormal vs. envejecimiento acelerado en la EPOC: una aproximación a partir del análisis de redes multinivel.**
Sponsored by: Respira. Fundación Española del Pulmón (SEPAR). SEPAR_BecaSepar19
Duration: 14/07/2020-30/06/2022

Sellarés J. **Estudio de la fibrosis pulmonar mediante el "radio-transcriptoma": una nueva forma de evaluación de las enfemedades pulmonares intersticiales fibrosantes.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01152
Duration: 01/01/2020-31/12/2022

Sellarés J. **Impacto de un programa de deshabituación en tabaquismo en el pronóstico de las enfermedades pulmonares intersticiales difusas.**
Sponsored by: Fundació Catalana de Pneumologia (FUCAP).
Duration: 01/01/2020-01/01/2023

Sellarés J. **Caracterización clínica y radiotranscriptómica de la sarcoidosis pulmonar en España.**
Sponsored by: Sociedad Española de Neumología y Cirugía Torácica (SEPAR). 792/2018
Duration: 01/01/2019-30/06/2022

Sibila O. **Predictores Inmunológicos de infección Bronquial en Enfermedades Respiratorias Crónicas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00311
Duration: 10/02/2020-31/12/2021

Sibila O. **Predictores Inmunológicos de infección Bronquial en Enfermedades Respiratorias Crónicas.**
Sponsored by: Respira. Fundación Española del Pulmón (SEPAR). SEPAR_BecaSepar18
Duration: 14/07/2020-30/06/2021
Sponsored by: European Comission. CE_H2020-831434
Duration: 01/09/2019-03/08/2026

DOCTORAL THESES

Marrades RM. **Estudio de los elementos reguladores de la embriogénesis NKX2-1, NANCI y HOTTIP en estadios precoces de cáncer de pulmón de célula no pequeña.**
PhD student: Jorge Moisés Lafuente

Sibila O. **Associació d'elements de la resposta immune innata a les infeccions bacterianes en malalties respiratòries cròniques.**
PhD student: Lidia Perea Soriano

2.2 Genetics and urological tumours

LOCATION
CELLEX building, floor 2B

KEYWORDS
1. **Urothelial carcinoma**
2. **Prostate neoplasia**
3. **Renal tumors**
4. **Biomarkers for diagnosis, prognosis and treatment response**
5. **Gene expression profiles**
6. **DNA methylation**
7. **DNA variants**
8. **Liquid biopsy**
9. **Radiogenomics**

RELATED DISEASES
1. **Bladder cancer**
2. **Kidney cancer**
3. **Prostate cancer**
4. **Upper tract urothelial carcinoma**

GROUP INVOLVED IN
AGAUR_SGR17: 01801

Original publications

TOTAL	14
IF	58,10
Mean IF	4,15
Q1	29%
D1	7%
MA	50%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Antonio Alcaraz (HCB)
T. 93 227 55 45
aalcaraz@clinic.cat

RESEARCHERS
Laura Izquierdo (HCB-IDIBAPS)
Lourdes Mengual (IDIBAPS-FCRB)
Mireia Musquera (HCB-IDIBAPS)
Carlos Nicolau (HCB)
María José Ribal (HCB-IDIBAPS)
Antoni Vilaseca (HCB)

PRE-DOCTORAL RESEARCHERS
Tarek Ajami (HCB)
Raquel Carrasco (FCRB)
Maria Mercedes Ingelmo (FCRB)
Fiorella Lizzeth Roldán (HCB)

ADMINISTRATIVE STAFF
Maria Teresa Dalet (FCRB)

PROBLEM

Prostate, bladder and kidney cancers are the three most common urological tumours suffered by society today. Existing diagnostic techniques are invasive, and non-sensitive and/or non-specific enough.

In addition, current prognostic factors make no distinction between patients with tumour recurrence and those cured by surgery who require no adjuvant therapy.

Therefore, if the group is able to identify non-invasive biomarkers with high diagnostic precision that can also predict disease outcome and treatment response, this would be a great step forward in clinical practice.

APPROACH

Technological breakthroughs in molecular . biology over the last twenty years and the development of bioinformatics tools have enabled the group to make progress in the study of the genetic changes that take place in diverse urological cancers.

The group uses these new approaches to identify changes in the genetic material of bladder, prostate and kidney tumours and thus develop the diagnostic, prognostic and treatment-response biomarkers required to improve current urological clinical practice.

IMPACT

The group has identified various biomarkers in urine to monitor patients with bladder cancer, thus avoiding (or lengthening the time between) invasive diagnostic techniques such as cystoscopies.

In relation to this disease, the group has also identified tumour dissemination in blood, using non-invasive sampling techniques very useful for monitoring tumour relapse an predict the response to therapies.

In prostate cancer, this group has identified diagnostic biomarkers in urine that might make it unnecessary to perform a prostatic biopsy and procnostic biomarkers of biochemical recurrence. Lastly, in renal carcinoma, the group is working on the identification of biomarkers to predict the evolution of the disease after tumour removal.

RESEARCH LINES

- Non-invasive diagnostic and prognostic tools for bladder tumors.

- Genomic heterogeneity in muscle-invasive bladder cancer.

- Liquid biopsy in muscle-invasive bladder cancer and upper tract urothelial carcinoma for early metastatic relapse detection and treatment response.

- Biomarkers for predicting biochemical recurrence in localized prostate cancer patients .

- Radiogenomics in localized prostate cancer.

- Prognostic biomarkers in clear-cell renal carcinoma.

PUBLICATIONS

Originals / I.F.: 58.104

1. Gallioli A, Territo A, Boissier R, Campi R, Vignolini G, Musquera M, Alcaraz A, Decaestecker K, Tugcu V, Vanacore D, Serni S, Breda A. **Learning Curve in Robot-assisted Kidney Transplantation: Results from the European Robotic Urological Society Working Group.** *European Urology.* 78(2):239-247. I.F.: 18.728

2. Izquierdo L; Mateu L; Lozano JJ; Montalbo R; Ingelmo-Torres M; Gómez A; Peri L; Mengual L; Franco A; Alcaraz A. **Urine Gene Expression Profiles in Bladder Pain Syndrome Patients Treated with Triamcinolone.** *European Urology Focus.* 6(2):390-396. I.F.: 4.827

3. Marín-Aguilera M, Jiménez N, Reig Ò, Montalbo R, Verma AK, Castellano G, Mengual L, Victoria I, Pereira MV, Milà-Guasch M, García-Recio S, Benítez-Ribas D, Cabezón R, González A, Juan M, Prat A, Mellado B. **Androgen Receptor and Its Splicing Variant 7 Expression in Peripheral Blood Mononuclear Cells and in Circulating Tumor Cells in Metastatic Castration-Resistant Prostate Cancer.** *Cells.* 9(1):203. I.F.: 4.366

4. Montalbo, Ruth; Izquierdo, Laura; Ingelmo-Torres, Mercedes; Galve, Pilar; Sole, Manel; Franco, Agustin; Jose Ribal, Maria; Alcaraz, Antonio; Mengual, Lourdes. **Urine cytology suspicious for urothelial carcinoma: Prospective follow-up of cases using cytology and urine biomarker-based ancillary techniques.** *Cancer Cytopathology.* 128(7):460-469. I.F.: 3.787

5. Alcaraz A; Rodríguez-Antolín A; Carballido-Rodríguez J; Castro-Díaz D; Esteban-Fuertes M; Cózar-Olmo JM; Ficarra V; Medina-López R; Fernández-Gómez JM; Angulo JC; Medina-Polo J; Brenes-Bermúdez FJ; Molero-García JM; Fernández-Pro-Ledesma A; Manasanch J; The Qualiprost Study Group OBO. **Clinical Benefit of Tamsulosin and the Hexanic Extract of Serenoa Repens, in Combination or as Monotherapy, in Patients with Moderate/Severe LUTS-BPH: A Subset Analysis of the QUALIPROST Study.** *Journal Of Clinical Medicine.* 9(9):2909. I.F.: 3.303

6. Musquera M; Sierra A; Diekmann F; Perez M; Mercader C; Peri L; Esforzado N; Paredes D; Alcaraz A. **Increasing kidney grafts for transplantation.** *World Journal Of Urology.* I.F.: 3.217

7. Montagud-Marrahi, Enrique; Molina-Andujar, Alicia; Pane, Adriana; Jose Ramirez-Bajo, Maria; Amor, Antonio; Esmatjes, Enric; Ferrer, Joana; Musquera, Mireia; Diekmann, Fritz; Ventura-Aguiar, Pedro. **Outcomes of pancreas transplantation in older diabetic patients.** *Bmj Open Diabetes Research & Care.* 8(1):e000916. I.F.: 3.183

8. Carrion A, Ingelmo-Torres M, Lozano JJ, Montalbo R, D'Anna M, Mercader C, Velez E, Ribal MJ, Alcaraz A, Mengual L. **Prognostic classifier for predicting biochemical recurrence in localized prostate cancer patients after radical prostatectomy.** *Urologic Oncology-Seminars And Original Investigations.* I.F.: 2.882

9. Carrion A; Huguet J; Ribal M; Domínguez A; Bonet X; Servián P; Mayordomo O; Ajami T; Piccola N; Freixa R; Díaz F; Lozano F; Raventós C; Morote J. **Comparison of standard vs. palliative management for bladder cancer in patients older than 85 years: multicenter study of 317 de novo tumors.** *Urologic Oncology-Seminars and Original Investigations.* 38(2):40.e9-40.e15. I.F.: 2.882

10. Zastrow, Stefan; Krabbe, Laura-Maria; Wolff, Ingmar; Capitanio, Umberto; Klatte, Tobias; Ecke, Thorsten; Huck, Nina; Borgmann, Hendrik; Scavuzzo, Anna; Cindolo, Luca; Schips, Luigi; Surcel, Cristian; Mirvald, Cristian; Cabo, Antoni Vilaseca; Musquera, Mireia; Hutterer, Georg; Prochazkova, Kristyna; Stief, Christian; Wirth, Manfred; May, Matthias; Brookman-May, Sabine. **External validation of a postoperative nomogram for the prediction of disease-specific survival in patients with papillary renal cell carcinoma using a large multicenter database.** *International Journal Of Clinical Oncology.* 25(1):145-150. I.F.: 2.879

11. Kemesiene, Jurate; Sebastia, Carmen; Pano, Blanca; Ribal, Maria Jose; Rodriguez-Carunchio, Leonardo; Nicolau, Carlos. **Differentiation of Upper Urinary Tract Lesions Using MDCT: Benign Vs Malignant.** *Academic Radiology.* 27(11):1564-1571. I.F.: 2.488

12. Musquera, Mireia; Peri, Lluis; Ajami, Tarek; Revuelta, Ignacio; Izquierdo, Laura; Mercader, Claudia; Sierra, Alba; Diekmann, Fritz; D'Anna, Maurizio; Monsalve, Concepcion; Alcaraz, Antonio. **Results and Lessons Learned on Robotic Assisted Kidney Transplantation.** *Biomed Research International.* 2020(8687907). I.F.: 2.276

13. Pano, Blanca; Soler, Alexandre; Goldman, Debra A; Salvador, Rafael; Bunesch, Laura; Sebastia, Carmen; Nicolau, Carlos. **Usefulness of multidetector computed tomography to differentiate between renal cell carcinoma and oncocytoma. A model validation.** *British Journal Of Radiology.* 93(1115):20200064. I.F.: 2.196

14. Sánchez N; Valduvieco I; Ribal MJ; Campos F; Casas F; Nicolau C; Salvador R; Mellado B; Jorcano S; Fuster D; Paredes P. **Diagnostic utility and therapeutic impact of PET/CT [18F]F-Fluoromethylcholine -Choline in the biochemical recurrence of prostate cancer**. *Revista Espanola de Medicina Nuclear E Imagen Molecular.* 39(5):284-291. I.F.: 1.090

15. Vilaseca A, Guglielmetti G, Vertosick EA, Sjoberg DD, Grasso A, Benfante NE, Nguyen DP, Corradi RB, Coleman J, Russo P, Vickers AJ, Touijer KA. **Value of Partial Nephrectomy for Renal Cortical Tumors of cT2 or Greater Stage: A Risk-benefit Analysis of Renal Function Preservation Versus Increased Postoperative Morbidity.** *Eur Urol Oncol.* 3(3):365-371.

16. Roussel E, Campi R, Larcher A, Verbiest A, Antonelli A, Palumbo C, Derweesh I, Ghali F, Bradshaw A, Meagher MF, Heck M, Amiel T, Kriegmair MC, Rubio J, Musquera M, D'Anna M, Autorino R, Guruli G, Veccia A, Linares-Espinos E, Van Bruwaene S, Hevia V, Porpiglia F, Checcucci E, Minervini A, Mari A, Pavan N, Claps F, Marchioni M, Capitanio U, Beuselinck B, Mir MC, Albersen M; Young Academic Urologists Renal Cell Carcinoma Working Group. **Rates and Predictors of Perioperative Complications in Cytoreductive Nephrectomy: Analysis of the Registry for Metastatic Renal Cell Carcinoma.** *Eur Urol Oncol.* 3(4):523-529.

17. Bruins HM, Veskimäe E, Hernández V, Neuzillet Y, Cathomas R, Compérat EM, Cowan NC, Gakis G, Espinós EL, Lorch A, Ribal MJ, Rouanne M, Thalmann GN, Yuan Y, der Heijden AGV, Witjes JA. **The Importance of Hospital and Surgeon Volume as Major**

Determinants of Morbidity and Mortality After Radical Cystectomy for Bladder Cancer: A Systematic Review and Recommendations by the European Association of Urology Muscle-invasive and Metastatic Bladder Cancer Guideline Panel. *Eur Urol Oncol.*3(2):131-144.

18. Gakis G, Bruins HM, Cathomas R, Compérat EM, Cowan NC, van der Heijden AG, Hernández V, Linares Espinós EE, Lorch A, Neuzillet Y, Ribal MJ, Rouanne M, Thalmann GN, Veskimäe E, Witjes AJ. **European Association of Urology Guidelines on Primary Urethral Carcinoma-2020 Update.** *Eur Urol Oncol.* 3(4):424-432.

Review / I.F.: 11.811

1. Liem EIML, Oddens JR, Vernooij RWM, Li R, Kamat A, Dinney CP, Mengual L, Alcaraz A, Izquierdo L, Savic S, Thalmann GN, Bubendorf L, Sylvester RJ, de Reijke TM . **The Role of Fluorescence in Situ Hybridization for Predicting Recurrence after Adjuvant Bacillus Calmette-Guérin in Intermediate- and High-Risk Non-muscle Invasive Bladder Cancer Patients: A Systematic Review and Meta-Analysis of Individual Patient Data.** *Journal Of Urology.* 24(2):283-291. I.F.: 5.925

2. Sebastià C, Corominas D, Musquera M, Paño B, Ajami T, Nicolau C . **Active surveillance of small renal masses.** *Insights Into Imaging.* 11(1):63. I.F.: 3.579

3. Musquera M, Peri L, Álvarez-Vijande R, Ajami T, Alcaraz A. **Orthotopic Renal Transplantation: Indication, Technique and Outcomes.** *Current Urology Reports.* 21(2):14. I.F.: 2.307

Letters / I.F.: 37.456

1. Alcaraz A. **Re: Enzalutamide with Standard First-line Therapy in Metastatic Prostate Cancer**. *European Urology.* 77(2):286-287. I.F.: 18.728

2. Vilaseca, Antoni; Ribal, Maria J. **Re: Detection and Localisation of Primary Prostate Cancer Using Ga-68-PSMA PET/CT Compared with mpMRI and Radical Prostatectomy Specimens.** *European Urology.* 77(6):757-758. I.F.: 18.728

Editorial / I.F.: 18.728

1. Smith EJ, Plass K, Darraugh J, Shepherd R, Briganti A, Cornford P, Knoll T, Lumen N, N'Dow J, Ribal MJ, Sylvester R, van Poppel H, Bjartell A; EAU Guidelines Office Panel Chairs. **European Association of Urology Guidelines Office: How We Ensure Transparent Conflict of Interest Disclosure and Management.** *European Urology.* 77(4):397-399. I.F.: 18.728

Case Reports

1. Vetterlein MW, Witjes JA, Loriot Y, Giannarini G, Albersen M, Ribal MJ, Rouprêt M; EAU Section of Oncological Urology (ESOU) Board. **Cutting-edge Management of Muscle-invasive Bladder Cancer in 2020 and a Glimpse into the Future.** *Eur Urol Oncol.* 3(6):789-801

Clinical Guidelines / I.F.: 63.772

1. Witjes, J Alfred; Babjuk, Marek; Bellmunt, Joaquim; Bruins, H Maxim; De Reijke, Theo M; De Santis, Maria; Gillessen, Silke; James, Nicholas; Maclennan, Steven; Palou, Juan; Powles, Tom; Ribal, Maria J; Shariat, Shahrokh F; Van der Kwast, Theo; Xylinas, Evanguelos; Agarwal, Neeraj; Arends, Tom; Bamias, Aristotle; Birtle, Alison; Black, Peter C; Bochner, Bernard H; Bolla, Michel; Boormans, Joost L; Bossi, Alberto; Briganti, Alberto; Brummelhuis, Iris; Burger, Max; Castellano, Daniel; Cathomas, Richard; Chiti, Arturo; Choudhury, Ananya; Comperat, Eva; Crabb, Simon; Culine, Stephane; De Bari, Berardino; De Blok, Willem; De Visschere, Pieter J L; Decaestecker, Karel; Dimitropoulos, Konstantinos; Dominguez-Escrig, Jose L; Fanti, Stefano; Fonteyne, Valerie; Frydenberg, Mark; Futterer, Jurgen J; Gakis, Georgios; Geavlete, Bogdan; Gontero, Paolo; Grubmueller, Bernhard; Hafeez, Shaista; Hansel, Donna E; Hartmann, Arndt; Hayne, Dickon; Henry, Ann M; Hernandez, Virginia; Herr, Harry; Herrmann, Ken; Hoskin, Peter; Huguet, Jorge; Jereczek-Fossa, Barbara A; Jones, Rob; Kamat, Ashish M; Khoo, Vincent; Kiltie, Anne E; Krege, Susanne; Ladoire, Sylvain; Lara, Pedro C; Leliveld, Annemarie; Linares-Espinos, Estefania; Logager, Vibeke; Lorch, Anja; Loriot, Yohann; Meijer, Richard; Mir, M Carmen; Moschini, Marco; Mostafid, Hugh; Mueller, Arndt-Christian; Mueller, Christoph R; N'Dow, James; Necchi, Andrea; Neuzillet, Yann; Oddens, Jorg R; Oldenburg, Jan; Osanto, Susanne; Oyen, Wim J G; Pacheco-Figueiredo, Luis; Pappot, Helle; Patel, Manish, I; Pieters, Bradley R; Plass, Karin; Remzi, Mesut; Retz, Margitta; Richenberg, Jonathan; Rink, Michael; Roghmann, Florian; Rosenberg, Jonathan E; Roupret, Morgan; Rouviere, Olivier; Salembier, Carl; Salminen, Antti; Sargos, Paul; Sengupta, Shomik; Sherif, Amir; Smeenk, Robert J; Smits, Anita; Stenzl, Arnulf; Thalmann, George N; Tombal, Bertrand; Turkbey, Baris; Lauridsen, Susanne Vahr; Valdagni, Riccardo; Van der Heijden, Antoine G; Van Poppel, Hein; Vartolomei, Mihai D; Veskimae, Erik; Vilaseca, Antoni; Rivera, Franklin A Vives; Wiegel, Thomas; Wiklund, Peter; Williams, Andrew; Zigeuner, Richard; Horwich, Alan. **EAU-ESMO Consensus Statements on the Management of Advanced and Variant Bladder Cancer-An International Collaborative Multistakeholder Effort Under the Auspices of the EAU-ESMO Guidelines Committees.** *European Urology.* 77(2):223-250. I.F.: 18.728

2. Rodriguez Socarrás M, Loeb S, Teoh JY, Ribal MJ, Bloemberg J, Catto J, N'Dow J, Van Poppel H, Gómez Rivas J. **Telemedicine and Smart Working: Recommendations of the European Association of Urology.** *European Urology.* 78(6):812-819. I.F.: 18.728

3. Ribal MJ, Cornford P, Briganti A, Knoll T, Gravas S, Babjuk M, Harding C, Breda A, Bex A; GORRG Group, Rassweiler JJ, Gözen AS, Pini G, Liatsikos E, Giannarini G, Mottrie A, Subramaniam R, Sofikitis N, Rocco BMC, Xie LP, Witjes JA, Mottet N, Ljungberg B, Rouprêt M, Laguna MP, Salonia A, Bonkat G, Blok BFM, Türk C, Radmayr C, Kitrey ND, Engeler DS, Lumen N, Hakenberg OW, Watkin N, Hamid R, Olsburgh J, Darraugh J, Shepherd R, Smith EJ, Chapple CR, Stenzl A, Van Poppel H, Wirth M, Sønksen J, N'Dow J; EAU Section Offices and the EAU Guidelines Panels. **European Association of Urology Guidelines Office Rapid Reaction Group: An Organisation-wide Collaborative Effort to Adapt the European Association of Urology Guidelines Recommendations to the Coronavirus Disease 2019 Era.** *European Urology.* 78(1):21-28. I.F.: 18.728

4. Bhatt NR, Czarniecki SW, Borgmann H, van Oort IM, Esperto F, Pradere B, van Gurp M, Bloemberg J, Darraugh J, Rouprêt M, Loeb S, N'Dow J, Ribal MJ, Giannarini G; EAU Guidelines Office Dissemination Committee. **A Systematic Review of the Use of Social Media for Dissemination of Clinical Practice Guidelines**. *European Urology Focus.* S2405-4569(20):30292-3. I.F.: 18.728

5. Mottet, Nicolas; Ribal, Maria J; Boyle, Helen; De Santis, Maria; Caillet, Philippe; Choudhury, Ananya; Garg, Tullika; Nielsen, Matthew; Wuthrich, Patrick; Gust, Kilian M; Shariat, Shahrokh F; Gakis, Georgios. **Management of bladder cancer in older patients: Position paper of a SIOG Task Force.** *Journal Of Geriatric Oncology.* 11(7):1043-1053. I.F.: 2.761

Consortium Publications / I.F.: 74.699

1. Sternberg, Cora N.; Fizazi, Karim; Saad, Fred; Shore, Neal D.; De Giorgi, Ugo; Penson, David F.; Ferreira, Ubirajara; Efstathiou, Eleni; Madziarska, Katarzyna; Kolinsky, Michael P.; Cubero, Daniel I. G.; Noerby, Bettina; Zohren, Fabian; Lin, Xun; Modelska, Katharina; Sugg, Jennifer; Steinberg, Joyce; Hussain, Maha;PROSPER Investigators. **Enzalutamide and Survival in Nonmetastatic, Castration-Resistant Prostate Cancer.** *New England Journal Of Medicine.* 382(23):2197-2206. I.F.: 74.699

GRANTS FOR RESEARCH IN PROGRESS

Alcaraz A. **A multimodal AI-based toolbox and an interoperable health imaging repository for the empowerment of imaging analysis related to the diagnosis, prediction and follow-up of cancer.**
Sponsored by: European Commission.
CE_H2020_SC1_20_1s13
Duration: 01/10/2020-31/03/2024

Izquierdo L. **Identification of Kidney Cancer progression targets and biomarkers through CRISPRengineered organoids and xenograft mouse models.**
Sponsored by: Fundació La Marató de TV3.
Cancer_19
Duration: 30/07/2020-29/07/2023

Mengual L, Izquierdo L. **Identificación de biomarcadores pronósticos del tumor vesical músculo invasivo y su inferencia en la biopsia líquida.**
Sponsored by: Istituto de Salud Carlos III (ISCIII). FIS_PI17/01343
Duration: 01/01/2018-30/06/2021

Nicolau C, Quintana LF. **Papel de la patología digital y la Resonancia nuclear magnética en la detección precoz de la fibrosis intersticial en la enfermedad renal crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00080
Duration: 01/01/2018-30/06/2022

2.3 Physiopathological mechanisms of respiratory illnesses

LOCATION
CELLEX building, floor 2A

KEYWORDS
1. **Pulmonary hypertension**
2. **COPD**
3. **Systems medicine**
4. **Endothelium**
5. **Stem cells**

RELATED DISEASES
1. **Pulmonary hypertension**
2. **Chronic thromboembolic pulmonary hypertension**

GROUP INVOLVED IN
CIBERES
RETIC Biobancos
AGAUR_SGR17: 617

Original publications

TOTAL	37
IF	222,26
Mean IF	6,01
Q1	57%
D1	22%
MA	41%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Joan Albert Barberà (HCB)
T. 93 227 57 79
barbera@clinic.cat

EMERITUS
Felip Burgos (HCB)
Roberto Rodríguez Roisín (HCB)

RESEARCHERS
Carlos Ferrando (HCB)
Carme Hernandez Carcereny (HCB)
Graciela Martínez Pallí (HCB)
Josep Roca (HCB)
Olga Tura (IDIBAPS)
Elizabeth Zavala (HCB)

ASSISTANT RESEARCHERS
Víctor Ivo Peinado (CIBER)

POST-DOCTORAL RESEARCHERS
Mª José Arguis (HCB)
Anael Barberan (UB)
Isaac Cano (IDIBAPS)
Ivan Guillermo Dueñas (IDIBAPS)
Jorge Moisés (HCB)
Eva Rivas (HCB)
Akos Tenyi (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Eric Baltaxe (IDIBAPS)
Adelaida Bosacoma (IDIBAPS)
Xiao Hu (IDIBAPS)
Ylenia Roger (CIBER)
Valerie Smolders (UB)
Yolanda Torralba (HCB)

TECHNICIANS
Cristina Rodríguez Gutiérrez (IDIBAPS)

NURSING STAFF
María Palomo (HCB)

ADMINISTRATIVE STAFF
Julio Tomas Mas (FCRB)
Mària Sánchez Moreno (IDIBAPS)

PROBLEM

The group's research focuses on three major areas: alterations of pulmonary circulation in respiratory diseases, complications associated with surgical interventions, and the development and evaluation of integrated patient-care systems for the follow-up and treatment of patients with respiratory diseases.

APPROACH

The group's research on pulmonary circulation disorders in respiratory diseases uses a translational approach, i.e., it works closely with advances in the laboratory and in clinical practice. The goal is to identify the mechanisms that affect the development of pulmonary hypertension and to identify potential therapeutic targets to treat it.

Its research on perioperative medicine evaluates prehabilitation as a preoperative intervention aimed at reducing complications. With regard to the postoperative period, it evaluates strategies for minimizing complications derived from mechanical ventilation and other therapeutic interventions.

Its research area on the development and evaluation of integrated patient-care systems for the follow-up and treatment of patients with respiratory diseases uses an approach based on digital health and systems medicine.

IMPACT

Abnormal pulmonary circulation is highly prevalent in chronic respiratory diseases and affects survival and the clinical course of the disease.

The group's research focuses on the mechanisms that cause these abnormalities in pulmonary circulation and will make it possible to identify potential diagnostic markers and therapeutic targets. Prehabilitation, the improvement of a patient's physical condition before surgery, is a preventive strategy that reduces postoperative complications, such as the use of ventilator support, which will contribute to improving the treatment of postoperative complications.

Information and communication technologies (ICT) provide a useful tool for implementing integrated healthcare systems that prevent discontinuity in the care process of patients with chronic respiratory disease and facilitate patient access to the healthcare system.

RESEARCH LINES

- Deep phenotyping of pulmonary hypertension in chronic respiratory diseases.

- Metabolic profiling of pulmonary vascular cells in chronic thromboembolic pulmonary hypertension.

- Assessing prehabilitation as preventive intervention to reduce postoperative complications.

- Evaluating modalities of perioperative ventilatory support.

- Implementation of integrated care services with a digital health and systems medicine approach.

PUBLICATIONS

Originals / **I.F.: 222.264**

1. Villar J, Ferrando C, Martínez D, Ambrós A, Muñoz T, Soler JA, Aguilar G, Alba F, González-Higueras E, Conesa LA, Martín-Rodríguez C, Díaz-Domínguez FJ, Serna-Grande P, Rivas R, Ferreres J, Belda J, Capilla L, Tallet A, Añón JM, Fernández RL, González-Martín JM, Álvarez J, Asensio MJ, Blanco J, Blasco M, Cachafeiro L, del Campo R, Carbonell JA, Carbonell N, Cariñena A, Carriedo D, Chico M, Corpas R, Cuervo J, Domínguez-Antelo C, Fernández L, Gamboa E, González-Luengo RI, Ortiz Díaz-Miguel R, Pérez-González R, Villar J, Ferrando C, Martínez D, Ambrós A, Muñoz T, Soler JA, Aguilar G, Alba F, González-Higueras E. **Dexamethasone treatment for the acute respiratory distress syndrome: a multicentre, randomised controlled trial.** *Lancet Respiratory Medicine.* 8(3):267-276. I.F.: 25.094

2. Grünig E, MacKenzie A, Peacock AJ, Eichstaedt CA, Benjamin N, Nechwatal R, Ulrich S, Saxer S, Bussotti M, Sommaruga M, Ghio S, Gumbiene L, Palevièiûtë E, Jurevièienë E, Cittadini A, Stanziola AA, Marra AM, Kovacs G, Olschewski H, Barberà JA, Blanco I, Spruit MA, Franssen FME, Vonk Noordegraaf A, Reis A, Santos M, Viamonte SG, Demeyer H, Delcroix M, Bossone E, Johnson M. **Standardized exercise training is feasible, safe, and effective in pulmonary arterial and chronic thromboembolic pulmonary hypertension: results from a large European multicentre randomized controlled trial. European Heart Journal.** *Eur Heart J.* 2020 Nov 24:ehaa696. doi: 10.1093/eurheartj/ehaa696. I.F.: 22.673

3. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network**. Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

4. Kacmarek, Robert M; Villar, Jesus; Parrilla, Dacil; Alba, Francisco; Solano, Rosario; Liu, Songqiao; Montiel, Raquel; Rico-Feijoo, Jesus; Vidal, Anxela; Ferrando, Carlos; Murcia, Isabel; Corpas, Ruth; Gonzalez-Higueras, Elena; Sun, Qin; Pinedo, Cesar E; Pestana, David; Martinez, Domingo; Aldecoa, Cesar; Anon, Jose M; Soro, Marina; Gonzalez-Martin, Jesus M; Fernandez, Cristina; Fernandez, Rosa L. **Neurally adjusted ventilatory assist in acute respiratory failure: a randomized controlled trial.** *Intensive Care Medicine.* 46(12):2327-2337. I.F.: 17.679

5. Ripollés-Melchor J; Abad-Motos A; Díez-Remesal Y; Aseguinolaza-Pagola M; Padin-Barreiro L; Sánchez-Martín R; Logroño-Egea M; Catalá-Bauset JC; García-Orallo S; Bisbe E; Martín N; Suárez-de-la-Rica A; Cuéllar-Martínez AB; Gil-Trujillo S; Estupiñán-Jiménez JC; Villanova-Baraza M; Gil-Lapetra C; Pérez-Sánchez P; Rodríguez-García N; Ramiro-Ruiz A; Farré-Tebar C; Martínez-García A; Arauzo-Pérez P; García-Pérez C; Abad-Gurumeta A; Miñambres-Villar MA; Sánchez-Campos A; Jiménez-López I; Tena-Guerrero JM; Marín-Peña O; Sánchez-Merchante M; Vicente-Gutiérrez U; Cassinello-Ogea MC; Ferrando-Ortolá C; Berges-Gutiérrez H; Fernanz-Antón J; Gómez-Ríos MA; Bordonaba-Bosque D; Ramírez-Rodríguez JM; García-Erce JA; Aldecoa C; Postoperative Outcomes Within Enhanced Recovery After Surgery Protocol in Elective Total Hip and Knee Arthroplasty (POWER2) Study Investigators Group for the Spanish Perioperative Audit and Research Network (REDGERM). **Association Between Use of Enhanced Recovery After Surgery Protocol and Postoperative Complications in Total Hip and Knee Arthroplasty in the Postoperative Outcomes Within Enhanced Recovery After Surgery Protocol in Elective Total Hip and Knee Arthroplasty Study (POWER2)**. *Jama Surgery.* 155(4):e196024. I.F.: 13.625

6. Ikemori R, Gabasa M, Duch P, Vizoso M, Bragado P, Arshakyan M, Luis IC, Marín A, Morán S, Castro M, Fuster G, Gea-Sorli S, Jauset T, Soucek L, Montuenga LM, Esteller M, Monsó E, Peinado VI, Gascon P, Fillat C, Hilberg F, Reguart N, Alcaraz J. **Epigenetic SMAD3 repression in tumor-associated fibroblasts impairs fibrosis and response to the antifibrotic drug nintedanib in lung squamous cell carcinoma**. *Cancer Research.* 80(2):276-290. I.F.: 9.727

7. Ferrando C, Aldecoa C, Unzueta C, Belda FJ, Librero J, Tusman G, Suárez-Sipmann F, Peiró S, Pozo N, Brunelli A, Garutti I, Gallego C, Rodríguez A, García JI, Díaz-Cambronero O, Balust J, Redondo FJ, de la Matta M, Gallego-Ligorit L, Hernández J, Martínez P, Pérez A, Leal S, Alday E, Monedero P, González R, Mazzirani G, Aguilar G, López-Baamonde M, Felipe M, Mugarra A, Torrente J, Valencia L, Varón V, Sánchez S, Rodríguez B, Martín A, India I, Azparren G, Molina R, Villar J, Soro M, iPROVE-O2 Network. **Effects of oxygen on post-surgical infections during an individualised perioperative open-lung ventilatory strategy: a randomised controlled trial.** *British Journal Of Anaesthesia.* 124(1):110-120. I.F.: 6.880

8. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

9. Castellano JJ, Marrades RM, Molins L, Viñolas N, Moises J, Canals J, Han B, Li Y, Martinez D, Monzó M, Navarro A. **Extracellular vesicle lincRNA-p21 expression in tumor-draining pulmonary vein defines prognosis in NSCLC and modulates endothelial cell behavior.** *Cancers (Basel).* 12(3):734. I.F.: 6.126

10. Gimeno-Santos E, Coca-Martinez M, Arguis MJ, Navarro R, Lopez-Hernandez A, Castel MA, Romano B, Lopez-Baamonde M, Sandoval E, Farrero M, Sanz M, Bofill A, Martinez-Palli G. **Multimodal prehabilitation as a promising strategy for preventing physical deconditioning on the heart transplant waiting list.** *European Journal Of Preventive Cardiology.* 27(19):2367-2370. I.F.: 5.864

11. Sanz-de la Garza M, Vaquer-Seguí A, Durán K, Blanco I, Burgos F, Alsina X, Prat-González S, Bijnens B, Sitges M. **Pulmonary transit of contrast during exercise is related to improved cardio-pulmonary performance in highly trained endurance athletes.** *European Journal Of Preventive Cardiology.* 27(14):1504-1514. I.F.: 5.864

12. Smolders VFED, Rodríguez C, Morén C, Blanco I, Osorio J, Piccari L, Bonjoch C, Quax PHA, Peinado VI, Castellà M, Barberà JA, Cascante M, Tura-Ceide O. **Decreased glycolysis as metabolic fingerprint of endothelial cells in chronic thromboembolic pulmonary hypertension.** *American Journal Of Respiratory Cell and Molecular Biology.* 63(5):710-713. I.F.: 5.373

13. Calvo M, González R, Seijas N, Vela E, Hernández C, Batiste G, Miralles F, Roca J, Cano I, Jané R. **Health Outcomes from Home Hospitalization: Multisource Predictive Modeling.** *Journal Of Medical Internet Research.* 22(10):e21367. I.F.: 5.034

14. Blanco I, Valeiro B, Torres-Castro R, Barberán-García A, Torralba Y, Moisés J, Sebastián L, Osorio J, Rios J, Gimeno-Santos E, Roca J, Barberà JA. **Effects of Pulmonary Hypertension on Exercise Capacity in Patients With Chronic Obstructive Pulmonary Disease.** *Archivos de Bronconeumología.* 56(19):499-505. I.F.: 4.957

15. Moisés J, Navarro A, Castellano JJ, Viñolas N, Molins L, Canals J, Han B, Martín J, Ramirez J, Frigola G, Marrades RM, Monzó M. **Long Non-Coding RNA NANCI/NKX2-1 Duplex Impacts Prognosis in Stage I Non-Small-Cell Lung Cancer**. *Archivos de Bronconeumología.* 56(10):630-636. I.F.: 4.957

16. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities**. *Annals Of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

17. George M, Hernandez C, Smith S, Narsavage G, Kapella MC, Carno M, Guttormson J, Disler RT, Hart DE, Chlan LL, Happ MB, Chen Z, Hetland B, Hutchinson AF, Jonsdottir H, Redeker NS, Schell-Chaple H, Fletcher M, Yorke J. **Nursing research priorities in critical care, pulmonary, and sleep: International Delphi survey of nurses, patients, and caregivers an official American Thoracic Society workshop report.** *Annals Of The American Thoracic Society.* 17(1):1-10. I.F.: 4.836

18. Garutti I, Errando CL, Mazzinari G, Bellón JM, Díaz-Cambronero O, Ferrando C, iPROVE network. **Spontaneous recovery of neuromuscular blockade is an independent risk factor for postoperative pulmonary complications after abdominal surgery: A secondary analysis.** *European Journal Of Anaesthesiology.* 37(3):203-211. I.F.: 4.500

19. Happé C, Kurakula K, Sun XQ, da Silva Goncalves Bos D, Rol N, Guignabert C, Tu L, Schalij I, Wiesmeijer KC, Tura-Ceide O, Vonk Noordegraaf A, de Man FS, Bogaard HJ, Goumans MJ . **The BMP Receptor 2 in Pulmonary Arterial Hypertension: When and Where the Animal Model Matches the Patient.** *Cells.* 9(6):1422. I.F.: 4.366

20. Baltaxe E, Embid C, Aumatell E, Martínez M, Barberan-Garcia A, Kelly J, Eaglesham J, Herranz C, Vargiu E, Montserrat JM, Roca J, Cano I. **Integrated Care Intervention Supported by a Mobile Health Tool for Patients Using Noninvasive Ventilation at Home: Randomized Controlled Trial.** *JMIR Mhealth And Uhealth.* 8(4):e16395. I.F.: 4.313

21. Barbeta E, Ceccato A, Artigas A, Ferrer M, Fernández L, López R, Bueno L, Motos A, Bassi GL, Mellado R, Ferrando C, Palomeque AC, Panigada M, Gabarrús A, de Mendoza D, Torres A. **Characteristics and Outcomes in Patients with Ventilator-Associated Pneumonia Who Do or Do Not Develop Acute Respiratory Distress Syndrome.** *Journal Of Clinical Medicine.* 9(11):3508. I.F.: 3.303

22. Giner Donaire, Jordi; Diaz Perez, David; Hernandez, Carme; Cabestre, Roberto. **Study to Evaluate Satisfaction with the Inhalation Device Used by Patients with Asthma or Chronic Obstructive Pulmonary Disease and the Association with Adherence and Disease Control.** *Journal Of Aerosol Medicine And Pulmonary Drug Delivery.* 33(3):153-160. I.F.: 2.846

23. Callejo M, Mondejar-Parreño G, Esquivel-Ruiz S, Olivencia MA, Moreno L, Blanco I, Escribano-Subias P, Cogolludo A, Barbera JA, Perez-Vizcaino F. **Total, Bioavailable, and Free Vitamin D Levels and Their Prognostic Value in Pulmonary Arterial Hypertension**. *Journal Of Clinical Medicine.* 9(2):448. I.F.: 3.303

24. Escribano-Subias P, López R, Almenar L, Lázaro M, Forn I, Torrent A, Blanco I, Barberà JA, PRACMA investigators. **Changes in REVEAL risk score in patients with pulmonary arterial hypertension treated with macitentan in clinical practice: results from the PRACMA study.** *BMC Pulmonary Medicine.* 20(1):154. I.F.: 2.813

25. Torres-Castro R, Vasconcello-Castillo L, Alsina-Restoy X, Solis-Navarro L, Burgos F, Puppo H, Vilaró J. **Respiratory function in patients post-infection by COVID-19: a systematic review and meta-analysis.** *Pulmonology.* S2531(0437):20-30245-2. I.F.: 2.778

26. Piccari L, Del Pozo R, Blanco I, García-Lucio J, Torralba Y, Tura-Ceide O, Moises J, Sitges M, Peinado VI, Barberà JA. **Association Between Systemic and Pulmonary Vascular Dysfunction in COPD.** *International Journal Of Chronic Obstructive Pulmonary Disease.* 15:2037-2047. I.F.: 2.772

27. Bernardino G, Sanz de la Garza M, Domenech-Ximenos B, Prat-Gonzàlez S, Perea RJ, Blanco I, Burgos F, Sepulveda-Martinez A, Rodriguez-Lopez M, Crispi F, Butakoff C, González Ballester MA, De Craene M, Sitges M, Bijnens B.

Three-dimensional regional bi-ventricular shape remodeling is associated with exercise capacity in endurance athletes. *European Journal Of Applied Physiology.* 120(6):1227-1235. I.F.: 2.580

28. Ferrando C, Suárez-Sipmann F, Librero J, Pozo N, Soro M, Unzueta C, Brunelli A, Peiró S, Llombart A, Balust J, Aldecoa C, Díaz-Cambronero O, Franco T, Redondo FJ, Garutti I, García JI, Ibáñez M, Granell M, Rodríguez A, Gallego L, de la Matta M, Marcos JM, García J, Mazzinari G, Tusman G, Villar J, Belda J, Individualized PeRioperative Openlung VEntilation (iPROVE) Network. **A noninvasive postoperative clinical score to identify patients at risk for postoperative pulmonary complications: The air-test score.** *Minerva Anestesiológica.* 86(4):404-415. I.F.: 2.498

29. Coca-Martinez M, Lopez-Hernandez A, Montane-Muntane M, Arguis MJ, Gimeno-Santos E, Navarro-Ripoll R, Perdomo J, Lopez-Baamonde M, Rios J, Moises J, Sanz de la Garza M, Sandoval E, Romano B, Sebio R, Dana F, Martinez-Palli G. **Multimodal prehabilitation as strategy for reduction of postoperative complications after cardiac surgery: a randomised controlled trial protocol.** *BMJ Open.* 10(12):e039885. I.F.: 2.496

30. Rutten-van Mölken M, Karimi M, Leijten F, Hoedemakers M, Looman W, Islam K, Askildsen JE, Kraus M, Ercevic D, Struckmann V, Gyorgy Pitter J, Cano I, Stokes J, Jonker M, SELFIE consortium. **Comparing patients' and other stakeholders' preferences for outcomes of integrated care for multimorbidity: a discrete choice experiment in eight European countries.** *BMJ Open.* 10(10):e037547. I.F.: 2.496

31. Ausania F, Al Shwely F, Farguell J, Beltrán J, Calatayud D, Sánchez-Cabús S, Ferrer J, Rull R, Fuster J, García-Valdecasas JC, Martínez-Palli G, Fondevila C. **Factors Associated with Prolonged Recipient Hepatectomy Time During Liver Transplantation: A Single-Centre Experience.** *World Journal Of Surgery.* 44(10):3486-3490. I.F.: 2.234

32. Tusman G, Acosta CM, Ochoa M, Böhm SH, Gogniat E, Martinez Arca J, Scandurra A, Madorno M, Ferrando C, Suarez Sipmann F. **Multimodal non-invasive monitoring to apply an open lung approach strategy in morbidly obese patients during bariatric surgery.** *Journal Of Clinical Monitoring and Computing.* 34(5):1015-1024. I.F.: 2.108

33. Monterde D, Vela E, Clèries M, Garcia-Eroles L, Roca J, Pérez-Sust P. **Multimorbidity as a predictor of health service utilization in primary care: a registry-based study of the Catalan population.** *BMC Family Practice.* 21(1):39. I.F.: 2.022

34. Barberan-Garcia A, Navarro-Ripoll R, Sánchez-Lorente D, Moisés-Lafuente J, Boada M, Messaggi-Sartor M, González-Vallespí L, Montané-Muntané M, Alsina-Restoy X, Campero B, Lopez-Baamonde M, Romano-Andrioni B, Guzmán R, López A, Arguis MJ, Roca J, Martinez-Palli G. **Cost-effectiveness of a technology-supported multimodal prehabilitation program in moderate-to-high risk patients undergoing lung cancer resection: randomized controlled trial protocol.** *BMC Health Services Research.* 20(1):207. I.F.: 1.987

35. Czypionka T, Kraus M, Reiss M, Baltaxe E, Roca J, Ruths S, Stokes J, Struckmann V, Haček RT, Zemplényi A, Hoedemakers M, Rutten-van Mölken M. **The patient at the centre: evidence from 17 European integrated care programmes for persons with complex needs.** *BMC Health Services Research.* 20(1):1102. I.F.: 1.987

36. Villar J, Añón JM, Ferrando C, Aguilar G, Muñoz T, Ferreres J, Ambrós A, Aldecoa C, Suárez-Sipmann F, Thorpe KE, Jüni P, Slutsky AS, DEXA-COVID19 Network. **Efficacy of dexamethasone treatment for patients with the acute respiratory distress syndrome caused by COVID-19: Study protocol for a randomized controlled superiority trial.** *Trials.* 21(1):717. I.F.: 1.883

37. Borque-Espinosa A, Burgos F, Dennison S, Laughlin R, Manley M, Capaccioni Azzati R, Fahlman A. **Pulmonary function testing as a diagnostic tool to assess respiratory health in bottlenose dolphins Tursiops truncatus.** *Diseases Of Aquatic Organisms.* 138:17-27. I.F.: 1.368

Review / I.F.: 16.665

1. Ramírez P, Otero R, Barberà JA. **Chronic Pulmonary Thromboembolic Disease.** *Archivos de Bronconeumología.* 56(5):314-321. I.F.: 4.957

2. Callejo M, Barberá JA, Duarte J, Perez-Vizcaino F. **Impact of Nutrition on Pulmonary Arterial Hypertension.** *Nutrients.* 12(1):169. I.F.: 4.546

3 Vogelmeier CF, Román-Rodríguez M, Singh D, Han MK, Rodríguez-Roisin R, Ferguson GT. **Goals of COPD treatment: Focus on symptoms and exacerbations.** *Respiratory Medicine.* 166:105938. I.F.: 3.095

4. Blanco I, Tura-Ceide O, Peinado VI, Barberà JA. **Updated perspectives on pulmonary hypertension in COPD.** *International Journal Of Chronic Obstructive Pulmonary Disease.* 15:1315-1324. I.F.: 2.772

5. Ashrafian H; Sounderajah V; Glen R; Ebbels T; Blaise BJ; Kalra D; Kultima K; Spjuth O; Tenori L; Salek R; Kale N; Haug K; Schober D; Rocca-Serra P; O'Donovan C; Steinbeck C; Cano I; de Atauri P; Cascante M. **Metabolomics - the stethoscope for the 21st century.** *Medical Principles And Practice.* I.F.: 1.295

Letters / I.F.: 12.339

1. Casanova GS, Amaro R, Soler N, Sánchez M, Badía JR, Barberà JA, Agustí A. **An imported case of e-cigarette or vaping associated lung injury in Barcelona.** *European Respiratory Journal.* 55(2):1902076. I.F.: 12.339

Editorial / I.F.: 14.871

1. Martínez Llorens J, Burgos F, Galdiz JB. **Lung Function is Not Outdated.** *Archivos de Bronconeumología.*56(6):345-346. I.F.: 4.957

2. Burgos Rincón F, Martínez Llorens J, Cordovilla Pérez R. **Impact of the COVID-19 Pandemic on Lung Function Laboratories: Considerations for "Today" and the "Day After".** *Archivos de Bronconeumología.* 56(10):611-612. I.F.: 4.957

3. Torres-Duque CA, Casas A, Zabert G, Jardim JR, Celli B, Rodríguez-Roisin R. **The Latin American Thoracic Association**

(ALAT): 30 Years of History. *Archivos de Bronconeumología.* 56(7):413-415. I.F.: 4.957

Clinical Guidelines / I.F.: 22.022

1. Nathan SD, Barbera JA, Gaine SP, Harari S, Martinez FJ, Olschewski H, Olsson KM, Peacock AJ, Pepke-Zaba J, Provencher S, Weissmann N, Seeger W. **Pulmonary hypertension in chronic lung disease and hypoxia**. *European Respiratory Journal.* 53(1):1801914. I.F.: 12.339

2. Cinesi Gómez C; Peñuelas Rodríguez Ó; Luján Torné M; Egea Santaolalla C; Masa Jiménez JF; García Fernández J; Carratalá Perales JM; Heili-Frades SB; Ferrer Monreal M; de Andrés Nilsson JM; Lista Arias E; Sánchez Rocamora JL; Garrote JI; Zamorano Serrano MJ; González Martínez M; Farrero Muñoz E; Mediano San Andrés O; Rialp Cervera G; Mas Serra A; Hernández Martínez G; de Haro López C; Roca Gas O; Ferrer Roca R; Romero Berrocal A; Ferrando Ortola C. **Clinical Consensus Recommendations Regarding Non-Invasive Respiratory Support in the Adult Patient with Acute Respiratory Failure Secondary to SARS-CoV-2 infection**. *Archivos de Bronconeumología.* 56 Suppl 2(2):11-18. I.F.: 4.957

3. Cinesi Gómez C, Peñuelas Rodríguez Ó, Luján Torné M, Egea Santaolalla C, Masa Jiménez JF, García Fernández J, Carratalá Perales JM, Heili-Frades SB, Ferrer Monreal M, de Andrés Nilsson JM, Lista Arias E, Sánchez Rocamora JL, Garrote JI, Zamorano Serrano MJ, González Martínez M, Farrero Muñoz E, Mediano San Andrés O, Rialp Cervera G, Mas Serra A, Hernández Martínez G, de Haro López C, Roca Gas O, Ferrer Roca R, Romero Berrocal A, Ferrando Ortola C. **Clinical consensus recommendations regarding non-invasive respiratory support in the adult patient with acute respiratory failure secondary to SARS-CoV-2 infection.** *Medicina Intensiva.* 44(7):429-438. I.F.: 2.363

4. Martin Delgado, M C; Aviles-Jurado, F X; Escudero, J Alvarez; Aldecoa Alvarez-Santuyano, C; de Haro Lopez, C; de Cerio Canduela, P Diaz; Ferrandis Pereperez, E; Ferrando Ortola, C; Ferrer Roca, R; Hernandez Tejedor, A; Lopez Alvarez, F; Monedero Rodriguez, P; Ortiz Suner, A; Parente Arias, P; Planas Roca, A; Plaza Mayor, G; Rascado Sedes, P; Sistiaga Suarez, J A; Vera Ching, C; Vadell, R Villalonga; Bernal-Sprekelsen, M. **Consensus document of the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC), the Spanish Society of Otorhinolaryngology and Head and Neck Surgery (SEORL-CCC) and the Spanish Society of Anesthesiology and Resuscitation (SEDAR) on tracheotomy in patients with COVID-19 infection.** Medicina Intensiva. 44(8):493-499. I.F.: 2.363

Consortium Publications / I.F.: 14.785

1. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

GRANTS FOR RESEARCH IN PROGRESS

Barberà JA. **Recerca traslacional en malalties pulmonars.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00617
Duration: 01/01/2017-30/09/2021

Barberà JA. **Caracterización fenotípica de la hipertensión pulmonar en las enfermedades respiratorias.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00383
Duration: 01/01/2019-31/12/2021

Barberan A. **Cost-efectivitat d'un programa de prehabilitació multimodal en pacients d'alt risc candidats a cirurgia de resecció de parènquima pulmonar: Assaig clínic aleatoritzat.**
Sponsored by: Fundació Catalana de Pneumologia (FUCAP).
FUCAP_MARIARAVA19_01
Duration: 05/04/2019-04/04/2022

Barberan A. **Coste-efectividad de un programa de prehabilitación multimodal en pacientes de alto riesgo candidatos a cirugía de resección de parénquima pulmonar: Ensayo controlado aleatorizado.**
Sponsored by: Sociedad Española de Neumología y Cirugía Torácica (SEPAR).
791/2018
Duration: 01/01/2018-31/12/2021

Ferrando C. **Reducción de complicaciones postoperatorias pulmonares mediante una estrategia ventilatoria perioperatoria de apertura pulmonar individualizada en pacientes intervenidos de cirugía torácica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01611
Duration: 21/05/2019-31/12/2021

Martínez-Palli G, Arguis MJ. **Implementación de un programa de prehabilitación trimodal como estrategia de optimización prequirúrgica en cirugía cardíaca.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00852
Duration: 01/01/2018-31/12/2021

Peinado VI. **Tratamiento de la hipertensión pulmonar en enfermedades pulmonares crónicas: caracterización y validación de biomarcadores pronósticos e identificación de posibles estrategias terapéuticas en el eje sGC-PKG.**
Sponsored by: Sociedad Española de Neumología y Cirugía Torácica (SEPAR).
888/2019
Duration: 01/01/2019-01/01/2022

Roca J. **Atenció personalitzada del malalt crònic en un marc de salut digital.**
Sponsored by: Fundació Eurecat.
ACCIO_COMRDI15-1-0016-08
Duration: 15/10/2016-15/01/2021

Roca J. **HEALTH-CIRCUIT: Smart and collaborative health management.**
Sponsored by: Barcelona Mobile Ventures.
MWCapital_COLLIDER19_001
Duration: 01/09/2019-30/06/2020

Roca J. **Smart PITeS: modelos predictivos para el soporte a la gestión de casos en un marco de salud digital.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00841
Duration: 01/01/2019-31/12/2021

Roca J. **Personalised Connected Care for Complex Chronic Patients.**
Sponsored by: European Commission.
CE_H2020-PHC-2015-1s
Duration: 01/04/2016-31/12/2020

Roca J. **Patient empowerment for major surgery preparation @home.**
Sponsored by: European Commission.
CE_EIT_1stI19
Duration: 01/01/2019-31/12/2021

Roca J. **Catalan open innovation hub - Twining.**
Sponsored by: European Commission.
CE_EIPonAHA_19
Duration: 01/12/2019-31/01/2021

Roca J. **Temporal disease map based stratification of depression-related multimorbidities: towards quantitative investigations of patient trajectories and predictions of multi-target drug candida.**
Sponsored by: European Commission and Generalitat de Catalunya.
CE_ERA_PerMed_19 and SLD003/19/00001
Duration: 01/03/2020-28/02/2023

Roca J. **Certify. Health.**
Sponsored by: European Commission.
CE_EIT_RapidCovid_20
Duration: 18/04/2020-31/12/2020

Roca J. **Joint Action on implementation of digitally enabled integrated person-centred care.**
Sponsored by: European Commission.
CE_HP-JA-03-2019
Duration: 01/10/2020-30/09/2023

Tura O. **Estudio del metabolismo y de la función endotelial en pacientes con hipertensión pulmonar tromboembólica: efecto de la estimulación de Riociguat.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. SOCAP_TLLIURE19_01
Duration: 05/04/2019-04/04/2021

Tura O. **Estudio del metabolismo y de la función endotelial en pacientes con hipertensión pulmonar tromboembólica: efecto de la estimulación de Riociguat.**
Sponsored by: Sociedad Española de Neumología y Cirugía Torácica (SEPAR).
907/2019
Duration: 01/01/2019-31/12/2022

Tura O. **Disfunción endotelial, metobolómica y biomarcadores en pacientes con el Síndrome de Apnea Obstructiva del Sueño (SAOS).**
Sponsored by: Sociedad Española de Neumología y Cirugía Torácica (SEPAR).
569/2017
Duration: 01/01/2017-31/12/2020

DOCTORAL THESIS

Barberà JA. **Assessment of soluble guanylate cyclase stimulation in experimental chronic obstructive pulmonary disease.**
PhD student. Tanja Paul

Tura-Ceide O. **Functional and metabolic characterization of endothelial cells in chronic thromboembolic pulmonary hypertension.**
PhD student. Valérie Smolders

2.4 Translational computing in cardiology

LOCATION
Mallorca 183

KEYWORDS
1. **Cardiovascular pathophysiology**
2. **Machine learning**
3. **Artificial intelligence**
4. **Computational modelling**
5. **Cardiac imaging**
6. **Image processing**

RELATED DISEASES
1. **Cardiovascular diseases**

Original publications

TOTAL	6
IF	36,14
Mean IF	6,02
Q1	83%
D1	50%
MA	33%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Bart Bijnens (HCB)
T. 93 227 57 07
bart.bijnens@idibaps.org

POST-DOCTORAL RESEARCHER
Patricia García Cañadilla (IDIBAPS)
Mariana Nogueira (IDIBAPS)
Sergio Sánchez Martínez (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Pablo-Miki Martí Castellote (IDIBAPS)

PROBLEM

Cardiovascular diseases remain a major cause of death and loss of quality of life. While current prevention and treatment strategies have delayed symptoms and improved life expectancy, this has resulted in an increasing number of patients now requiring careful follow-up and subsequent therapy.

To optimally treat these chronic patients, a detailed assessment and a thorough understanding of how their heart is working is essential. Imaging is often used for this, but the images have to be analysed and summarised into relevant information to enable personal decision-making.

Given the wealth of available imaging and other diagnostic data, computational tools such as image processing, computational modelling and machine learning are required to enable processing of all the information for the treating clinician.

APPROACH

The group aims at developing and investigating computing for understanding each individual heart, in order to improve diagnosis, prognosis and therapy. We work in an interdisciplinary way combining biomedical engineering, physics, and mathematics with basic research, as well as clinical expertise, in order to link technological and theoretical science with physiological and clinical knowledge.

We combine medical imaging with computer models representing all relevant details of the working heart as well as with knowledge about therapies. Additionally, the wealth of information available from any single individual and groups of patients from routine practice and clinical trials can be integrated in an understandable way by using the latest machine learning and artificial intelligence methods.

IMPACT

Modern cardiology relies on the detailed (imaging) assessment of the function and structure of the heart for selecting targeted prevention and drug, device or surgical therapies. A wealth of data is available in clinical practice but integrating it into a consistent representation of an individuals' heart is highly challenging. However, this is crucial in order to choose the best personalised care and is also needed to improve our understanding of cardiovascular diseases and their impact in different groups of individuals.

We aim at providing computing approaches to help this data integration as well as interpretation for both individuals and populations alike. These methods include image analysis and interpretation and machine learning for data integration and decision-making, as well as tools for better and more targeted data acquisition.

RESEARCH LINES

- Cloud-based tools for data integration and analysis.

- Computational modelling of the cardiovascular system.

- Deformation and function analysis in different cardiovascular diseases.

- Machine learning for clinical diagnosis and decision making.

- Quantification of structural and shape remodelling of the heart.

- Synchrotron-based x-ray phase-contrast imaging.

PUBLICATIONS

Originals / **I.F.: 36.139**

1. Bernardino G, Benkarim O, Sanz-de la Garza M, Prat-Gonzàlez S, Sepulveda-Martinez A, Crispi F, Sitges M, Butakoff C, De Craene M, Bijnens B, González Ballester MA. **Handling confounding variables in statistical shape analysis - application to cardiac remodelling.** *Medical Image Analysis*. 65(101792):101792. I.F.: 11.148

2. Gabriel Bernardino; Amir Hodzic; Helene Langet; Mathieu De Craene; Miguel Angel González Ballester; Eric Saloux; Bart Bijnens. **Volumetric parcellation of the right ventricle for regional geometric and functional assessment**. *Communications of the Acm*. 71(102044). I.F.: 6.988

3. Sanz-de la Garza M, Vaquer-Seguí A, Durán K, Blanco I, Burgos F, Alsina X, Prat-González S, Bijnens B, Sitges M. **Pulmonary transit of contrast during exercise is related to improved cardio-pulmonary performance in highly trained endurance athletes.** *European Journal Of Preventive Cardiology*. 27(14):1504-1514. I.F.: 5.864

4. Soveral I, Crispi F, Guirado L, García-Otero L, Torres X, Bennasar M, Sepúlveda-Martínez Á, Nogué L, Gratacós E, Martínez JM, Bijnens B, Friedberg M, Gómez O. **Cardiac filling and ejection time fractions by pulsed Doppler: fetal nomograms and potential clinical application.** *Ultrasound In Obstetrics & Gynecology*. I.F.: 5.571

5. Novo Matos J, Garcia-Canadilla P, Simcock IC, Hutchinson JC, Dobromylskyj M, Guy A, Arthurs OJ, Cook AC, Luis Fuentes V . **Micro-computed tomography (micro-CT) for the assessment of myocardial disarray, fibrosis and ventricular mass in a feline model of hypertrophic cardiomyopathy.** *Scientific Reports (Nature Publisher Group)*. 10(1):20169. I.F.: 3.998

6. Loncaric F, Nunno L, Mimbrero M, Marciniak M, Fernandes JF, Tirapu L, Fabijanovic D, Sanchis L, Doltra A, Cikes M, Lamata P, Bijnens B, Sitges M . **Basal Ventricular Septal Hypertrophy in Systemic Hypertension.** *American Journal Of Cardiology*. 125(9):1339-1346. I.F.: 2.570

Review / **I.F.: 8.198**

1. Dejea H; Bonnin A; Cook AC; Garcia-Canadilla P. **Cardiac multi-scale investigation of the right and left ventricle ex vivo: a review.** *Cardiovascular Diagnosis And Therapy*. 10(5):1701-1717. I.F.: 2.615

2. Garcia-Canadilla P, Sanchez-Martinez S, Crispi F, Bijnens B. **Machine Learning in Fetal Cardiology: What to Expect.** *Fetal Diagnosis and Therapy*. 47(5):363-372. I.F.: 2.095

3. Crispi F, Sepúlveda-Martínez Á, Crovetto F, Gómez O, Bijnens B, Gratacós E. **Main Patterns of Fetal Cardiac Remodeling.** *Fetal Diagnosisand Therapy*. 47(5):337-344. I.F.: 2.095

4. Loncaric F; Cikes M; Sitges M; Bijnens B. **Comprehensive data integration-Toward a more personalized assessment of diastolic function.** *Echocardiography-A Journal of Cardiovascular Ultrasound and Allied Techniques*. 37(11):1926-1935. I.F.: 1.393

GRANTS FOR RESEARCH IN PROGRESS

Bijnens B. **Fenotipado tisular y funcional de la miocardiopatía hipertrófica con imagen multimodal: caracterización integral y multiescalar no invasiva.**
Sponsored by: Fundación Casa del Corazón (FEC). SEC_FEC-INV-CLI20/028
Duration: 29/10/2020-28/10/2021

Bijnens B. **Incorporating Machine Learnig approaches to optimize the clinical workflow and throughput in pediatric echocardiology.** Hitachi Healtcare. 5870-20
Duration: 01/09/2020-28/02/22

DOCTORAL THESES

Bijnens B. **Machine learning to support exploring and exploiting real-world clinical longitudinal data.**
PhD Student: Mariana Nogueira

2.5 Translational research in pulmonary vascular diseases: cell proliferation and apoptotic mechanisms in pulmonary arterial hypertension

LOCATION
CELLEX building, floor 2A

KEYWORDS
1. **Pulmonary hypertension**
2. **Proliferation-apoptosis pathway**
3. **Hypoxia**
4. **Animal models**

RELATED DISEASES
1. **Pulmonary arterial hypertension**
2. **Connective tissue diseases**
3. **Congenital heart diseases**
4. **Cronich thromboembolic pulmonary hypertension**

GROUP INVOLVED IN
CIBERES
AGAUR_SGR17: 617

Original publications

TOTAL	16
IF	89,53
Mean IF	5,60
Q1	56%
D1	19%
MA	13%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Isabel Blanco (HCB-IDIBAPS)
T. 93 227 57 47
iblanco2@idibaps.org

ASSISTANT RESEARCHERS
Maria Isabel Marquina (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Elena Gimeno (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Xavier Alsina (HCB)
Tanya Elisa Orizaga (FCRB)
Jeisson Osorio (CIBER)

TECHNICIANS
Àngela Vea (IDIBAPS)

NURSING STAFF
Ana Maria Ramírez (HCB)

ADMINISTRATIVE STAFF
Maria Dolores Sanz (FCRB)

PROBLEM

Pulmonary hypertension (PH) is a disease in which the blood pressure of the pulmonary arteries is abnormally high. It usually develops in association with pulmonary artery diseases, and also as a complication in more common lung and heart diseases.

The most significant clinical repercussion of PH is that it gives rise to an overload in the right ventricle, causing this to fail and resulting in death.

It is important to correctly diagnose and describe the mechanism that produces PH, as its treatment varies, depending on the type of hypertension.

Today, different drugs are available that offer enormous benefits to patients with pulmonary hypertension, but it is not yet possible to say that a cure exists for this disease. The group's goal is to gain deeper knowledge of the mechanisms responsible for PH and to find new activity biomarkers of the disease and new therapeutic lines to correct the underlying problem.

APPROACH

Pulmonary arterial hypertension is a disease of the small pulmonary arteries in which blood vessel diameter is gradually reduced due to an increase in the thickness of the vessel walls (vasoconstriction). This leads to an increase in pulmonary vascular resistance (PVR) which causes right ventricular failure and death.

Recent therapeutic advances have managed to increase survival and improve the quality of life of patients with PH, but the drugs available today are unable to alter the progression of the disease and the structural lesions of the pulmonary arteries, acting simply as vasodilators.

In the group's opinion, in addition to vasodilators, it is necessary to find new signalling pathways that could be more appropriate therapeutic targets. In this respect, it is proposed to not only work in the laboratory with animal and cell models, but also to work with blood and tissue samples from patients undergoing lung transplants.
The group's line of research consists of evaluating potential therapeutic targets and biomarkers of disease activity and progression, aimed at reversing the proliferative remodelling phenotype in PH.

IMPACT

Molecular study and clinical repercussions of pulmonary arterial hypertension and chronic pulmonary thromboembolic disease.

A pulmonary artery hypertension model has been set up in rodents consisting of exposure to hypoxia related to the administration of a VEGF inhibitor. This model reproduces the disease and identifies new potential therapeutic targets, in order to reverse the pro-proliferative and anti-apoptotic phenotype.

Various members of the group belong to the functional pulmonary hypertension unit at the Hospital Clínic, the most active unit in Catalonia and the second most active in Spain. The unit is accredited as an Expert Referral Unit by the Catalan Health Service (CatSalut), as a CSUR (referral centres, services and units) by the Spanish Ministry of Health and as a healthcare provider of the European Reference Network on Rare Lung Diseases (ERN-LUNG), established by the European Commission, thus increasing its capacity to take on translational research projects and participate in international clinical trials.

RESEARCH LINES

- Clinical research in pulmonary hypertension.

- Interventions on lifestyle: exercise and other non-pharmacological actions to improve ph.

- Proliferation and apoptosis in pulmonary arterial hypertension: biomarkers and new therapies.

PUBLICATIONS

Originals / I.F.: 89.527

1. Grünig E, MacKenzie A, Peacock AJ, Eichstaedt CA, Benjamin N, Nechwatal R, Ulrich S, Saxer S, Bussotti M, Sommaruga M, Ghio S, Gumbiene L, Palevičiūtė E, Jurevičienė E, Cittadini A, Stanziola AA, Marra AM, Kovacs G, Olschewski H, Barberà JA, Blanco I, Spruit MA, Franssen FME, Vonk Noordegraaf A, Reis A, Santos M, Viamonte SG, Demeyer H, Delcroix M, Bossone E, Johnson M. **Standardized exercise training is feasible, safe, and effective in pulmonary arterial and chronic thromboembolic pulmonary hypertension: results from a large European multicentre randomized controlled trial.** *European Heart Journal.* 42(23):2284-2295. I.F.: 22.673

2. Alcaraz-Serrano V, Gimeno-Santos E, Scioscia G, Gabarrús A, Navarro A, Herrero-Cortina B, Amaro R, Fernández-Barat L, Torres A. **Association between physical activity and risk of hospitalisation in bronchiectasis.** *European Respiratory Journal.* 55(6):1902138. I.F.: 12.339

3. Gimeno-Santos E, Coca-Martinez M, Arguis MJ, Navarro R, Lopez-Hernandez A, Castel MA, Romano B, Lopez-Baamonde M, Sandoval E, Farrero M, Sanz M, Bofill A, Martinez-Palli G. **Multimodal prehabilitation as a promising strategy for preventing physical deconditioning on the heart transplant waiting list.** *European Journal Of Preventive Cardiology*. 27(19):2367-2370. I.F.: 5.864

4. Sanz-de la Garza M, Vaquer-Seguí A, Durán K, Blanco I, Burgos F, Alsina X, Prat-González S, Bijnens B, Sitges M. **Pulmonary transit of contrast during exercise is related to improved cardio-pulmonary performance in highly trained endurance athletes.** *European Journal of Preventive Cardiology.* 27(14):1504-1514. I.F.: 5.864

5. Jimenez-Ruiz, C A; Martin, V; Alsina-Restoy, X; de Granda-Orive, J I; de Higes-Martinez, E; Garcia-Rueda, M; Genoves-Crespo, M; Lopez-Garcia, C; Lorza-Blasco, J J; Marquez, F L; Ramos-Pinedo, A; Riesco-Miranda, J A; Signes-Costa, J; Solano-Reina, S; Vaquero-Lozano, P; Rejas, J. **Cost-benefit analysis of funding smoking cessation before surgery.** *British Journal Of Surgery.* 107(8):978-994. I.F.: 5.676

6. Smolders VFED, Rodríguez C, Morén C, Blanco I, Osorio J, Piccari L, Bonjoch C, Quax PHA, Peinado VI, Castellà M, Barberà JA, Cascante M, Tura-Ceide O. **Decreased glycolysis as metabolic fingerprint of endothelial cells in chronic thromboembolic pulmonary hypertension.** *American Journal of Respiratory Cell And Molecular Biology.* 63(5):710-713. I.F.: 5.373

7. Blanco I, Valeiro B, Torres-Castro R, Barberán-García A, Torralba Y, Moisés J, Sebastián L, Osorio J, Rios J, Gimeno-Santos E, Roca J, Barberà JA. **Effects of Pulmonary Hypertension on Exercise Capacity in Patients With Chronic Obstructive Pulmonary Disease.** *Archivos de Bronconeumología.* 56(19):499-505. I.F.: 4.957

8. Puente-Maestú L, Ortega F, Pedro JGd, Rodríguez-Nieto MJ, Gómez-Seco J, Gáldiz B, Ojanguren I, Muñoz X, Blanco I, Burgos F, Rodríguez-Chiaradía DA, Gea J, García-Rio F. **Prediction Equations for Maximal Aerobic Capacity on Cycle Ergometer for the Spanish Adult Population.** *Archivos de Bronconeumología.* S0300-2896(20)30375-6. I.F.: 4.957

9. Callejo M, Mondejar-Parreño G, Esquivel-Ruiz S, Olivencia MA, Moreno L, Blanco I, Escribano-Subias P, Cogolludo A, Barbera JA, Perez-Vizcaino F. **Total, Bioavailable, and Free Vitamin D Levels and Their Prognostic Value in Pulmonary Arterial Hypertension.** *Journal Of Clinical Medicine.* 9(2):448. I.F.: 3.303

10. Cuerpo S, Palomo M, Hernández-González F, Francesqui J, Albacar N, Hernández C, Blanco I, Embid C, Sellares J. **Improving home oxygen therapy in patients with interstitial lung diseases: application of a noninvasive ventilation device.** *Therapeutic Advances In Respiratory Disease.* 14:1753466620963027. I.F.: 3.095

11. Escribano-Subias P, López R, Almenar L, Lázaro M, Forn I, Torrent A, Blanco I, Barberà JA, PRACMA investigators. **Changes in REVEAL risk score in patients with pulmonary arterial hypertension treated with macitentan in clinical practice: results from the PRACMA study.** *Bmc Pulmonary Medicine.* 20(1):154. I.F.: 2.813

12. Torres-Castro R, Vasconcello-Castillo L, Alsina-Restoy X, Solis-Navarro L, Burgos F, Puppo H, Vilaró J. **Respiratory function in patients post-infection by COVID-19: a systematic review and meta-analysis.** *Pulmonology*. S2531(0437):20-30245-2. I.F.: 2.778

13. Piccari, Lucilla; Del Pozo, Roberto; Blanco, Isabel; Garcia-Lucio, Jessica; Torralba, Yolanda; Tura-Ceide, Olga; Moises, Jorge; Sitges, Marta; Ivo Peinado, Victor; Albert Barbera, Joan. **Association Between Systemic and Pulmonary Vascular Dysfunction in COPD**. *International Journal of Chronic Obstructive Pulmonary Disease.* 15: 2037-2047. I.F.: 2.772

14. Bernardino G, Sanz de la Garza M, Domenech-Ximenos B, Prat-Gonzàlez S, Perea RJ, Blanco I, Burgos F, Sepulveda-Martinez A, Rodriguez-Lopez M, Crispi F, Butakoff C, González Ballester MA, De Craene M, Sitges M, Bijnens B . **Three-dimensional regional bi-ventricular shape remodeling is associated with exercise capacity in endurance athletes**. *European Journal of Applied Physiology.* 120(6):1227-1235. I.F.: 2.580

15. Coca-Martinez M, Lopez-Hernandez A, Montane-Muntane M, Arguis MJ, Gimeno-Santos E, Navarro-Ripoll R, Perdomo J, Lopez-Baamonde M, Rios J, Moises J, Sanz

de la Garza M, Sandoval E, Romano B, Sebio R, Dana F, Martinez-Palli G. **Multimodal prehabilitation as strategy for reduction of postoperative complications after cardiac surgery: a randomised controlled trial protocol.** *Bmj Open.* 10(12):e039885. I.F.: 2.496

16. Barberan-Garcia A, Navarro-Ripoll R, Sánchez-Lorente D, Moisés-Lafuente J, Boada M, Messaggi-Sartor M, González-Vallespí L, Montané-Muntané M, Alsina-Restoy X, Campero B, Lopez- Baamonde M, Romano-Andrioni B, Guzmán R, López A, Arguis MJ, Roca J, Martinez-Palli G. **Cost-effectiveness of a technology- supported multimodal prehabilitation program in moderate- to-high risk patients undergoing lung cancer resection: randomized controlled trial protocol.** *Bmc Health Services Research.* 20(1):207. I.F.: 1.987

Review / I.F.: 4.8

1. Blanco I, Tura-Ceide O, Peinado VI, Barberà JA. **Updated perspectives on pulmonary hypertension in COPD. International Journal of Chronic Obstructive** *Pulmonary Disease.* 15:1315-1324. I.F.: 2.772

2. Marti, Joan Daniel; McWilliams, David; Gimeno-Santos, Elena. **Physical Therapy and Rehabilitation in Chronic Obstructive Pulmonary Disease Patients Admitted to the Intensive Care Unit.** *Seminars In Respiratory and Critical Care Medicine.* 41(6):886-898. I.F.: 2.028

GRANTS FOR RESEARCH IN PROGRESS

Blanco I. **Efectos del entrenamiento físico sobre la función vascular como diana terapéutica en la hipertensión pulmonar.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. SOCAP_TLLIURE18_01
Duration: 19/06/2018-

Blanco I. **Efectos del entrenamiento físico sobre la función vascular como diana terapéutica en la hipertensión pulmonar.**
Sponsored by: Sociedad Española de Neumología y Cirugía Torácica (SEPAR). 672/2018
Duration: 01/06/2018-30/06/2021

Blanco I. **Efectos del entrenamiento físico sobre la función vascular como diana terapéutica en la hipertensión pulmonar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01515
Duration: 01/01/2018-30/06/2021

Gimeno-Santos E. **Ensayo clínico aleatorizado y controlado sobre los efectos de la electroestimulación neuromuscular en la capacidad de ejercicio en pacientes con patología respiratoria ingresados en la unidad de cuidados intensivos.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. SOCAP_PROJECTE01
Duration: 16/03/2017-

2.6 Familial cardiomyopathies and sudden death syndromes

LOCATION
HCB building

KEYWORDS
1. **Cardiogenetics**
2. **Familial cardiopmyopathy**
3. **Channelopathy**
4. **Sudden death**
5. **Brugada syndrome**
6. **Long QT syndrome**
7. **Short QT syndrome**
8. **Catecholaminergic polymorphic ventricular tachycardia**
9. **Early repolarisation syndrome**
10. **Idiopathic ventricular fibrillation**
11. **Arrhythmogenic cardiomyopathy**
12. **Hypertrophic cardiomyopathy**
13. **Dilated cardiomyopathy**
14. **Non-compacted cardiomyopathy**
15. **Atrial fibrillation**
16. **Genetic testing**
17. **Implantable cardiac defibrillator**

RELATED DISEASES
1. **Brugada syndrome**
2. **Long QT syndrome**
3. **Short QT syndrome**
4. **Catecholaminergic polymorphic ventricular tachycardia**
5. **Early repolarisation syndrome**
6. **Idiopathic ventricular fibrillation**
7. **Arrhythmogenic cardiomyopathy**
8. **Hypertrophic cardiomyopathy**
9. **Dilated cardiomyopathy**
10. **Non-compacted cardiomyopathy**
11. **Familial atrial fibrillation**

GROUP INVOLVED IN
CIBERCV
RIC

Original publications

TOTAL	17
IF	124,80
Mean IF	7,34
Q1	41%
D1	18%
MA	12%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep Brugada (HCB)
T. 93 227 57 33
jbrugada@idibaps.org

RESEARCHERS
Elena Arbelo (HCB)

PRE-DOCTORAL RESEARCHERS
Paloma Jorda (FCRB)

PROBLEM

Cardiac arrhythmias are responsible for nearly a million deaths each year in the West. They can lead to sudden death, which normally occurs without any prior symptoms and can affect men and women of all ethnicities and age groups, including babies. In people over the age of 50 years, sudden death is usually caused by coronary or ischemic diseases. In the population under the age of 50 years, familial cardiopathies caused by genetic abnormalities are the main cause of these fatal episodes.

In recent years, thanks to technological advances in the field of molecular biology, it has been possible to identify numerous genetic abnormalities responsible for diseases associated with sudden cardiac death. Modern gene-sequencing technology makes it possible to analyse a large number of genes (even exomes or genomes) in a cost-effective way and in a short time. In cases where familial disease is suspected, a thorough genetic study is carried out to identify the causes of the disease.

Once this has been identified, a family genetic study is carried out to identify those members of the family who are at risk of suffering from the disease.

Genetics contributes to improving our understanding of the pathophysiological mechanisms of arrhythmias and this has made it possible to improve diagnosis and risk stratification of patients, and to focus on personalized treatment.

APPROACH

The group studies the clinical, electrical, structural, and genetic variables involved in the appearance, natural history and prognosis of these diseases, with the aim of identifying risk indicators for sudden death and preventing it. In the case of diseases that affect cardiac function, it works to prevent their progression.

The research group has a multidisciplinary team of IDIBAPS-HCB specialists and works closely with different centres in Catalonia that are pioneers at the national and international level. This makes it possible to provide a joint response for families affected by arrhythmogenic diseases associated with sudden death. Finally, the group also works in partnership with other centres around the world towards establishing an accurate diagnosis that makes it possible to adopt personalized measures in both the prevention and treatment of familial sudden death.

IMPACT

The group's scientific contributions in recent years have been based on clinical diagnosis, adopting personalized preventive measures, and research into the genetic causes of heart disease.

The group is now a gold standard centre in sudden cardiac death at national level and is a key actor at international level in the field of familial heart disease.

Over the past 15 years, it has taken part in over 50 research projects on sudden death, has participated in over 200 scientific publications focusing on familiar cardiomyopathies, and has been invited to over 300 lectures at congresses and courses on familiar cardiomyopathies and sudden death. It has been, and continues to be, a member of national and international networks in the field of malignant arrhythmias and sudden death.

As a result of the group's work, new diseases associated with sudden death in healthy people have been identified (for example Brugada syndrome or Short QT syndrome) and many genetic and clinical findings have been described that make it possible to adopt the most suitable treatment measures in each case.

RESEARCH LINES

- Clinical, electrical and genetic characteristics of brugada syndrome.

- Clinical, electrical and genetic characteristics of arrhythmogenic cardiomyopathy.

- Sudden cardiac death without an apparent cause: post-mortem genetic study.

- International collaboration for genome-wide association studies in brugada and long qt syndrome

PUBLICATIONS

Originals / I.F.: 124.804

1. Lahrouchi N, Tadros R, Crotti L, Mizusawa Y, Postema PG, Beekman L, Walsh R, Hasegawa K, Barc J, Ernsting M, Turkowski KL, Mazzanti A, Beckmann BM, Shimamoto K, Diamant UB, Wijeyeratne YD, Kucho Y, Robyns T, Ishikawa T, Arbelo E, Christiansen M, Winbo A, Jabbari R, Lubitz SA, Steinfurt J, Rudic B, Loeys B, Shoemaker MB, Weeke PE, Pfeiffer R, Davies B, Andorin A, Hofman N, Dagradi F, Pedrazzini M, Tester DJ, Bos JM, Sarquella-Brugada G, Campuzano Ó, Platonov PG, Stallmeyer B, Zumhagen S, Nannenberg EA, Veldink JH, van den Berg LH, Al-Chalabi A, Shaw CE, Shaw PJ, Morrison KE, Andersen PM, Müller-Nurasyid M, Cusi D, Barlassina C, Galan P, Lathrop M, Munter M, Werge T, Ribasés M, Aung T, Khor CC, Ozaki M, Lichtner P, Meitinger T, van Tintelen JP, Hoedemaekers Y, Denjoy I, Leenhardt A, Napolitano C, Shimizu W, Schott JJ, Gourraud JB, Makiyama T, Ohno S, Itoh H, Krahn AD, Antzelevitch C, Roden DM, Saenen J, Borggrefe M, Odening KE, Ellinor PT, Tfelt-Hansen J, Skinner JR, van den Berg MP, Olesen MS, Brugada J, Brugada R, Makita N, Breckpot J, Yoshinaga M, Behr ER, Rydberg A, Aiba T, Kääb S, Priori SG, Guicheney P, Tan HL, Newton-Cheh C, Ackerman MJ, Schwartz PJ, Schulze-Bahr E, Probst V, Horie M, Wilde AA, Tanck MWT, Bezzina CR. **Transethnic Genome-Wide Association Study Provides Insights in the Genetic Architecture and Heritability of Long QT Syndrome.** *Circulation.* 142(4):324-338. I.F.: 23.603

2. Zabel M; Willems R; Lubinski A; Bauer A; Brugada J; Conen D; Flevari P; Hasenfuß G; Svetlosak M; Huikuri HV; Malik M; Pavlović N; Schmidt G; Sritharan R; Schlögl S; Szavits-Nossan J; Traykov V; Tuinenburg AE; Willich SN; Harden M; Friede T; Svendsen JH; Sticherling C; Merkely B; EU-CERT-ICD Study Investigators. **Clinical effectiveness of primary prevention implantable cardioverter-defibrillators: results of the EU-CERT-ICD controlled multicentre cohort study.** *European Heart Journal.* 41(36):3437-3447. I.F.: 22.673

3. Seligman, William H; Das-Gupta, Zofia; Jobi-Odeneye, Adedayo O; Arbelo, Elena; Banerjee, Amitava; Bollmann, Andreas; Caffrey-Armstrong, Bridget; Cehic, Daniel A; Corbalan, Ramon; Collins, Michael; Dandamudi, Gopi; Dorairaj, Prabhakaran; Fay, Matthew; Van Gelder, Isabelle C; Goto, Shinya; Granger, Christopher B; Gyorgy, Bathory; Healey, Jeff S; Hendriks, Jeroen M; Hills, Mellanie True; Hobbs, F D Richard; Huisman, Menno V; Koplan, Kate E; Lane, Deirdre A; Lewis, William R; Lobban, Trudie; Steinberg, Benjamin A; McLeod, Christopher J; Moseley, Spencer; Timmis, Adam; Yutao, Guo; Camm, A John. **Development of an international standard set of outcome measures for patients with atrial fibrillation: a report of the International Consortium for Health Outcomes Measurement (ICHOM) atrial fibrillation working group.** *European Heart Journal.* 41(10):1132-1140. I.F.: 22.673

4. Campuzano O; Sarquella-Brugada G; Fernandez-Falgueras A; Coll M; Iglesias A; Ferrer-Costa C; Cesar S; Arbelo E; García-Álvarez A; Jordà P; Toro R; Tiron de Llano C; Grassi S; Oliva A; Brugada J; Brugada R. **Reanalysis and reclassification of rare genetic variants associated with inherited arrhythmogenic syndromes.** *Ebiomedicine.* 54:102732. I.F.: 5.736

5. De Lavallaz, Jeanne du Fay; Badertscher, Patrick; Kobori, Atsushi; Kuck, Karl-Heinz; Brugada, Josep; Boveda, Serge; Providencia, Rui; Khoueiry, Ziad; Luik, Armin; Squara, Fabien; Kosmidou, Ioanna; Davtyan, Karapet, V; Elvan, Arif; Perez-Castellano, Nicasio; Hunter, Ross J; Schilling, Richard; Knecht, Sven; Kojodjojo, Pipin; Wasserlauf, Jeremiah; Oral, Hakan; Matta, Mario; Jain, Sandeep; Anselmino, Matteo; Kuehne, Michael. Sex-specific efficacy and safety of cryoballoon versus radiofrequency ablation for atrial fibrillation: An individual patient data meta-analysis. *Heart Rhythm.* 17(8):1232-1240. I.F.: 5.731

6. Vilardell P; Brugada J; Aboal J; Loma-Osorio P; Falces C; Andrea R; Figueras-Coll M; Brugada R. **Characterization of Electrocardiographic Findings in Young Students.** *Revista Española de Cardiología..* 73(2):139-144. I.F.: 4.642

7. Bisbal F, Benito E, Teis A, Alarcón F, Sarrias A, Caixal G, Villuendas R, Garre P, Soto N, Cozzari J, Guasch E, Juncà G, Prat-Gonzalez S, Perea RJ, Bazán V, Tolosana JM, Arbelo E, Bayés-Genís A, Mont L. **Magnetic Resonance Imaging-Guided Fibrosis Ablation for the Treatment of Atrial Fibrillation: The ALICIA Trial.** *Circulation-Arrhythmia and Electrophysiology.* 13(11):e008707. I.F.: 4.393

8. Hernandez-Ojeda J, Arbelo E, Jorda P, Borras R, Campuzano O, Sarquella-Brugada G, Iglesias A, Mont L, Brugada R, Brugada J. **The role of clinical assessment and electrophysiology study in Brugada syndrome patients with syncope.** *American Heart Journal.* 220:213-223. I.F.: 4.153

9. Quinto L, Cozzari J, Benito E, Alarcón F, Bisbal F, Trotta O, Caixal G, San Antonio R, Garre P, Prat-Gonzalez S, Perea RJ, Tolosana JM, Berruezo A, Arbelo E, Roca-Luque I, Sitges M, Brugada J, Guasch E, Mont L. **Magnetic resonance-guided re-ablation for atrial fibrillation is associated with a lower recurrence rate: a case-control study.** *Europace.* 22(12):1805-1811. I.F.: 4.045

10. Schmidt B, Brugada J, Arbelo E, Laroche C, Bayramova S, Bertini M, Letsas KP, Pison L, Romanov A, Scherr D, Tilz RR, Maggioni A, Adragao P, Lund J, Haman L, Oliveira MM, Dagres N, AFA LT Investigators Group. **Ablation strategies for different types of atrial fibrillation in Europe: results of the ESC-EORP EHRA Atrial Fibrillation Ablation Long-Term registry.** *Europace.* 22(4):558-566. I.F.: 4.045

11. Tilz RR, Dagres N, Arbelo E, Blomström-Lundqvist C, Crijns HJ, Kirchhof P, Kautzner J, Temporelli PL, Laroche C, Roberts PR, Pehrson S, Lip GYH, Brugada J, Tavazzi L, Atrial Fibrillation Ablation and Atrial Fibrillation Registries Investigators Groups.

Which patients with atrial fibrillation undergo an ablation procedure today in Europe? A report from the ESC- EHRA-EORP Atrial Fibrillation Ablation Long-Term and Atrial Fibrillation General Pilot Registries. *Europace.* 22(2):250-258. I.F.: 4.045

12. Grecu M, Blomström-Lundqvist C, Kautzner J, Laroche C, Van Gelder IC, Jordaens L, Tavazzi L, Cihak R, Rubio Campal JM, Kalarus Z, Pokushalov E, Brugada J, Dagres N, Arbelo E, ESC-EORP EHRA Atrial Fibrillation Ablation Long-Term Registry investigators. **In-hospital and 12-month follow-up outcome from the ESC-EORP EHRA Atrial Fibrillation Ablation Long-Term registry: sex differences.** *Europace.* 22(1):66-73. I.F.: 4.045

13. Roca-Luque I, Van Breukelen A, Alarcon F, Garre P, Tolosana JM, Borras R, Sanchez P, Zaraket F, Doltra A, Ortiz-Perez JT, Prat-Gonzalez S, Perea RJ, Guasch E, Arbelo E, Berruezo A, Sitges M, Brugada J, Mont L. **Ventricular scar channel entrances identified by new wideband cardiac magnetic resonance sequence to guide ventricular tachycardia ablation in patients with cardiac defibrillators.** *Europace.* 22(4):598-606. I.F.: 4.045

14. Alarcón F, Cabanelas N, Izquierdo M, Benito E, Figueras I Ventura R, Guasch E, Prat-Gonzalez S, Perea RJ, Borràs R, Trotta O, Arbelo E, Tolosana JM, Sitges M, Berruezo A, Brugada J, Mont L. **Cryoballoon vs. radiofrequency lesions as detected by late-enhancement cardiac magnetic resonance after ablation of paroxysmal atrial fibrillation: a case-control study.** *Europace.* 22(3):382-387. I.F.: 4.045

15. D'Ascenzi F, Sanz-De La Garza M, Anselmi F, Nunno L, Arbelo E, Jordà P, Marzotti T, Aprile F, Piu P, Natali BM, Brugada J, Sitges M, Mondillo S. **Electromechanical delay by speckle-tracking echocardiography: A novel tool to distinguish between Brugada syndrome and isolated right bundle branch block.** *International Journal of Cardiology.* 320:161-167. I.F.: 3.229

16. Tolosana JM; Guasch E; San Antonio R; Apolo J; Pujol-López M; Chipa-Ccasani F; Trucco E; Roca-Luque I; Brugada J; Mont L. **Very high pacing thresholds during long-term follow-up predicted by a combination of implant pacing threshold and impedance in leadless transcatheter pacemakers.** *Journal Of Cardiovascular Electrophysiology.* 31(4):868-874. I.F.: 2.424

17. Van Rosmalen F; Delhaas T; Dagres N; Arbelo E; Blomström-Lundqvist C; Crijns HJGM; Da Costa A; Pytkowski M; Sharikov N; Laroche C; Tavazzi L; Brugada J; Pison L; ESC-EHRA Atrial Fibrillation Ablation Long-Term Registry investigators. **Adenosine usage during AF ablation in Europe and selected long-term findings from the ESC-EHRA EORP Atrial Fibrillation Ablation Long-Term registry.** *Journalof Interventional Cardiac Electrophysiology.* 60(3):395. I.F.: 1.277

Review / I.F.: 42.732

1. Postema PG; Schwartz PJ; Arbelo E; Bannenberg WJ; Behr ER; Belhassen B; Brugada J; Brugada P; Camm AJ; Casado-Arroyo R; Hoen E; Hollak CEM; Kaab S; Lambiase PD; Leenhardt A; Priori SG; Probst V; Stunnenberg BC; Tfelt-Hansen J; Van Engelen BGM; Veltmann C; Viskin S; Wilde AAM. **Continued misuse of orphan drug legislation: a life-threatening risk for mexiletine.** *European Heart Journal.* 41(5):614-617. I.F.: 22.673

2. Wu CI, Postema PG, Arbelo E, Behr ER, Bezzina CR, Napolitano C, Robyns T, Probst V, Schulze-Bahr E, Remme CA, Wilde AAM. **SARS-CoV-2, COVID-19, and inherited arrhythmia syndromes.** *Heart Rhythm.* 17(9):1456-1462. I.F.: 5.731

3. Campuzano, Oscar; Sarquella-Brugada, Georgia; Cesar, Sergi; Arbelo, Elena; Brugada, Josep; Brugada, Ramon. **Update on Genetic Basis of Brugada Syndrome: Monogenic, Polygenic or Oligogenic?** *International Journal of Molecular Sciences.* 21(19):7155. I.F.: 4.556

4. Torp-Pedersen C, Goette A, Nielsen PB, Potpara T, Fauchier L, John Camm A, Arbelo E, Boriani G, Skjoeth F, Rumsfeld J, Masoudi F, Guo Y, Joung B, Refaat MM, Kim YH, Albert CM, Piccini J, Avezum A, Lip GYH, External Reviewers. **'Real-world' observational studies in arrhythmia research: data sources, methodology, and interpretation.** *Europace.* 22(5):831-832. I.F.: 4.045

5. Campuzano O, Sarquella-Brugada G, Arbelo E, Cesar S, Jordà P, Pérez-Serra A, Toro R, Brugada J, Brugada R. **Genetic Variants as Sudden-Death Risk Markers in Inherited Arrhythmogenic Syndromes: Personalized Genetic Interpretation.** *Journal of Clinical Medicine.* 9(6):1866. I.F.: 3.303

6. Mascia G, Arbelo E, Porto I, Brugada R, Brugada J. **The arrhythmogenic right ventricular cardiomyopathy in comparison to the athletic heart.** *Journal of Cardiovascular Electrophysiology.* 31(7):1836-1843. I.F.: 2.424

Letters / I.F.: 8.904

1. Crotti L, Arbelo E . **COVID-19 treatments, QT interval and arrhythmic risk: the need for an international Registry on Arrhythmias.** *Heart Rhythm.* 17(9):1423-1424. I.F.: 5.731

2. Cepas-Guillén PL, Pujol-López M, San Antonio R, Arbelo E, Salgado E, Brugada J. **Brugada syndrome, Brugada phenocopy, or simply arrythmia induced by cocaine intoxication?** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(1):72-74. I.F.: 3.173

Editorial / I.F.: 1.313

1. Sarquella-Brugada G; Campuzano O; Brugada J. **Paediatric arrhythmology: The challenge of the 21st century**. *Anales de Pediatría.* 92(1):1-2. I.F.: 1.313

Case Reports / I.F.: 8.432

1. Sanchis, Laura; Jorda, Paloma; Pereda, Daniel; Garcia Alvarez, Ana; Perdomo, Juan M; Regueiro, Ander; Sabate, Manel; Sitges, Marta; Freixa, Xavier. **MitraClip Implantation for Hemolytic Anemia Treatment After Surgical Mitral Valve Repair.** *Jacc-Cardiovascular Interventions.* 13(9):e85-e86. I.F.: 8.432

Clinical Guidelines / I.F.: 58.028

1. Brugada J, Katritsis DG, Arbelo E, Arribas F, Bax JJ, Blomström-Lundqvist C, Calkins H, Corrado D, Deftereos SG, Diller GP, Gomez-Doblas JJ, Gorenek B, Grace A, Ho SY, Kaski JC, Kuck KH, Lambiase PD, Sacher F, Sarquella-Brugada G, Suwalski P, Zaza A, ESC Scientific Document Group. **2019 ESC Guidelines for the management of patients with supraventricular tachycardiaThe Task Force for the management**

of patients with supraventricular tachycardia of the European Society of Cardiology (ESC). *European Heart Journal.* 41(5):655-720. I.F.: 22.673

2. Varma N, Marrouche NF, Aguinaga L, Albert CM, Arbelo E, Choi JI, Chung MK, Conte G, Dagher L, Epstein LM, Ghanbari H, Han JK, Heidbuchel H, Huang H, Lakkireddy DR, Ngarmukos T, Russo AM, Saad EB, Saenz Morales LC, Sandau KE, Sridhar ARM, Stecker EC, Varosy PD . **HRS/EHRA/APHRS/LAHRS/ACC/AHA worldwide practice update for telehealth and arrhythmia monitoring during and after a pandemic.** *Journal of the American College of Cardiology.* 76(11):1363-1374. I.F.: 20.589

3. Varma N, Marrouche NF, Aguinaga L, Albert CM, Arbelo E, Choi JI, Chung MK, Conte G, Dagher L, Epstein LM, Ghanbari H, Han JK, Heidbuchel H, Huang H, Lakkireddy DR, Ngarmukos T, Russo AM, Saad EB, Saenz Morales LC, Sandau KE, Sridhar ARM, Stecker EC, Varosy PD. **HRS/EHRA/APHRS/LAHRS/ACC/AHA worldwide practice update for telehealth and arrhythmia monitoring during and after a pandemic.** *Heart Rhythm.* 17(9):e255-e268. I.F.: 5.731

4. Josep Brugada; Demosthenes G Katritsis; Elena Arbelo Lainez; Fernando Arribas; Jeroen J Bax; Carina Blomstrom Lundqvist; Hugh Calkins; Domenico Corradi; Spyridon Deftereos; Gerhard Paul Diller; Juan J Gómez Doblas; Bulent Gorenek; Siew Yen Ho; Juan Carlos Kaski; Kuck Karl-Heinz; Pier David Lambiase; Frederic Sacher; G Sarquella-Brugada; Piotr Suwalski; A Zarza Pérez; Andrew Grace. **Guía ESC 2019 sobre el tratamiento de pacientes con taquicardia supraventricular.** *Revista Española de Cardiología.* 73(6):496-496. I.F.: 4.642

5. Varma N, Marrouche NF, Aguinaga L, Albert CM, Arbelo E, Choi JI, Chung MK, Conte G, Dagher L, Epstein LM, Ghanbari H, Han JK, Heidbuchel H, Huang H, Lakkireddy DR, Ngarmukos T, Russo AM, Saad EB, Saenz Morales LC, Sandau KE, Sridhar ARM, Stecker EC, Varosy PD . **HRS/EHRA/APHRS/LAHRS/ACC/AHA Worldwide Practice Update for Telehealth and Arrhythmia Monitoring During and After a Pandemic.** *Circulation-Arrhythmia and Electrophysiology.* 13(7):e009007. I.F.: 4.393

Consortium Publications / I.F.: 7.066

1. Fernando Arribas; Josep Brugada; Jesús Almendral Garrote; Elena Arbelo Lainez; Ernesto Díaz Infante; Francisco García Cosio; Sara Lospitao Gómez; José L Merino; José Miguel Ormaetxe Merodio; Joaquín Osca Asensi; Luis Tercedor. **Comentarios a la guía ESC 2019 sobre taquicardia supraventricular.** *Revista Española de Cardiología.* 73(6):445-451. I.F.: 4.642

2. Trotta O, Alarcón F, Guasch E, Benito EM, San Antonio R, Perea RJ, Prat-Gonzalez S, Apolo J, Sitges M, Tolosana JM, Mont L, other members of the Atrial Fibrillation Unit. **Impact of cryoballoon applications on lesion gaps detected by magnetic resonance after pulmonary vein isolation.** *Journal of Cardiovascular Electrophysiology.* 31(3):638-646. I.F.: 2.424

GRANTS FOR RESEARCH IN PROGRESS

Arbelo E. **Estudio ANVERSO: análisis continuo y automático de variables electrocardiográficas en relación al riesgo de muerte súbita en pacientes con síndrome de Brugada.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01203
Duration: 01/01/2017-31/12/2020

Jordà P, Arbelo E. **Caracterización del sustrato fisiopatológico y el impacto clínico de la fibrilación auricular en pacientes con miocardiopatía arritmogénica.**
Sponsored by: Fundación Casa del Corazón (FEC). SEC_CLINICA_01
Duration: 18/10/2019-31/12/2023

2.7 Nephro-urological diseases and kidney transplantation

LOCATION
CELLEX building 2B

KEYWORDS
1. **Kidney transplantation**
2. **Hemodialysis**
3. **Peritoneal dialysis**
4. **Transplant immunology**
5. **Cell therapy**
6. **Renal regeneration**
7. **Pancreas transplantation**
8. **Transplant registries**

RELATED DISEASES
1. **Acute kidney injury**
2. **Chronic kidney disease (hypertension; cardiovascular disease)**
3. **Glomerular diseases**
4. **Hereditary kidney diseases (polycycstic kidney disease; amyloidosis; hemolytic uremic syndrome; Fabry; Alport)**

GROUP INVOLVED IN
REDinREN
AGAUR_SGR17: 1331

Original publications

TOTAL	39
IF	172,88
Mean IF	4,43
Q1	64%
D1	23%
MA	46%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Fritz Diekmann (HCB)
T. 93 227 54 00 (Ext.: 3428)
fdiekman@clinic.cat

RESEARCHERS
Elisenda Bañón (FCRB)
Josep M. Campistol (HCB)
Aleix Cases (HCB)
David Cucchiari (HCB)
Francisco Maduell (HCB)
Martí Manyalich (HCB)
Federico Oppenheimer (HCB)
Esteban Poch (HCB)
Luis F Quintana (HCB)
Jordi Rovira (IDIBAPS)
Pedro Ventura (HCB)

ASSISTANT RESEARCHERS
Beatriz Enriqueta Bayés Genís (HCB)
Maria Jose Ramírez Bajo (FCRB)

POST-DOCTORAL RESEARCHERS
Marta Arias (HCB)
Manel Vera (HCB)

PRE-DOCTORAL RESEARCHERS
Sergi Betriu (FCRB)
Miquel Blasco (HCB)
Miquel Gómez (FCRB)
Gastón Julio (HCB)

TECHNICIANS
Natalia Hierro (IDIBAPS)
Marta Lazo (IDIBAPS)

ADMINISTRATIVE STAFF
Mireia Collado (IDIBAPS)

PROBLEM

Terminal organ failure is a severe health problem often leading to a reduced quality of life or even death. Renal replacement therapy has become a routine procedure, however, still is associated with major complications and in many cases reduced life expectancy. To the same extent absence of insulin production as in diabetes type 1 is associated with a reduced quality of life and life expectancy.

Therefore, research is needed to improve these therapies and ultimately avoid them.

APPROACH

LENIT performs translational research of renal diseases. Our focus is pathophysiology of kidney diseases and optimization of renal replacement therapy (RT) (dialysis or transplantation) as well as pancreas transplantation; therefore, we do research on RT optimization; but we also focus on regenerative treatment in order to avoid or optimize RT.

IMPACT

Chronic kidney failure and diabetes mellitus type 1 are a major health problem and lead to important expenses un health care budgets. In addition, transplant organs are a scarce resource and unfortunalely not available in sufficient numbers.

Thus, improvements in this field will lead not only to higher quality of life and life expectancy, but also to better and more sustainable utilization of resources.

RESEARCH LINES

- Biomarkers, transplant immunology and cell therapy in renal and pancreatic transplantation.

- New technologies and biomarkers in dialysis.

- Pathophisiology and innovative therapies in acute and chronic kidney disease.

PUBLICATIONS

Originals / I.F.: 172.876

1. Bassegoda O, Huelin P, Ariza X, Solé C, Juanola A, Gratacós-Ginès J, Carol M, Graupera I, Pose E, Napoleone L, Albertos S, de Prada G, Cervera M, Fernández J, Fabrellas N, Poch E, Solà E, Ginès P. **Development of chronic kidney disease after acute kidney injury in patients with cirrhosis is common and impairs clinical outcomes.** *Journal Of Hepatology.* 72(6):1132-1139. I.F.: 20.582

2. Boenink R, Stel VS, Waldum-Grevbo BE, Collart F, Kerschbaum J, Heaf JG, de Meester J, Finne P, García-Marcos SA, Evans M, Ambühl PM, Arici M, Ayav C, Steenkamp R, Cases A, Traynor JP, Palsson R, Zoccali C, Massy ZA, Jager KJ, Kramer A. **Data from the ERA-EDTA Registry was examined for trends in excess mortality in European adults on kidney replacement therapy**. *Kidney International.* 98(4):999-1008. I.F.: 8.945

3. Vink P, Ramon Torrell JM, Sanchez Fructuoso A, Kim SJ, Kim SI, Zaltzman J, Ortiz F, Campistol Plana JM, Fernandez Rodriguez AM, Rebollo Rodrigo H, Campins Marti M, Perez R, González Roncero FM, Kumar D, Chiang YJ, Doucette K, Pipeleers L, Agüera Morales ML, Rodriguez-Ferrero ML, Secchi A, McNeil SA, Campora L, Di Paolo E, El Idrissi M, López-Fauqued M, Salaun B, Heineman TC, Oostvogels L, Z-041 Study Group. **Immunogenicity and Safety of the Adjuvanted Recombinant Zoster Vaccine in Chronically Immunosuppressed Adults Following Renal Transplant: a Phase III, Randomized Clinical Trial**. *Clinical Infectious Diseases.* 70(2):181-190. I.F.: 8.313

4. Kronbichler A, Shin JI, Lee KH, Nakagomi D, Quintana LF, Busch M, Craven A, Luqmani RA, Merkel PA, Mayer G, Jayne DRW, Watts RA. **Clinical associations of renal involvement in ANCA-associated vasculitis.** *Autoimmunity Reviews.* 19(4):102495. I.F.: 7.767

5. Pappaccogli, Marco; Prejbisz, Aleksander; Ciurica, Simina; Bruno, Rosa Maria; Aniszczuk-Hybiak, Anna; Bracalente, Irene; De Backer, Tine; Debieve, Frederic; Delmotte, Philippe; Di Monaco, Silvia; Jarraya, Faical; Gordin, Daniel; Kosinski, Przemyslaw; Kroon, Abraham A; Maas, Angela H E M; Marcon, Denise; Minuz, Pietro; Montagud-Marrahi, Enrique; Pasquet, Agnes; Poch, Esteban; Rabbia, Franco; Stergiou, George S; Tikkanen, Ilkka; Toubiana, Laurent; Vinck, Wouter; Warchol-Celinska, Ewa; Van der Niepen, Patricia; de Leeuw, Peter; Januszewicz, Andrzej; Persu, Alexandre. **Pregnancy-Related Complications in Patients With Fibromuscular Dysplasia a Report From the European/International Fibromuscular Dysplasia Registry.** *Hypertension.* 76(2):545-553. I.F.: 7.713

6. Pérez-Sáez MJ, Blasco M, Redondo-Pachón D, Ventura-Aguiar P, Bada-Bosch T, Pérez-Flores I, Melilli E, Sánchez-Cámara LA, López-Oliva MO, Canal C, Shabaka A, Garra-Moncau N, Martín-Moreno PL, López V, Hernández- Gallego R, Siverio O, Galeano C, Espí-Reig J, Cabezas CJ, Rodrigo MT, Llinàs-Mallol L, Fernández-Reyes MJ, Cruzado- Vega L, Pérez-Tamajón L, Santana-Estupiñán R, Ruiz-Fuentes MC, Tabernero G, Zárraga S, Ruiz JC, Gutiérrez-Dalmau A, Mazuecos A, Sánchez- Álvarez E, Crespo M, Pascual J, Spanish Society of Nephrology COVID-19 Group. **Use of tocilizumab in kidney transplant recipients with COVID-19.** *American Journal of Transplantation.* 20(11):3182-3190. I.F.: 7.338

7. Favà A, Cucchiari D, Montero N, Toapanta N, Centellas FJ, Vila-Santandreu A, Coloma A, Meneghini M, Manonelles A, Sellarés J, Torres I, Gelpi R, Lorenzo I, Ventura-Aguiar P, Cofan F, Torregrosa JV, Perelló M, Facundo C, Seron D, Oppenheimer F, Bestard O, Cruzado JM, Moreso F, Melilli E. **Clinical characteristics and risk factors for severe COVID-19 in hospitalized kidney transplant recipients: A multicentric cohort study.** *American Journal of Transplantation.* 20(11):3030-3041. I.F.: 7.338

8. Caravaca-Fontán F, Díaz-Encarnación MM, Lucientes L, Cavero T, Cabello V, Ariceta G, Quintana LF, Marco H, Barros X, Ramos N, Rodríguez-Mendiola N, Cruz S, Fernández-Juárez G, Rodríguez A, Pérez de José A, Rabasco C, Rodado R, Fernández L, Pérez Gómez V, Ávila AI, Bravo L, Lumbreras J, Allende N, Sanchez de la Nieta MD, Rodríguez E, Olea T, Melgosa M, Huerta A, Miquel R, Mon C, Fraga G, de Lorenzo A, Draibe J, Cano-Megías M, González F, Shabaka A, López-Rubio ME, Fenollosa MÁ, Martín-Penagos L, Da Silva I, Alonso Titos J, Rodríguez de Córdoba S, Goicoechea de Jorge E, Praga M, Spanish Group for the Study of Glomerular Diseases GLOSEN. **Mycophenolate Mofetil in C3 Glomerulopathy and Pathogenic Drivers of the Disease**. *Clinical Journal Of The American Society Of Nephrology.* 15(9):1287-1298. I.F.: 6.628

9. Ramirez-Bajo MJ, Rovira J, Lazo-Rodriguez M, Banon-Maneus E, Tubita V, Moya-Rull D, Hierro-Garcia N, Ventura-Aguiar P, Oppenheimer F, Campistol JM, Diekmann F . **Impact of Mesenchymal Stromal Cells and Their Extracellular Vesicles in a Rat Model of Kidney Rejection.** *Frontiers in Cell and Developmental Biology.* 8(10). I.F.: 5.186

10. Ramírez-Bajo MJ; Martín-Ramírez J; Bruno S; Pasquino C; Banon-Maneus E; Rovira J; Moya-Rull D; Lazo-Rodriguez M; Campistol JM; Camussi G; Diekmann F. **Nephroprotective Potential of Mesenchymal Stromal Cells and Their Extracellular Vesicles in a Murine Model of Chronic Cyclosporine Nephrotoxicity.** *Frontiers in Cell and Developmental Biology.* 8(296). I.F.: 5.186

11. Gutiérrez-García G; Villarreal J; Garrote M; Rovira M; Blasco M; Suárez-Lledó M; Rodríguez-Lobato LG; Charry P; Rosiñol L; Marín P; Pedraza A; Solano MT; Ramos C; de Llobet N; Lozano M; Cid J; Martínez C; Poch E; Carreras E; Urbano-Ispizua Á; Fernández-Avilés F; Pereira A; Quintana LF. **Impact of severe acute kidney injury and chronic kidney disease on allogeneic hematopoietic cell transplant recipients: a retrospective single center analysis.** *Bone Marrow Transplantation.* 55(7):1264-1271. I.F.: 4.725

12. Piñeiro GJ, Rovira J, Montagud-Marrahí E, Torregrosa JV, Ríos J, Cucchiari D, Ugalde-Altamirano J, Ventura-Aguiar P, Gelpi R, Palou E, Colmenero J, Navasa M, Diekmann F, Esforzado N. **Kidney graft outcomes in high immunological risk simultaneous liver- kidney transplants.** *Liver Transplantation.* 26(4):517-527. I.F.: 4.570

13. Cucchiari D, Molina-Andujar A, Montagud-Marrahi E, Revuelta I, Rovira J, Ventura- Aguiar P, Piñeiro GJ, De Sousa-Amorim E, Esforzado N, Cofán F, Torregrosa JV, Ugalde-Altamirano J, Ricart MJ, Centellas-Pérez FJ, Solè M, Martorell J, Ríos J, Campistol JM, Diekmann F, Oppenheimer F. **Use of De Novo mTOR Inhibitors in Hypersensitized Kidney Transplant Recipients: Experience From Clinical Practice.** *Transplantation.* 104(8):1686-1694. I.F.: 4.546

14. Jansz, Thijs T; Noordzij, Marlies; Kramer, Anneke; Laruelle, Eric; Couchoud, Cecile; Collart, Frederic; Cases, Aleix; Arici, Mustafa; Helve, Jaako; Waldum-Grevbo, Bard; Rydell, Helena; Traynor, Jamie P; Zoccali, Carmine; Massy, Ziad A; Jager, Kitty J; van Jaarsveld, Brigit C. **Survival of patients treated with extended-hours haemodialysis in Europe: an analysis of the ERA-EDTA Registry**. *Nephrology Dialysis Transplantation.* 35(3):488-495. I.F.: 4.531

15. Palomo, Marta; Vera, Manel; Martin, Susana; Torramade-Moix, Sergi; Martinez-Sanchez, Julia; Moreno, Ana Belen; Carreras, Enric; Escolar, Gines; Cases, Aleix; Diaz-Ricart, Maribel. **Up-regulation of HDACs, a harbinger of uraemic endothelial dysfunction, is prevented by defibrotide.** *Journal Of Cellular And Molecular Medicine*. 24(2):1713-1723. I.F.: 4.486

16. Ruiz S; Amor AJ; Pané A; Molina-Andujar A; Montagud-Marrahi E; Ventura-Aguiar P; Ferrer-Fàbrega J; Esmatjes E. **Cardiovascular risk factors and cardiovascular disease in patients with type 1 diabetes and end-stage renal disease candidates for kidney-pancreas transplantation: Trends from 1999 to 2017.** *Diabetes Research And Clinical Practice.* 163(108135):108135. I.F.: 4.234

17. Gomez M; Bañon-Maneus E; Arias-Guillén M; Maduell F. **Assessment of removal and adsorption enhancement of high-flux hemodialyzers in convective therapies by a novel in vitro uremic matrix.** *Scientific Reports (Nature Publisher Group).* 10(1):17403. I.F.: 3.998

18. Menjivar A; Torres X; Manyalich M; Fehrman-Ekholm I; Papachristou C; de Sousa-Amorim E; Paredes D; Hiesse C; Yucetin L; Oppenheimer F; Kondi E; Peri JM; Kvarnström N; Ballesté C; Dias L; Frade IC; Lopes A; Diekmann F; Revuelta I. **Psychosocial risk factors for impaired health-related quality of life in living kidney donors: results from the ELIPSY prospective study.** *Scientific Reports (Nature Publisher Group).* 10(1):21343. I.F.: 3.998

19. Perez MM; Ferrer MD; Lazo-Rodriguez M; Canals AZ; Banon-Maneus E; Campistol JM; Miller S; Garg R; Gold A; Salcedo C; Perelló J. **A novel assay to measure calcification propensity: from laboratory to humans.** *Scientific Reports (Nature Publisher Group).* 10(1):17578. I.F.: 3.998

20. Villarreal JZ; Pérez-Anker J; Puig S; Pellacani G; Solé M; Malvehy J; Quintana LF; García-Herrera A. **Ex vivo confocal microscopy performs real-time assessment of renal biopsy in non-neoplastic diseases**. *Journal of Nephrology.* I.F.: 3.484

21. Cucchiari D; Ríos J; Molina-Andujar A; Montagud-Marrahi E; Revuelta I; Ventura-Aguiar P; Piñeiro GJ; De Sousa-Amorim E; Esforzado N; Cofán F; Torregrosa JV; Ugalde-Altamirano J; Ricart MJ; Rovira J; Torres F; Solè M; Campistol JM; Diekmann F; Oppenheimer F. **Combination of calcineurin and mTOR inhibitors in kidney transplantation: a propensity score analysis based on current clinical practice.** *Journal Of Nephrology.* 33(3):601-610. I.F.: 3.484

22. Carreras-Planella L; Cucchiari D; CaÃ±as L; Juega J; Franquesa M; Bonet J; Revuelta I; Diekmann F; Taco O; Lauzurica R; BorrÃ s FE. **Urinary vitronectin identifies patients with high levels of fibrosis in kidney grafts.** *Journal Of Nephrology.* I.F.: 3.484

23. Rodas LM, Ruiz-Ortiz E, Garcia-Herrera A, Pereira A, Blasco M, Ventura-Aguiar P, Viñas Gomis O, Egri N, De Sousa E, Palou E, Diekmann F, Poch E, Campistol JM, Quintana LF . **IgA Nephropathy Recurrence after Kidney Transplantation: Role of Recipient Age and Human Leukocyte Antigen-B Mismatch.** *American Journal Of Nephrology.* 51(5):357-365. I.F.: 3.411

24. Bermejo S, González E, López-Revuelta K, Ibernon M, López D, Martín-Gómez A, Garcia-Osuna R, Linares T, Díaz M, Martín N, Barros X, Marco H, Navarro MI, Esparza N, Elias S, Coloma A, Robles NR, Agraz I, Poch E, Rodas L, Lozano V, Fernández B, Hernández E, Martínez MI, Stanescu RI, Moirón JP, García N, Goicoechea M, Calero F, Bonet J, Galceran JM, Liaño F, Pascual J, Praga M, Fulladosa X, Soler MJ. **Risk factors for non-diabetic renal disease in diabetic patients.** *Clinical Kidney Journal.* 13(3):380-388. I.F.: 3.388

25. Krishnan A; Teixeira-Pinto A; Lim WH; Howard K; Chapman JR; Castells A; Roger SD; Bourke MJ; Macaskill P; Williams G; Lok CE; Diekmann F; Cross N; Sen S; Allen RDM; Chadban SJ; Pollock CA; Turner R; Tong A; Yang JYH; Williams N; Au E; Kieu A; James L; Francis A; Wong G; Craig JC. **Health-Related Quality of Life in People Across the Spectrum of CKD.** *Kidney Int Rep.* 5(12):2264-2274. I.F.: 3.336

26. Rootjes, Paul A; de Roij van Zuijdewijn, Camiel L M; Grooteman, Muriel P C; Bots, Michiel L; Canaud, Bernard; Blankestijn, Peter J; van Ittersum, Frans J; Maduell, Francisco; Morena, Marion; Peters, Sanne A E; Davenports, Andrew; Vernooij, Robin W M; Nube, Menso J; HDF Pooling Project Investigators. **Long-Term Peridialytic Blood Pressure Patterns in Patients Treated by Hemodialysis and Hemodiafiltration.** *Kidney Int Rep.* 5(4):503-510. I.F.: 3.336

27. Montagud-Marrahi, Enrique; Molina-Andujar, Alicia; Pane, Adriana; Jose Ramirez-Bajo, Maria; Amor, Antonio; Esmatjes, Enric; Ferrer, Joana; Musquera, Mireia; Diekmann, Fritz; Ventura-Aguiar, Pedro. **Outcomes of pancreas transplantation in older diabetic patients.** *Bmj Open Diabetes Research & Care.* 8(1):e000916. I.F.: 3.183

28. Musquera, Mireia; Peri, Lluis; Ajami, Tarek; Revuelta, Ignacio; Izquierdo, Laura; Mercader, Claudia; Sierra, Alba; Diekmann, Fritz; D'Anna, Maurizio; Monsalve, Concepcion; Alcaraz, Antonio. **Results and Lessons Learned on Robotic Assisted Kidney Transplantation.** *Biomed Research International.* 2020(8687907). I.F.: 2.276

29. Xipell, Marc; Flores-Umanzor, Eduardo; Ojeda, Raquel; Arias, Marta; Cepas-Guillen, Pedro L; Regueiro, Ander; Freixa, Xavier; Cases, Aleix; Maduell, Francisco. **Percutaneous left atrial appendage closure, a safe alternative to anticoagulation for patients with nonvalvular atrial fibrillation and end-stage renal disease on hemodialysis: A single center experience.** *Artificial Organs.* 44(5):513-521. I.F.: 2.259

30. Maduell F; Broseta JJ; Gómez M; Racionero P; Montagud-Marrahi E; Rodas L; Arias-Guillén M; Fontseré N; Vera M; Rico N. **Determining factors for hemodiafiltration to equal or exceed the performance of expanded hemodialysis.** *Artificial Organs.* 44(10):E448-E458. I.F.: 2.259

31. Santos Arteaga FJ; Di Caprio D; Cucchiari D; Campistol JM; Oppenheimer F; Diekmann F; Revuelta I. **Modeling patients as decision making units: evaluating the efficiency of kidney transplantation through data envelopment analysis**. *Health Care Management Science.* I.F.: 2.150

32. Ojeda R; Arias-Guillén M; Gómez M; Vera M; Fontseré N; Rodas L; Filella X; Reverter JC;

Lozano F; Villamor N; Maduell F. **Study of Biocompatibility of Membranes in Online Hemodiafiltration**. *Blood Purification.* 49(4):400-408. I.F.: 2.116

33. Broseta JJ; Rodríguez-Espinosa D; Cuadrado E; Guillén-Olmos E; Hermida E; Montagud-Marrahi E; Rodas L; Vera M; Fontseré N; Arias M; Cases A; Maduell F. **SARS-CoV-2 Infection in a Spanish Cohort of CKD-5D Patients: Prevalence, Clinical Presentation, Outcomes, and De-Isolation Results.** *Blood Purification.* :1-8. I.F.: 2.116

34. Molina-Andújar A, Robles P, Cibeira MT, Montagud-Marrahi E, Guillen E, Xipell M, Blasco M, Poch E, Rosiñol L, Bladé J, Quintana LF . **The renal range of the κ/λ sFLC ratio: best strategy to evaluate multiple myeloma in patients with chronic kidney disease**. *Bmc Nephrology.* 21(1):111. I.F.: 1.913

35. Sánchez Fructuoso A, Ruiz JC, Franco A, Diekmann F, Redondo D, Calviño J, Serra N, Aladrén MJ, Cigarrán S, Manonelles A, Ramos A, Gómez G, González Posada JM, Andrés A, Beneyto I, Muñiz AL, Perelló M, Lauzurica R . **Effectiveness and safety of the conversion to MeltDose® extended-release tacrolimus from other formulations of tacrolimus in stable kidney transplant patients: A retrospective study.** *Clinical Transplantation.* 34(1):e13767. I.F.: 1.665

36. Montagud-Marrahi E; Revuelta I; Cucchiari D; Piñeiro GJ; Ventura-Aguiar P; Lozano M; Cid J; Martorell J; Solé M; Quintana LF; Oppenheimer F; Diekmann F; Poch E; Campistol JM; Blasco M. **Successful use of nonantigen-specific immunoadsorption with antihuman Ig-columns in kidney graft antibody-mediated rejection.** *Journal Of Clinical Apheresis.* 35(3):188-199. I.F.: 1.629

37. Jiménez Hernández M; Soriano A; Filella X; Calvo M; Coll E; Rebled JM; Poch E; Graterol F; Compte MT; Maduell F; Fontsere N. **Impact of locking solutions on conditioning biofilm formation in tunnelled haemodialysis catheters and inflammatory response activation**. *Journal Of Vascular Access.* I.F.: 1.223

38. Maduell, Francisco; Broseta, Jose Jesus; Rodas, Lida; Montagud-Marrahi, Enrique; Rodriguez-Espinosa, Diana; Hermida, Evelyn; Arias-Guillen, Marta; Fontsere, Nestor; Vera, Manel; Gomez, Miquel; Gonzalez, Bernardino; Rico, Nayra. **Comparison of Solute Removal Properties Between High-Efficient Dialysis Modalities in Low Blood Flow Rate.** *Therapeutic Apheresis <nd Dialysis.* 24(4):387-392. I.F.: 1.041

39. Arias-Guillén M; Masso E; Gomez M; Rodas L; Broseta J; Vera M; Rios J; Fontseré N; Maduell F. **Are Currently Used Bioimpedance Methods in Hemodialysis Comparable for Calculating Dialysis Dose?** *Therapeutic Apheresis and Dialysis.* 24(2):154-162. I.F.: 1.041

Review / I.F.: 15.822

1. Gauckler P, Shin JI, Alberici F, Audard V, Bruchfeld A, Busch M, Cheung CK, Crnogorac M, Delbarba E, Eller K, Faguer S, Galesic K, Griffin S, Hrušková Z, Jeyabalan A, Karras A, King C, Kohli HS, Maas R, Mayer G, Moiseev S, Muto M, Odler B, Pepper RJ, Quintana LF, Radhakrishnan J, Ramachandran R, Salama AD, Segelmark M, Tesa? V, Wetzels J, Willcocks L, Windpessl M, Zand L, Zonozi R, Kronbichler A, RITERM study group. **Rituximab in adult minimal change disease and focal segmental glomerulosclerosis - What is known and what is still unknown?** *Autoimmunity Reviews.* 19(11):102671. I.F.: 7.767

2. Diaz-Ricart M; Torramade-Moix S; Pascual G; Palomo M; Moreno-Castaño AB; Martinez-Sanchez J; Vera M; Cases A; Escolar G. **Endothelial damage, inflammation and immunity in chronic kidney disease**. Toxins. 12(6):361. I.F.: 3.531

3. Cid J; Fernández J; Palomo M; Blasco M; Bailó N; Diaz-Ricart M; Lozano M. **Hyperhemolytic Transfusion Reaction in Non-Hemoglobinopathy Patients and Terminal Complement Pathway Activation: Case Series and Review of the Literature.** *Transfusion Medicine Reviews.* 34(3):172-177. I.F.: 3.328

4. Cibeira MT, Ortiz-Pérez JT, Quintana LF, Fernádez de Larrea C, Tovar N, Bladé J . **Supportive Care in AL Amyloidosis.** *Acta Haematológica.* 143(4):335-342. I.F.: 1.196

Letters / I.F.: 93.256

1. Cuadrado-Payán E, Montagud-Marrahi E, Torres-Elorza M, Bodro M, Blasco M, Poch E, Soriano A, Piñeiro GJ . **SARS-CoV-2 and influenza virus co-infection.** *Lancet.* 395(10236):e84. I.F.: 60.390

2. Martinez-Redondo P; Guillen-Guillen I; Davidsohn N; Wang C; Prieto J; Kurita M; Hatanaka F; Zhong C; Hernandez-Benitez R; Hishida T; Lezaki T; Sakamoto A; Nemeth AN; Hishida Y; Esteban CR; Shojima K; Huang L; Shokhirev M; Nuñez-Delicado E; Campistol JM; Guillen-Vicente I; Rodriguez-Iñigo E; Lopez-Alcorocho JM; Guillen-Vicente M; Church G; Reddy P; Guillen-Garcia P; Liu GH; Belmonte JCI. **αKLOTHO and sTGFβR2 treatment counteract the osteoarthritic phenotype developed in a rat model.** *Protein & Cell.* 11(3):219-226. I.F.: 10.164

3. Rodríguez-Espinosa D; Broseta JJ; Cuadrado E; Maduell F. **Prevalence of COVID-19 Infection in Hemodialysis Patients Detected Using Serologic Screening.** *Journal Of The American Society Of Nephrology.* 31(12):2966-2967. I.F.: 9.274

4. Montagud-Marrahi E, Cofan F, Torregrosa JV, Cucchiari D, Ventura-Aguiar P, Revuelta I, Bodro M, Piñeiro GJ, Esforzado N, Ugalde J, Guillén E, Rodríguez-Espinosa D, Campistol JM, Oppenheimer F, Moreno A, Diekmann F . **Preliminary data on outcomes of SARS-CoV-2 infection in a Spanish single centre cohort of kidney recipients.** *American Journal of Transplantation.* 20(10):2958-2959. I.F.: 7.338

5. Cucchiari D, Rovira J, Diekmann F . **Regulated Cell Death at the Crossroad Between Ischemia-reperfusion Injury and Innate Immunity in Kidney Transplantation.** *Transplantation.* 104(9):1772-1773. I.F.: 4.546

6. Novell M; Rico N; Blondeau P; Blasco M; Maceira A; Bedini JL; Andrade FJ; Maduell F. **A novel point-of-care device for blood potassium detection of patients on dialysis: Comparison with a reference method.** *Nefrología.* 40(3):363-364. I.F.: 1.544

Case Reports / I.F.: 14.018

1. Guillen E; Pineiro GJ; Revuelta I; Rodriguez D; Bodro M; Moreno A; Campistol JM; Diekmann F; Ventura-Aguiar P. **Case report of COVID-19 in a kidney transplant recipient: Does immunosuppression alter the clinical presentation?** *American Journal Of Transplantation.* 20(7):1875-1878. I.F.: 7.338

2. Guillen E, Montagud-Marrahi E, Rodriguez DM, Hermida E, Padilla RA, Blasco M, Cibeira MT, Martino R, Fernandez de Larrea C, Campistol JM,

Quintana LF . **Living donor kidney transplantation is an effective option of renal replacement therapy in patients with light-chain amyloidosis (AL).** *Annals Of Hematology.* 99(12):2961-2962. I.F.: 2.904

3. Vicente-Steijn, Rebecca; Tome, Adria; Maduell, Francisco; Xipell, Marc; Castro, Pedro; Molina, Angel; Merino, Anna. **Green inclusions in neutrophils: A critical finding that must be reported.** *International Journal Of Laboratory Hematology.* 42(3):e101-e104. I.F.: 2.141

4. Cucchiari D, Pericàs JM, Riera J, Gumucio R, Md EC, Nicolás D, Hospital Clínic 4H Team. **Pneumococcal superinfection in COVID-19 patients: A series of 5 cases.** *Medicina Clinica.* 155(11):502-505. I.F.: 1.635

Clinical Guidelines / I.F.: 17.794

1. Fakhouri F, Scully M, Provôt F, Blasco M, Coppo P, Noris M, Paizis K, Kavanagh D, Pène F, Quezada S, Hertig A, Kissling S, O'Brien P, Delmas Y, Alberio L, Winer N, Veyradier A, Cataland S, Frémeaux-Bacchi V, Loirat C, Remuzzi G, Tsatsaris V. **Management of thrombotic microangiopathy in pregnancy and postpartum: report from an international working group.** *Blood.* 136(19):2103-2117. I.F.: 17.794

Consortium Publications / I.F.: 138.122

1. Bakris GL, Agarwal R, Anker SD, Pitt B, Ruilope LM, Rossing P, Kolkhof P, Nowack C, Schloemer P, Joseph A, Filippatos G, FIDELIO-DKD Investigators. **Effect of Finerenone on Chronic Kidney Disease Outcomes in Type 2 Diabetes.** *New England Journal of Medicine.* 383(23):2219-2229. I.F.: 74.699

2. Verstraeten A, Perik MHAM, Baranowska AA, Meester JAN, Van Den Heuvel L, Bastianen J, Kempers M, Krapels IPC, Maas A, Rideout A, Vandersteen A, Sobey G, Johnson D, Fransen E, Ghali N, Webb T, Al-Hussaini A, de Leeuw P, Delmotte P, Lopez-Sublet M, Pappaccogli M, Sprynger M, Toubiana L,, Van Laer L, Van Dijk FS, Vikkula M, Samani NJ, Persu A, Adlam D, Loeys B European/International Fibromuscular Dysplasia Registry and Initiative (FEIRI), Collaborators of the European/International Fibromuscular Dysplasia Registry and Initiative (FEIRI). **Enrichment of Rare Variants in Loeys-Dietz Syndrome Genes in Spontaneous Coronary Artery Dissection but Not in Severe Fibromuscular Dysplasia.** *Circulation.* 142(10):1021-1024. I.F.: 23.603

3. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

4. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection**. *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

5. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

6. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS- CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals Of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

7. Cataldo E; Cucchiari D; Orozco-Guillen A; Vicente L; Irish GL; Mac-Way F; Michel PA; Mohebbi N; Moochhala SH; Nikitina E; Pertica N; Pozdzik A; Sanchez Russo L; Gambaro G; Piccoli GB. **Nothing will ever be as before. Reflections on the COVID-19 epidemics by nephrologists in eleven countries.** *Journal Of Nephrology.* 33(4):633-637. I.F.: 3.484

GRANTS FOR RESEARCH IN PROGRESS

Blasco M. **Evaluación de la sobreactivación del complemento en la patogénesis de las ANCA-vasculitis.**
Sponsored by: Fundación Senefro.
SENEFRO_PROY_20_02
Duration: 23/12/2020-22/12/2022

Campistol JM. **Metabolismo del hierro en los receptores de aloinjerto de riñón añoso.**
Sponsored by: Fundación Senefro.
SENEFRO19_001
Duration: 04/12/2019-03/12/2021

Campistol JM. **A novel home healthcare platform for chronic kidney disease.**
Sponsored by: European Commission.
CE_EIT_2ndI19
Duration: 01/07/2019-31/12/2020

Diekmann F. **Laboratori Experimental de Nefrologia i Trasplantament Renal (LENIT).**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01331
Duration: 01/01/2017-30/09/2021

Diekmann F. **Red Temática de Investigación Cooperativa en Salud - Enfermedades renales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0009/0023
Duration: 01/01/2017-31/12/2021

Diekmann F. **Inmunoterapia para el control del rechazo del riñon trasplantado: uso de células T modificadas genéticamente con receptores quiméricos del antígeno.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00078
Duration: 01/01/2018-31/12/2021

Maduell F. **Dosis convectiva y adsorción de toxinas urémicas en tratamientos de hemodiafiltración en línea post-dilucional.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00108
Duration: 01/01/2018-31/12/2021

Manyalich M. **The Effect of Differing Kidney Disease Treatment Modalities and Organ Donation and Transplantation Practices on Health Expenditure and Patient Outcomes.**

Sponsored by: European Commission.
CE_HP-PP-2016
Duration: 01/01/2017-31/12/2020

Martorell J. **Histocompatibilidad del Laboratorio a la Clínica 2020.**
Sponsored by: Ministerio de Sanidad, Consumo y Bienestar Social.
MSCBS_ONT19_01
Duration: 24/10/2019-31/03/2020

Oppenheimer F, Revuelta I. **Papel de los exosomas de células inmunes de memoria (InmEx) en la activación del endotelio y desarrollo precoz del rechazo mediado por anticuerpos en el trasplante renal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00115
Duration: 01/01/2017-30/06/2021

Oppenheimer F, Revuelta I. **Exosomas como nuevo mecanismo de rechazo mediado por anticuerpos en receptores de trasplante renal de alto riesgo inmunológico caracterizados con tecnología de Big Data e Inteligencia Artificial.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00797
Duration: 01/01/2020-31/12/2022

Quintana LF, Nicolau C. **Papel de la patología digital y la Resonancia nuclear magnética en la detección precoz de la fibrosis intersticial en la enfermedad renal crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00080
Duration: 01/01/2018-30/06/2022

Quintana LF. **Caracterización fenotípica y funcional de linfocitos, monocitos y macrófagos mediante citometría de flujo del sedimento urinario en pacientes con nefritis lúpica para la predicción de enfermedad renal crónica.**
Sponsored by: Fundación Senefro.
SENEFRO_GLOM_20_01
Duration: 23/12/2020-22/12/2022

Ventura P. **Effect of strict glycaemic control after transplantation of pancreas on endothelial dysfunction: role of extracellular vesicles.**
Sponsored by: Sociedade Portuguesa de Nefrologia (Spnefro). INT_SPNefro_2019
Duration: 01/02/2020-31/12/2021

DOCTORAL THESES

Cases A, Diaz-Ricart M. **Modulación farmacológica de la disfunción endotelial en la uremia.**
PhD student: Manel Vera Rivera

Diekmann F, Revuelta I. **Expanding the use of mTOR inhibitors to high-risk kidney transplant recipients.**
PhD student: David Cucchiari

Maduell F. **Utilidad de la bioimpedanciometría para la valoración del volumen y del estado nutricional del paciente en hemodiálisis.**
PhD student: Marta Arias Guillen

2.8 Vascular cell biology

LOCATION
UB School of Medicine

KEYWORDS
1. **Aortic aneurysm**
2. **TGF-β**
3. **Oxidative stress**
4. **Rare diseases**
5. **Connective tissue**
6. **Extracellular matrix**

RELATED DISEASES
1. **Marfan syndrome**
2. **Loeys-Dietz syndrome**
3. **Williams-Beuren syndrome**
4. **Weill-Mrchesani syndrome**
5. **Ehlers-Danlos syndrome**
6. **Stenosis Aortica Supravalvular SVAS)**

GROUP INVOLVED IN
AGAUR_SGR18: 188
AGAUR_SGR17: 1794
CIBERER_U735

Original publications

TOTAL	1
IF	4,37
Mean IF	4,37
Q1	0%
D1	0%
MA	0%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Gustavo Egea (UB)
T. 93 402 19 09
gegea@ub.edu

POST-DOCTORAL RESEARCHERS
Cristina Arce (UB)

PRE-DOCTORAL RESEARCHERS
Isaac Rodriguez Rovira (UB)

PROBLEM

The aorta is the main artery where blood circulates. In Marfan syndrome (MFS) or Loeys-Dietz (LDS) syndrome, patients develops aortic dilation (aneurysm) with the subsequent risk of its dissection and rupture, and therefore a of sudden death.

Marfan syndrome is a genetic disease severely affecting the connective tissue, which acts as a glue of other tissues and organs of the body. Undiagnosed patients affected with MFS have a reduced of life and life expectancy. MFS affects 1:5,000 people.

There are no effective pharmacological therapies that prevent or significantly delay the aortic damage, although there are promising results from studies being conducted in an attempt to reduce patients needing the operating theatre. At the moment, the only effective solution is surgery before the vessel breaks down.

APPROACH

The group uses samples from Marfan patients who have undergone aortic repair surgery and genetically modified Marfan mice that present various clinical features of the disease.

In the laboratory, we use morphological techniques such as echocardiography and histology to observe structural changes of the aorta, and biochemistry and molecular biology to identify the molecules that are directly involved in the pathogenesis of this aortopathy.

We also uses different drugs and gene therapy tools against these molecules to interfere with the formation and/or progression of aorta dilatation.

IMPACT

The group wants to stop or at least mitigate the progressive dilatation of the aorta (aneurysm) and, therefore, the risk of dissection and rupture. The final aim is to avoid the aorta reparatory surgery in patients and thus improve their quality of life.

It is important to point out that the progress the group achieves can be also applied to other diseases affecting the aorta (Loeys-Dietz syndrome, Ehlers-Danlos syndrome, Williams-Beuren syndrome) since they share many common molecular mechanisms that lead to the aortopathy.

RESEARCH LINES

- New pharmacological approaches to interfere in the Marfan syndrome-associated TGF-β hypersignaling.

- Redox stress in aortic aneurysm formation and progression in Marfan syndrome.

- New pharmacological approaches and Redox stress in cardiovascular alterations in WBS.

PUBLICATIONS

Originals / I.F.: 4.366

1. Perrucci GL, Rurali E, Corlianò M, Balzo M, Piccoli M, Moschetta D, Pini A, Gaetano R, Antona C, Egea G, Fischer G, Maleševi? M, Alamanni F, Cogliati E, Paolin A, Pompilio G, Nigro P . **Cyclophilin A/EMMPRIN Axis Is Involved in Pro-Fibrotic Processes**

Associated with Thoracic Aortic Aneurysm of Marfan Syndrome Patients. *Cells*. 9(1):154. I.F.: 4.366

Review / I.F.: 5.014

1. Egea G; Jiménez-altayó F; Campuzano V. **Reactive oxygen species and oxidative stress in the pathogenesis and progression of genetic diseases of the connective tissue.** *Antioxidants*. 9(10):1013. I.F.: 5.014

GRANTS FOR RESEARCH IN PROGRESS

Egea G. **Impacto fisiopatológico de un péptido anti-TGF-beta, del ejercicio físico y del humo de los cigarrillos en la formación del anuerisma aórtico en elsíndrome de Marfan.**
Sopnsored by: Ministerio de Economía y Competitividad (MINECO).
SAF2017-83039-R
Duration: 01/01/2018-31/12/2020

2.9 Cardiovascular risk, nutrition and aging

LOCATION
CELLEX building, floor 4B

KEYWORDS
1. **Nutrition**
2. **Mediterranean diet**
3. **Cardiovascular disease**
4. **Cardiovascular risk factors**
5. **Cognition**

RELATED DISEASES
1. **Cardiovascular disease**
2. **Cancer**
3. **Hypertension**
4. **Dyslypdidemia**
5. **Type 2 diabetes**
6. **Neurodegenerative disease**

GROUP INVOLVED IN
CIBEROBN

AWARDS

Premio HDL colesterol bueno
Institution: Cofradía del colesterol bueno, HDL
Awardee/s: Ramon Estruch

Premio Tres días, tres causas
Institution: Sociedad Española de Obesidad (SEEDO-SEO)
Awardee/s: Ramon Estruch

Top 1% most cited researcher globally
Institution: Clarivate Analytics
Awardee/s: Ramon Estruch & Emili Ros

Premi Josep Trueta 2020
Institution: Fundació Acadèmia de Ciències Mèdiques i de la Salut de Catalunya i Balears
Awardee/s: Ramon Estruch

Premio de la Asociación de Riesgo Vascular y Rehabilitación al mejor artículo
Institution: Sociedad Española de Cardiología
Awardee/s: Ramon Estruch

Original publications

TOTAL	46
IF	235,38
Mean IF	5,12
Q1	85%
D1	20%
MA	9%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Ramon Estruch (HCB)
T. 93 227 22 33
restruch@clinic.cat

EMERITUS
Emilio Ros (HCB)

RESEARCHERS
Ferran Masanès (HCB)
Emilio Sacanella (HCB)
Cristina Sierra (HCB)

ASSISTANT RESEARCHERS
Alfonso López Soto (HCB)
Margarita Navarro (HCB)

POST-DOCTORAL RESEARCHERS
Miguel Camafort (HCB)
Rosa Casas (CIBEROBN)
Dolors Estrada (HCB)
Álvaro Hernáez (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Aina Capdevila (HCB)
Sara Castro (UB)
Tania Freitas (IDIBAPS)
Margarida Ribó (UB)
Ana Maria Ruiz León (CIBEROBN)

TECHNICIANS
Conxa Viñas (CIBEROBN)

NURSING STAFF
Lluís Casado (IDIBAPS)
Ana Jordán (HCB)
Rosa Soriano (HCB)

PROBLEM

The leading cause of premature death in industrialized countries is cardiovascular disease, which accounts for 30% of all deaths around the world (17.3 million deaths/year) and is considered a public-health priority.

Evidence exists that indicates that lifestyle, and more specifically a healthy diet such as the Mediterranean diet, may play a key role in the prevention of this disease and in the management of associated risk factors, such as diabetes, obesity, hypertension and dyslipidemia.

APPROACH

To meet this 21st-century challenge, the group is conducting different clinical studies, such as PREDIMED (prevention with the Mediterranean diet), PREDIMED-PLUS (intervention with a hypocaloric Mediterranean diet, physical activity and behavioral therapy), MEDCARS (~14,000 employees at the SEAT factory), SI! (~1200 adolescents) and IMPACT (~1200 pregnant women with fetal growth restriction).

The aim of these studies is to find tools to prevent the onset of cardiovascular disease and its associated risk factors, such as diabetes, dyslipidemia, hypertension and obesity.

IMPACT

The results obtained in the studies conducted by the group make it possible to extrapolate nutritional recommendations for the whole of society because the group works with the highest standards of scientific evidence.

This has been shown by the PREDIMED study, which enabled the Mediterranean diet to be included in American and European nutritional guidelines because it is considered to be an effective and healthy diet for preventing chronic, non-communicable diseases such as cardiovascular disease, neurodegenerative diseases, and even some types of cancer.

RESEARCH LINES

- Protective effects of Mediterranean diet.

- Protective effects of alcohol (beer or wine).

- Effects of other diet components on healthy.

- Assessment on cardiovascular risk factors on primary prevention.

- Evaluation of the intima-media thickness (IMT) of the carotid artery and ultrasound plaque.

- Aging.

- Thrombosis.

PUBLICATIONS

Originals / I.F.: 235.375

1. Soria-Florido MT, Castañer O, Lassale C, Estruch R, Salas-Salvadó J, Martínez-González MÁ, Corella D, Ros E, Arós F, Elosua R, Lapetra J, Fiol M, Alonso-Gómez A, Gómez-Gracia E, Serra-Majem L, Pintó X, Bulló M, Ruiz-Canela M, Sorlí JV, Hernáez Á, Fitó M. **Dysfunctional HDLs are Associated with a Greater Incidence of Acute Coronary Syndrome in a Population at High Cardiovascular Risk: A Nested-Case Control Study.** *Circulation.* 141(6):444-453. I.F.: 23.603

2. Martínez-González MA; Fernandez-Lazaro CI; Toledo E; Díaz-López A; Corella D; Goday A; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA; Serra-Majem L; Estruch R; Tinahones FJ; Lapetra J; Pintó X; Tur JA; López-Miranda J; Cano-Ibáñez N; Delgado-Rodríguez M; Matía-Martín P; Daimiel L; Sánchez VM; Vidal J; Vázquez C; Ros E; Buil-Cosiales P; Portoles O; Soria-Florido M; Konieczna J; Navarrete-Muñoz EM; Tojal-Sierra L; Fernández-García JC; Abete I; Henríquez-Sánchez P; Muñoz-Garach A; Santos-Lozano JM; Corbella E; Bibiloni MDM; Becerra-Tomás N; Martínez-González MA; Fernandez-Lazaro CI; Toledo E; Díaz-López A; Corella D; Goday A; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA. **Carbohydrate quality changes and concurrent changes in cardiovascular risk factors: a longitudinal analysis in the PREDIMED-Plus randomized trial.** *American Journal Of Clinical Nutrition.* 111(2):291-306. I.F.: 6.766

3. Guasch-Ferre, Marta; Santos, Jose L; Martinez-Gonzalez, Miguel A; Clish, Clary B; Razquin, Cristina; Wang, Dong; Liang, Liming; Li, Jun; Dennis, Courtney; Corella, Dolores; Munoz-Bravo, Carlos; Romaguera, Dora; Estruch, Ramon; Manuel Santos-Lozano, Jose; Castaner, Olga; Alonso-Gomez, Angel; Serra-Majem, Luis; Ros, Emilio; Canudas, Silvia; Asensio, Eva M; Fito, Montserrat; Pierce, Kerry; Alfredo Martinez, J; Salas-Salvado, Jordi; Toledo, Estefania; Hu, Frank B; Ruiz-Canela, Miguel. **Glycolysis/gluconeogenesis- and tricarboxylic acid cycle-related metabolites, Mediterranean diet, and type 2 diabetes.** *American Journal Of Clinical Nutrition.* 111(4):835-844. I.F.: 6.766

4. Sala-Vila A, Valls-Pedret C, Rajaram S, Coll-Padrós N, Cofán M, Serra-Mir M, Pérez-Heras AM, Roth I, Freitas-Simoes TM, Doménech M, Calvo C, López-Illamola A, Bitok E, Buxton NK, Huey L, Arechiga A, Oda K, Lee GJ, Corella D, Vaqué-Alcázar L, Sala-Llonch R, Bartrés-Faz D, Sabaté J, Ros E. **Effect of a 2-year diet intervention with walnuts on cognitive decline.** *American Journal Of Clinical Nutrition.* 111(3):590-600. I.F.: 6.766

5. Chiva-Blanch G; Sala-Vila A; Crespo J; Ros E; Estruch R; Badimon L. **The Mediterranean diet decreases prothrombotic microvesicle release in asymptomatic individuals at high cardiovascular risk.** *Clinical Nutrition.* 39(11):3377-3384. I.F.: 6.360

6. Cano-Ibáñez N; Gea A; Ruiz-Canela M; Corella D; Salas-Salvadó J; Schröder H; Navarrete-Muñoz EM; Romaguera D; Martínez JA; Barón-López FJ; López-Miranda J; Estruch R; Riquelme-Gallego B; Alonso-Gómez Á; Tur JA; Tinahones FJ; Serra-Majem L; Martín V; Lapetra J; Vázquez C; Pintó X; Vidal J; Daimiel L; Gaforio JJ; Matía P; Ros E; Fernández-Carrión R; Díaz-López A; Zomeño MD; Candela I; Konieczna J; Abete I; Buil-Cosiales P; Basora J; Fitó M; Martínez-González MA; Bueno-Cavanillas A. **Diet quality and nutrient density in subjects with metabolic syndrome: Influence of socioeconomic status and lifestyle factors. A cross-sectional assessment in the PREDIMED-Plus study.** *Clinical Nutrition.* 39(4):1161-1173. I.F.: 6.360

7. Bibiloni MdM; Bouzas C; Abbate M; Martínez-González MA; Corella D; Salas-Salvadó J; Zomeño MD; Vioque J; Romaguera D; Martínez JA; Wärnberg J; López-Miranda J; Estruch R; Bueno-Cavanillas A; Alonso-Gómez Á; Tinahones F; Serra-Majem L; Martín V; Lapetra J; Vázquez C; Pintó X; Vidal J; Daimiel L; Delgado-Rodríguez M; Matía P; Ros E; Fernández-Carrión R; Garcia-Rios A; Zulet MA; Asensio A; Schröder H; Fitó M; Becerra-Tomás N; Basora J; Cenoz JC; Diez-Espino J; Toledo E; Tur JA. **Nutrient adequacy and diet quality in a Mediterranean population with metabolic syndrome: A cross-sectional study.** *Clinical Nutrition.* 39(3):853-861. I.F.: 6.360

8. Fuentes GC; Castañer O; Warnberg J; Subirana I; Buil-Cosiales P; Salas-Salvadó J; Corella D; Serra-Majem L; Romaguera D; Estruch R; Martínez JA; Pintó X; Vázquez C; Vidal J; Tur JA; Arós F; Bullo M; Fitó M; Schröder H. **Prospective association of physical activity and inflammatory biomarkers in older adults from the PREDIMED-Plus study with overweight or obesity and metabolic syndrome.** *Clinical Nutrition.* 39(10):3092-3098. I.F.: 6.360

9. Konieczna J; Yañez A; Moñino M; Babio N; Toledo E; Martínez-González MA; Sorlí JV; Salas-Salvadó J; Estruch R; Ros E; Alonso-Gómez A; Schröder H; Lapetra J; Serra-Majem L; Pintó X; Gutiérrez-Bedmar M; Díaz-López A; González JI; Fitó M; Forga L; Fiol M; Romaguera D. **Longitudinal changes in Mediterranean diet and transition between different obesity phenotypes.** *Clinical Nutrition.* 39(3):966-975. I.F.: 6.360

10. Bazal P; Gea A; Navarro AM; Salas-Salvadó J; Corella D; Alonso-Gómez A; Fitó M; Muñoz-Bravo C; Estruch R; Fiol M; Lapetra J; Serra-Majem L; Ros E; Rekondo J; Muñoz MA; Basora J; Sorlí JV; Toledo E; Martínez-González MA; Ruiz-Canela M. **Caffeinated coffee consumption and risk of atrial fibrillation in two Spanish cohorts.** *European Journal Of Preventive Cardiology.* I.F.: 5.864

11. Spiegelman D; Lovato LC; Khudyakov P; Wilkens TL; Adebamowo CA; Adebamowo SN; Appel LJ; Beulens JWJ; Coughlin JW; Dragsted LO; Edenberg HJ; Eriksen JN; Estruch R; Grobbee DE; Gulayin PE; Irazola V; Krystal JH; Lazo M; Murray MM; Rimm EB; Schrieks IC; Williamson JD; Mukamal KJ. **The Moderate Alcohol and Cardiovascular Health Trial (MACH15): Design and methods for a randomized trial of moderate alcohol consumption and cardiometabolic risk.** *European Journal Of Preventive Cardiology.* 27(18):1967-1982. I.F.: 5.864

12. Hernáez Á; Soria-Florido MT; Castañer O; Pintó X; Estruch R; Salas-Salvadó J; Corella D;

Alonso-Gómez Á; Martínez-González MÁ; Schröder H; Ros E; Serra-Majem L; Fiol M; Lapetra J; Gomez-Gracia E; Fitó M; Lassale C. **Leisure time physical activity is associated with improved HDL functionality in high cardiovascular risk individuals: a cohort study.** *European Journal Of Preventive Cardiology.* :2047487320925625. I.F.: 5.864

13. Gonzalez-Cordon A, Assoumou L, Camafort M, Domenech M, Guaraldi G, Domingo P, Rusconi S, Raffi F, Katlama C, Masia M, Bernardino JI, Saumoy M, Pozniak A, Gatell JM, Martinez E, NEAT022 Study Group. **Switching from boosted PIs to dolutegravir in HIV-infected patients with high cardiovascular risk: 48 week effects on subclinical cardiovascular disease.** *Journal Of Antimicrobial Chemotherapy.* 75(11):3334-3343. I.F.: 5.439

14. Hernáez Á, Castañer O, Tresserra-Rimbau A, Pintó X, Fitó M, Casas R, Martínez-González MÁ, Corella D, Salas-Salvadó J, Lapetra J, Gómez-Gracia E, Arós F, Fiol M, Serra-Majem L, Ros E, Estruch R. **Mediterranean Diet and Atherothrombosis Biomarkers: A Randomized Controlled Trial.** *Molecular Nutrition & Food Research.* 64(20):e2000350. I.F.: 5.309

15. Hernández-Alonso P, Becerra-Tomás N, Papandreou C, Bulló M, Guasch-Ferré M, Toledo E, Ruiz-Canela M, Clish CB, Corella D, Dennis C, Deik A, Wang DD, Razquin C, Drouin-Chartier JP, Estruch R, Ros E, Fitó M, Arós F, Fiol M, Serra-Majem L, Liang L, Martínez-González MA, Hu FB, Salas-Salvadó J . **Plasma Metabolomics Profiles were Associated with the Amount and Source of Protein Intake: A Metabolomics Approach within the PREDIMED Study. Molecular Nutrition & Food Research.** 64(12):e2000178. I.F.: 5.309

16. Laveriano-santos EP; Parilli-moser I; Ramírez-garza SL; Tresserra-rimbau A; Storniolo CE; Ruiz-león AM; Estruch R; Bodega P; de Miguel M; de Cos-Gandoy A; Carral V; Santos-beneit G; Fernández-alvira JM; Fernández-jiménez R; Fuster V; Lamuela-raventós RM. **Polyphenols in urine and cardiovascular risk factors: A cross-sectional analysis reveals gender differences in Spanish adolescents from the SI! program.** *Antioxidants.* 9(10):910. I.F.: 5.014

17. Cano-Ibáñez N, Bueno-Cavanillas A, Martínez-González MÁ, Salas-Salvadó J, Corella D, Freixer GL, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Tinahones FJ, Lapetra J, Pintó X, Tur JA, García-Ríos A, García-Molina L, Delgado-Rodríguez M, Matía-Martín P, Daimiel L, Martín-Sánchez V, Vidal J, Vázquez C, Ros E, Bartolomé-Resano J, Palau-Galindo A, Portoles O, Torres L, Miquel-Fiol , Sánchez MTC, Sorto-Sánchez C, Moreno-Morales N, Abete I, Álvarez-Pérez J, Sacanella E, Bernal-López MR, Santos-Lozano JM, Fanlo-Maresma M, Bouzas C, Razquin C, Becerra-Tomás N, Ortega-Azorin C, LLimona R, Morey M, Román-Maciá J, Goicolea-Güemez L, Vázquez-Ruiz Z, Barrubés L, Fitó M, Gea A. **Effect of changes in adherence to Mediterranean diet on nutrient density after 1-year of follow-up: results from the PREDIMED-Plus Study.** *European Journal Of Nutrition.* 59(6):2395-2409. I.F.: 4.664

18. Alvarez-Alvarez I; Toledo E; Lecea O; Salas-Salvadó J; Corella D; Buil-Cosiales P; Zomeño MD; Vioque J; Martinez JA; Konieczna J; Barón-López FJ; López-Miranda J; Estruch R; Bueno-Cavanillas A; Alonso-Gómez ÁM; Tur JA; Tinahones FJ; Serra-Majem L; Martín V; Ortega-Calvo M; Vázquez C; Pintó X; Vidal J; Daimiel L; Delgado-Rodríguez M; Matía P; González JI; Díaz-López A; Paz-Graniel I; Muñoz MA; Fito M; Pertusa-Martinez S; Abete I; García-Ríos A; Ros E; Ruiz-Canela M; Martínez-González M. **Adherence to a priori dietary indexes and baseline prevalence of cardiovascular risk factors in the PREDIMED-Plus randomised trial.** *European Journal Of Nutrition.* 59(3):1219-1232. I.F.: 4.664

19. López de Las Hazas MC, Gil-Zamorano J, Cofán M, Mantilla-Escalante DC, Garcia-Ruiz A, Del Pozo-Acebo L, Pastor O, Yañez-Mo M, Mazzeo C, Serra-Mir M, Doménech M, Valls-Pedret C, Rajaram S, Sabaté J, Ros E, Sala-Vila A, Dávalos A. **One-year dietary supplementation with walnuts modifies exosomal miRNA in elderly subjects. European Journal Of Nutrition.** I.F.: 4.664

20. López M; Ríos A; Romaguera D; Martínez-González MÁ; Fernández-Aranda F; Salas-Salvadó J; Corella D; Fitó M; Vioque J; Alonso-Gómez ÁM; Crespo-Oliva E; Martínez JA; Serra-Majem L; Estruch R; Tinahones FJ; Lapetra J; Pintó X; Tur JA; García-Ríos A; Bueno-Cavanillas A; Gaforio JJ; Matía-Martín P; Daimiel L; Sánchez-Rodríguez R; Vidal J; Sanz-Martínez E; Ros E; Toledo E; Barrubés L; Barragán R; de la Torre R; Fiol M; González-Palacios S; Sorto-Sánchez C; Martín-Ruiz MV; Zulet MÁ; Díaz-Collado F; Casas R; Fernández-García JC; Santos-Lozano JM; Mallorqui-Bagué N; Argelich E; Lecea Ó; Paz-Graniel I; Sorlí JV; Cuenca A; Munuera S; Hernándis-Marsán MV; Vaquero-Luna J; Ruiz-Canela M; Camacho-Barcia L; Jiménez-Murcia S; Castañer O; Yáñez AM. **Association between ankle-brachial index and cognitive function in participants in the PREDIMED-Plus study: cross-sectional assessment.** *Revista Española De Cardiología.* S1885-5857(20):30427-8. I.F.: 4.642

21. Díez-Espino J; Buil-Cosiales P; Babio N; Toledo E; Corella D; Ros E; Fitó M; Gómez-Gracia E; Estruch R; Fiol M; Lapetra J; Alonso-Gómez A; Serra-Majem L; Pintó X; Sorlí JV; Muñoz MA; Basora J; Martínez-González MÁ. **Impact of Life's Simple 7 on the incidence of major cardiovascular events in high-risk Spanish adults in the PREDIMED study cohort**. *Revista Española De Cardiología.* 73(3):205-211. I.F.: 4.642

22. Bouzas C., Bibiloni M.D.M., Julibert A., Ruiz-canela M., Salas-salvadó J., Corella D., Zomeño M.D., Romaguera D., Vioque J., Alonso-gómez Á.M., Wärnberg J., Alfredo Martínez J., Serra-majem L., Estruch R., Tinahones F.J., Lapetra J., Pintó X., Ríos A.G., Bueno-cavanillas A., Gaforio J.J., Matía-martín P., Daimiel L., Martín-sánchez V., Vidal J., Vázquez C., Ros E., Fernandez-lázaro C.I., Becerra-tomás N., Gimenez-alba I.M., Muñoz J., Morey M., Oncina-canovas A., Tojal-sierra L., Pérez-lópez J., Abete I., Casañas-quintana T., Castro-barquero S., Rosa Bernal-López M., Santos-lozano J.M., Galera A., Bouzas C., Bibiloni M.D.M., Julibert A., Ruiz-canela M., Salas-salvadó J., Corella D., Zomeño M.D., Romaguera D., Vioque J., Alonso-gómez Á.M., Wärnberg J., Alfredo Martínez J. **Adherence to the mediterranean lifestyle and desired body weight loss in a mediterranean adult population with overweight: A predimed-plus study.** *Nutrients.* 12(7):2114-21. I.F.: 4.546

23. Castro-Barquero S; Tresserra-Rimbau A; Vitelli-Storelli F; Doménech M; Salas-Salvadó J; Martín-Sánchez V; Rubín-García M; Buil-Cosiales P; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA; Serra-Majem L; Tinahones FJ; Lapetra J; Pintó X; Tur JA; Garcia-Rios A; García-Molina L; Delgado-Rodriguez M; Matía-Martín P; Daimiel L; Vidal J; Vázquez C; Cofán M; Romanos-Nanclares A; Becerra-Tomas N; Barragan R; Castañer O; Konieczna J;

González-Palacios S; Sorto-Sánchez C; Pérez-López J; Zulet MA; Bautista-Castaño I; Casas R; Gómez-Perez AM; Castro-Barquero S; Tresserra-Rimbau A; Vitelli-Storelli F; Doménech M; Salas-Salvadó J; Martín-Sánchez V; Rubín-García M; Buil-Cosiales P; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA. **Dietary polyphenol intake is associated with HDL-cholesterol and a better profile of other components of the metabolic syndrome: A PREDIMED-plus sub-study.** *Nutrients*. 12(3):689. I.F.: 4.546

24. Gallardo-Alfaro L; Del Mar Bibiloni M; Mascaró CM; Montemayor S; Ruiz-Canela M; Salas-Salvadó J; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA; Serra-Majem L; Estruch R; Fernández-García JC; Lapetra J; Pintó X; Ríos AG; Bueno-Cavanillas A; Gaforio JJ; Matía-Martín P; Daimiel L; Micó-Pérez RM; Vidal J; Vázquez C; Ros E; Fernandez-Lázaro CI; Becerra-Tom N; Gimenez-Alba IM; Zomeño MD; Konieczna J; Compañ-Gabucio L; Tojal-Sierra L; Pérez-López J; Zulet MÁ; Casañas-Quintana T; Castro-Barquero S; Gómez-Pérez AM; Santos-Lozano JM; Gallardo-Alfaro L; Del Mar Bibiloni M; Mascaró CM; Montemayor S; Ruiz-Canela M; Salas-Salvad J; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J. **Leisure-Time Physical Activity, Sedentary Behaviour and Diet Quality are Associated with Metabolic Syndrome Severity: The PREDIMED-Plus Study.** *Nutrients*. 12(4):1013. I.F.: 4.546

25. Bouzas C, Bibiloni MDM, Garcia S, Mateos D, Martínez-González MÁ, Salas-Salvadó J, Corella D, Schröder H, Martínez JA, Alonso-Gómez ÁM, Wärnberg J, Vioque J, Romaguera D, Lopez-Miranda J, Estruch R, Tinahones FJ, Lapetra J, Serra-Majem L, Bueno-Cavanillas A, Micó-Pérez RM, Pintó X, Delgado-Rodríguez M, Ortíz-Ramos M, Altés-Boronat A, Luca BL, Daimiel L, Ros E, Sayon-Orea C, Becerra-Tomás N, Gimenez-Alba IM, Castañer O, Abete I, Tojal-Sierra L, Pérez-López J, Bernabé-Casanova A, Martin-Padillo M, Garcia-Rios A, Castro-Barquero S, Fernández-García JC, Santos-Lozano JM, Fernandez-Lazaro CI, Hernández-Alonso P, Saiz C, Zomeño MD, Zulet MA, Belló-Mora MC, Basterra-Gortari FJ, Canudas S, Goday A, Tur JA. **Dietary Quality Changes According to the Preceding Maximum Weight: A Longitudinal Analysis in the PREDIMED-Plus Randomized Trial.** *Nutrients*. 12(10):3023. I.F.: 4.546

26. Castro-Barquero S, Ribó-Coll M, Lassale C, Tresserra-Rimbau A, Castañer O, Pintó X, Martínez-González MÁ, Sorlí JV, Salas-Salvadó J, Lapetra J, Gómez-Gracia E, Alonso-Gómez ÁM, Fiol M, Serra-Majem L, Sacanella E, Basterra-Gortari FJ, Portolés O, Babio N, Cofán M, Ros E, Estruch R, Hernáez Á . **Mediterranean Diet Decreases the Initiation of Use of Vitamin K Epoxide Reductase Inhibitors and Their Associated Cardiovascular Risk: A Randomized Controlled Trial**. *Nutrients*. 12(12):3895. I.F.: 4.546

27. Basora J; Villalobos F; Pallejà-Millán M; Babio N; Goday A; Castañer O; Fitó M; Zomeño MD; Pintó X; Sacanella E; Paz-Graniel I; Salas-Salvadó J. **Association between the potential influence of a lifestyle intervention in older individuals with excess weight and metabolic syndrome on untreated household cohabitants and their family support: The predimed-plus study.** *Nutrients*. 12(7):1975. I.F.: 4.546

28. Sorlí JV; Barragán R; Coltell O; Portolés O; Pascual EC; Ortega-Azorín C; González JI; Estruch R; Saiz C; Pérez-Fidalgo A; Ordovas JM; Corella D. **Chronological age interacts with the circadian melatonin receptor 1b gene variation, determining fasting glucose concentrations in mediterranean populations. Additional analyses on type-2 diabetes risk.** *Nutrients*. 12(11):1. I.F.: 4.546

29. Coltell O; Sorlí JV; Asensio EM; Barragán R; González JI; Giménez-Alba IM; Zanón-Moreno V; Estruch R; Ramírez-Sabio JB; Pascual EC; Ortega-Azorín C; Ordovas JM; Corella D. **Genome-wide association study for serum omega-3 and omega-6 polyunsaturated fatty acids: Exploratory analysis of the sex-specific effects and dietary modulation in mediterranean subjects with metabolic syndrome.** *Nutrients*. 12(2):310. I.F.: 4.546

30. Al Abdrabalnabi A, Rajaram S, Bitok E, Oda K, Beeson WL, Kaur A, Cofán M, Serra-Mir M, Roth I, Ros E, Sabaté J. **Effects of Supplementing the Usual Diet with a Daily Dose of Walnuts for Two Years on Metabolic Syndrome and Its Components in an Elderly Cohort**. *Nutrients*. 12(2):451. I.F.: 4.546

31. Papandreou C; Bulló M; Díaz-López A; Martínez-González MA; Corella D; Castañer O; Vioque J; Romaguera D; Martínez AJ; Pérez-Farinós N; López-Miranda J; Estruch R; Bueno-Cavanillas A; Alonso-Gómez A; Tur JA; Tinahones FJ; Serra-Majem L; Martin V; Lapetra J; Vazquez C; Pintó X; Vidal J; Damiel L; Delgado-Rodriguez M; Ros E; Abete I; Barón-López J; Garcia-Arellano A; Sorli JV; Babio N; Schröder H; Toledo E; Fitó M; Salas-Salvadó J. **High sleep variability predicts a blunted weight loss response and short sleep duration a reduced decrease in waist circumference in the PREDIMED-Plus Trial.** *International Journal Of Obesity*. 44(2):330-339. I.F.: 4.419

32. Julibert A, Del Mar Bibiloni M, Gallardo-Alfaro L, Abbate M, Martínez-González MÁ, Salas-Salvadó J, Corella D, Fitó M, Martínez JA, Alonso-Gómez ÁM, Wärnberg J, Vioque J, Romaguera D, Lopez-Miranda J, Estruch R, Tinahones FJ, Lapetra J, Serra-Majem L, Cano-Ibañez N, Martín-Sánchez V, Pintó X, Gaforio JJ, Matía-Martín P, Vidal J, Vázquez C, Daimiel L, Ros E, Sayon-Orea C, Becerra-Tomás N, Gimenez-Alba IM, Castañer O, Abete I, Tojal-Sierra L, Pérez-López J, Notario-Barandiaran L, Colom A, Garcia-Rios A, Castro-Barquero S, Bernal R, Santos-Lozano JM, Fernández-Lázaro CI, Hernández-Alonso P, Saiz C, Zomeño MD, Zulet MA, Belló-Mora MC, Basterra-Gortari J, Canudas S, Goday A, Tur JA, PREDIMED-PLUS investigators. **Metabolic Syndrome Features and Excess Weight Were Inversely Associated with Nut Consumption after 1-Year Follow-Up in the PREDIMED-Plus Study.** *Journal Of Nutrition*. 150(12):3161-3170. I.F.: 4.281

33. Papandreou C; Hernández-Alonso P; Bulló M; Ruiz-Canela M; Li J; Guasch-Ferré M; Toledo E; Clish C; Corella D; Estruch R; Cofán M; Fitó M; Razquin C; Arós F; Fiol M; Santos-Lozano JM; Serra-Majem L; Liang L; Martínez-González MA; Hu FB; Salas-Salvadó J. **High plasma glutamate and a low glutamine-to-glutamate ratio are associated with increased risk of heart Failure but Not Atrial Fibrillation in the Prevención con Dieta Mediterránea (PREDIMED) Study.** *Journal Of Nutrition*. 150(11):2882-2889. I.F.: 4.281

34. Almanza-Aguilera E; Hernáez A; Corella D; Aguayo DM; Ros E; Portolés O; Valussi J; Estruch R; Coltell O; Subirana I; Salas-Salvadó J; Ruiz-Canela M; de la Torre R; Nonell L; Fitó M; Castañer O. **Transcriptional response to a Mediterranean diet intervention exerts a modulatory effect on neuroinflammation signaling pathway.**

Nutritional Neuroscience. :1-10. I.F.: 4.028

35. Daimiel L; Martínez-González MA; Corella D; Salas-Salvadó J; Schröder H; Vioque J; Romaguera D; Martínez JA; Wärnberg J; Lopez-Miranda J; Estruch R; Cano-Ibáñez N; Alonso-Gómez A; Tur JA; Tinahones FJ; Serra-Majem L; Micó-Pérez RM; Lapetra J; Galdón A; Pintó X; Vidal J; Micó V; Colmenarejo G; Gaforio JJ; Matía P; Ros E; Buil-Cosiales P; Vázquez-Ruiz Z; Sorlí JV; Graniel IP; Cuenca-Royo A; Gisbert-Sellés C; Galmes-Panades AM; Zulet MA; García-Ríos A; Díaz-López A; de la Torre R; Galilea-Zabalza I; Ordovás JM. **Physical fitness and physical activity association with cognitive function and quality of life: baseline cross-sectional analysis of the PREDIMED-Plus trial.** *Scientific Reports (Nature Publisher Group)*. 10(1):3472. I.F.: 3.998

36. Sánchez-Quesada C; Toledo E; González-Mata G; Ramos-Ballesta MI; Peis JI; Martínez-González MÁ; Salas-Salvadó J; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA; Serra-Majem L; Estruch R; Tinahones FJ; Lapetra J; Pintó X; Tur JA; Garcia-Rios A; Cano-Ibáñez N; Matía-Martín P; Daimiel L; Sánchez-Rodríguez R; Vidal J; Vázquez C; Ros E; Hernández-Alonso P; Barragan R; Muñoz-Martínez J; López M; González-Palacios S; Vaquero-Luna J; Crespo-Oliva E; Zulet MA; Díaz-González V; Casas R; Fernandez-Garcia JC; Santos-Lozano JM. **Relationship between olive oil consumption and ankle-brachial pressure index in a population at high cardiovascular risk.** *Atherosclerosis*. 314:48-57. I.F.: 3.919

37. Fernandez-Garcia, Jose Carlos; Munoz-Garach, Araceli; Martinez-Gonzalez, Miguel angel; Salas-Salvado, Jordi; Corella, Dolores; Hernaez, Alvaro; Romaguera, Dora; Vioque, Jesus; Alonso-Gomez, Angel M; Warnberg, Julia; Martinez, J Alfredo; Serra-Majem, Luis; Estruch, Ramon; Lapetra, Jose; Pinto, Xavier; Tur, Josep A; Garcia-Rios, Antonio; Garcia Molina, Laura; Gaforio, Jose Juan; Matia-Martin, Pilar; Daimiel, Lidia; Martin Sanchez, Vicente; Vidal, Josep; Prieto, Lucia; Ros, Emilio; Goni, Nuria; Babio, Nancy; Ortega-Azorin, Carolina; Castaner, Olga; Konieczna, Jadwiga; Notario Barandiaran, Leyre; Vaquero-Luna, Jessica; Benavente-Marin, Juan Carlos; Zulet, M Angeles; Sanchez-Villegas, Almudena; Sacanella, Emilio; Gomez Huelgas, Ricardo; Miro-Moriano, Leticia; Gimenez-Gracia, Mariano; Julibert, Alicia; Razquin, Cristina; Basora, Josep; Portoles, Olga; Goday, Albert; Galmes-Panades, Aina M; Lopez-Garcia, Carmen M; Moreno-Rodriguez, Anai; Toledo, Estefania; Diaz-Lopez, Andres; Fito, Montserrat; Tinahones, Francisco J; Bernal-Lopez, M Rosa; PREDIMED-Plus Investigators. **Association Between Lifestyle and Hypertriglyceridemic Waist Phenotype in the PREDIMED-Plus Study.** *Obesity*. 28(3):537-543. I.F.: 3.742

38. Mena-Sánchez G, Babio N, Becerra-Tomás N, Martínez-González MÁ, Díaz-López A, Corella D, Zomeño MD, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Bernal R, Lapetra J, Pintó X, Tur JA, Lopez-Miranda J, Cano-Ibáñez N, Gaforio JJ, Matía-Martín P, Daimiel L, Caro JLL, Vidal J, Vázquez C, Ros E, Arellano AG, Palau A, Fernández-Carrión R, Pérez-Vega KA, Morey M, de la Hera MG, Vaquero-Luna J, Carmona-González FJ, Abete I, Álvarez-Pérez J, Casas R, Fernández-García JC, Santos-Lozano JM, Corbella E, Sureda A, Ruiz-Canela M, Barragán R, Goday A, Martín M, Altozano Rodado MC, Toledo E, Fitó M, Salas-Salvadó J, PREDIMED-PLUS investigators. **Association between dairy product consumption and hyperuricemia in an elderly population with metabolic syndrome.** *Nutrition Metabolism And Cardiovascular Diseases*. 30(2):214-222. I.F.: 3.700

39. Bullón-Vela V, Abete I, Tur JA, Pintó X, Corbella E, Martínez-González MA, Toledo E, Corella D, Macías M, Tinahones F, Fitó M, Estruch R, Ros E, Salas-Salvadó J, Daimiel L, Zulet MA, Martínez JA, PREDIMED Plus investigators. **Influence of lifestyle factors and staple foods from the Mediterranean diet on non-alcoholic fatty liver disease among older individuals with metabolic syndrome features.** *Nutrition*. 71:110620. I.F.: 3.639

40. Barrubés L, Babio N, Hernández-Alonso P, Toledo E, Ramírez Sabio JB, Estruch R, Ros E, Fitó M, Alonso-Gómez AM, Fiol M, Lapetra J, Serra-Majem L, Pintó X, Ruiz-Canela M, Corella D, Castañer O, Macías-González M, Salas-Salvadó J. **Association between the 2018 WCRF/AICR and the Low-Risk Lifestyle Scores with Colorectal Cancer Risk in the Predimed Study.** *Journal Of Clinical Medicine*. 9(4):1215. I.F.: 3.303

41. Vaqué-Alcázar L; Sala-Llonch R; Abellaneda-Pérez K; Coll-Padrós N; Valls-Pedret C; Bargalló N; Ros E; Bartrés-Faz D. **Functional and structural correlates of working memory performance and stability in healthy older adults.** *Brain Structure & Function*. 225(1):375-386. I.F.: 3.298

42. Bullón-Vela V, Abete I, Zulet MA, Xu Y, Martínez-González MA, Sayón-Orea C, Ruiz-Canela M, Toledo E, Sánchez VM, Estruch R, Lamuela-Raventós RM, Almanza-Aguilera E, Fitó M, Salas-Salvadó J, Díaz-López A, Tinahones FJ, Tur JA, Romaguera D, Konieczna J, Pintó X, Daimiel L, Rodriguez-Mateos A, Alfredo Martínez J . **Urinary Resveratrol Metabolites Output: Differential Associations with Cardiometabolic Markers and Liver Enzymes in House-Dwelling Subjects Featuring Metabolic Syndrome.** *Molecules*. 25(18):4340. I.F.: 3.267

43. Bosch X, Ladino A, Moreno-Lozano P, Jordán A, López-Soto A . **Trends in Hospitalization of Patients with Potentially Serious Diseases Evaluated at a Quick Diagnosis Clinic.** *Diagnostics*. 10(8):585. I.F.: 3.110

44. Marcos-Delgado A; Fernández-Villa T; Martínez-González MÁ; Salas-Salvadó J; Corella D; Castañer O; Martínez JA; Alonso-Gómez ÁM; Wärnberg J; Vioque J; Romaguera D; López-Miranda J; Estruch R; Tinahones FJ; Lapetra J; Serra-Majem JL; García-Molina L; Tur JA; de Paz JA; Pintó X; Delgado-Rodríguez M; Matía-Martín P; Vidal J; Vázquez C; Daimiel L; Ros E; Babio N; Gimenez-Alba IM; Toledo E; Zomeño MD; Zulet MA; Vaquero-Luna J; Pérez-López J; Pastor-Morel A; Galmes-Panades AM; García-Rios A; Casas R; Bernal-López MR; Santos-Lozano JM; Becerra-Tomás N. The Effect of Physical Activity and High Body Mass Index on Health-Related Quality of Life in Individuals with Metabolic Syndrome. *International Journal Of Environmental Research And Public Health*. 17(10):3728. I.F.: 2.849

45. Arenas Miquélez A; Requena Calleja MA; Gullón A; Pose Reino A; Formiga F; Camafort M; Cepeda Rodrigo JM; Mostaza JM; Suárez Fernández C; Díez-Manglano J. **Nutritional Risk and Mortality at One Year for Elderly Patients Hospitalized with Nonvalvular Atrial Fibrillation. NONAVASC Registry.** *Journal Of Nutrition Health & Aging*. 24(9):981-986. I.F.: 2.791

46. Bullón Vela MV, Abete I, Zulet MLÁ, Tur JA, Pintó X, Corbella E, Martínez González MÁ,

Corella D, Macías González M, Tinahones F, Fitó M, Estruch R, Ros E, Salas Salvadó J, Daimiel L, Martínez JA. **Risk factors differentially associated with non-alcoholic fatty liver disease in males and females with metabolic syndrome.** *Revista Espanola de Enfermedades Digestivas.* 112(2):94-100. I.F.: 2.196

Review / I.F.: 71.652

1. O'Keefe JH, Torres-Acosta N, O'Keefe EL, Saeed IM, Lavie CJ, Smith SE, Ros E. **A Pesco-Mediterranean Diet With Intermittent Fasting: JACC Review Topic of the Week.** *Journal Of The American College Of Cardiology.* 76(12):1484-1493. I.F.: 20.589

2. Alasalvar C; Salvadó J; Ros E. **Bioactives and health benefits of nuts and dried fruits.** *Food Chemistry.* 314(126192). I.F.: 6.306

3. Estruch R; Ros E. **The role of the Mediterranean diet on weight loss and obesity-related diseases.** *Reviews In Endocrine & Metabolic Disorders.* 21(3):315-327. I.F.: 6.192

4. Kris-Etherton, Penny M; Petersen, Kristina S; Velarde, Gladys; Barnard, Neal D; Miller, Michael; Ros, Emilio; O'Keefe, James H; Williams, Kim, Sr; Van Horn, Linda; Na, Muzi; Shay, Christina; Douglass, Paul; Katz, David L; Freeman, Andrew M. **Barriers, Opportunities, and Challenges in Addressing Disparities in Diet-Related Cardiovascular Disease in the United States.** *Journal Of The American Heart Association.* 9(7):e014433. I.F.: 4.605

5. Casas R; Barquero SC; Estruch R. **Impact of sugary food consumption on pregnancy: A review.** *Nutrients.* 12(11):3574. I.F.: 4.546

6. Castro-Barquero S; Ruiz-León AM; Sierra-Pérez M; Estruch R; Casas R. **Dietary strategies for metabolic syndrome: A comprehensive review.** *Nutrients.* 12(10):2983. I.F.: 4.546

7. Estruch R; Vendrell E; Ruiz-León AM; Casas R; Castro-Barquero S; Alvarez X. **Reformulation of pastry products to improve effects on health.** *Nutrients.* 12(6):1709. I.F.: 4.546

8. Minzer S; Losno RA; Casas R. **The Effect of Alcohol on Cardiovascular Risk Factors: Is There New Information?** *Nutrients.* 12(4):912. I.F.: 4.546

9. Sierra C. **Hypertension and the Risk of Dementia.** *Front Cardiovasc Med.* 7(5). I.F.: 3.915

10. Minzer S; Estruch R; Casas R. **Wine Intake in the Framework of a Mediterranean Diet and Chronic Non-Communicable Diseases: A Short Literature Review of the Last 5 Years.** *Molecules.* 25(21):5045. I.F.: 3.267

11. Trius-Soler M; Vilas-Franquesa A; Tresserra-Rimbau A; Sasot G; Storniolo CE; Estruch R; Lamuela-Raventós RM. **Effects of the Non-Alcoholic Fraction of Beer on Abdominal Fat, Osteoporosis, and Body Hydration in Women.** *Molecules.* 25(17):3910. I.F.: 3.267

12. Camafort M; Kario K. **Hypertension, heart failure, and frailty in older people: A common but unclear situation.** *Journal Of Clinical Hypertension.* 22(10):1763-1768. I.F.: 2.719

13. Formiga F; Camafort M; Carrasco Sánchez F. **Heart failure and diabetes: The confrontation of two major epidemics of the 21st century.** *Rev Clin Esp.* 220(2):135-138. I.F.: 1.304

14. Guijarro C; Camafort M. PCSK9 inhibitors: Ratification of the role of LDL cholesterol in cardiovascular prevention. **Towards a convergence of European and North American prevention guidelines?** *Rev Clin Esp.* 220(6):374-382. I.F.: 1.304

Letters / I.F.: 41.178

1. Estruch R; Sacanella E; Lamuela-Raventós RM. **Ideal Dietary Patterns and Foods to Prevent Cardiovascular Disease: Beware of Their Anti-Inflammatory Potential**. *Journal Of The American College Of Cardiology.* 76(19):2194-2196. I.F.: 20.589

2. Estruch R; Lamuela-Raventós RM; Ros E. **The Bitter Taste of Extra Virgin Olive Oil for a Sweet Long Life.** *Journal Of The American College Of Cardiology.* 75(15):1740-1742. I.F.: 20.589

Editorial / I.F.: 29.387

1. Estruch, Ramon; Casas, Rosa; Ros, Emilio. **Eat Even More Vegetables and Fruits to Protect Your Heart.** *Annals Of Internal Medicine.* 172(12):826-827. I.F.: 21.317

2. Ros E. **Linoleic acid intake and reduction in mortality: the icing on the cake of health benefits from n-6 PUFAs?** *American Journal Of Clinical Nutrition.* 112(1):3-4. I.F.: 6.766

3. Capdevila-Reniu A. **Orthogeriatric units, a model of successful hospital collaboration.** *Rev Clin Esp.* 220(1):22-23. I.F.: 1.304

Clinical Guidelines / I.F.: 7.514

1. Nordestgaard BG, Langlois MR, Langsted A, Chapman MJ, Aakre KM, Baum H, Borén J, Bruckert E, Catapano A, Cobbaert C, Collinson P, Descamps OS, Duff CJ, von Eckardstein A, Hammerer-Lercher A, Kamstrup PR, Kolovou G, Kronenberg F, Mora S, Pulkki K, Remaley AT, Rifai N, Ros E, Stankovic S, Stavljenic-Rukavina A, Sypniewska G, Watts GF, Wiklund O, Laitinen P, European Atherosclerosis Society (EAS) and the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) Joint Consensus Initiative. **Quantifying atherogenic lipoproteins for lipid-lowering strategies: Consensus-based recommendations from EAS and EFLM.** *Atherosclerosis.* 294:46-61. I.F.: 3.919

2. Langlois, Michel R; Nordestgaard, Borge G; Langsted, Anne; Chapman, M John; Aakre, Kristin M; Baum, Hannsjoerg; Boren, Jan; Bruckert, Eric; Catapano, Alberico; Cobbaert, Christa; Collinson, Paul; Descamps, Olivier S; Duff, Christopher J; von Eckardstein, Arnold; Hammerer-Lercher, Angelika; Kamstrup, Pia R; Kolovou, Genovefa; Kronenberg, Florian; Mora, Samia; Pulkki, Kari; Remaley, Alan T; Rifai, Nader; Ros, Emilio; Stankovic, Sanja; Stavljenic-Rukavina, Ana; Sypniewska, Grazyna; Watts, Gerald F; Wiklund, Olov; Laitinen, Paivi; European Atherosclerosis Soc; European Federation Clinical Chem. **Quantifying atherogenic lipoproteins for lipid-lowering strategies: consensus-based recommendations from EAS and EFLM.** *Clinical Chemistry and Laboratory Medicine.* 58(4):496-517. I.F.: 3.595

GRANTS FOR RESEARCH IN PROGRESS

Estruch R. **Cardiovascular, Nutrition and Aging Group.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01717
Duration: 01/01/2017-30/09/2021

Estruch R. **Efecto de una intervención intensiva de pérdida de peso con dieta mediterránea hipocalórica, actividad física y tratamiento conductual sobre la prevención primaria cardiovascular: ensayo PREDIMED-Plus.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01226
Duration: 01/01/2020-31/12/2022

Estruch R. **Food phytochemicals matter for cardiometabolic health.**
Sponsored by: European Commission and Instituto de Salud Carlos III (ISCIII). CE_ERA_HDHL_19 and AC19/00100
Duration: 02/04/2019-02/04/2022

DOCTORAL THESES

Lopez A. **Unitats de Diagnòstic Ràpid: comparació d'efectivitat entre hospital de districte vs. universitari i anàlisi de predictors de temps diagnòstic i costos.**
PhD student: Elisabet Montori Palacin

2.10 Respiratory biophysics and bioengineering

LOCATION
UB School of Medicine

KEYWORDS
1. **Respiratory mechanics**
2. **Lung bioengineering**
3. **Neuroimaging in refractory epilepsy**
4. **Neuroimaging in Parkinson's disease**

RELATED DISEASES
1. **Alzheimer's disease**
2. **Parkinson disease**
3. **Chronic obstructive pulmonary disease (COPD)**
4. **Obstructive sleep apnea**
5. **Acute respiratory failure**

GROUP INVOLVED IN
CIBERES
CIBER-BBN

Original publications

TOTAL	18
IF	97,06
Mean IF	5,39
Q1	72%
D1	22%
MA	28%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Ramon Farré (UB)
T. 93 402 45 15
rfarre@ub.edu

RESEARCHERS
Isaac Almendros (UB)
Daniel Navajas (UB)
Domenec Ros (UB)

PRE-DOCTORAL RESEARCHERS
Jair Asir (UB)
Ignacio Cabrera (UB)
Bryan Falcones (UB)
Ignasi Jorba (UB)
Esther Marhuenda (UB)

TECHNICIANS
Miguel Angel Rodriguez Lazaro (UB)
Elisabet Urrea (UB)

PROBLEM

The application of advanced biophysical techniques is essential for improving diagnostic tools (especially those used for medical imaging), as well as to optimise therapeutic devices for respiratory diseases.

APPROACH

The group studies the biophysical mechanisms that determine respiratory function. It also develops models and methods for the processing of images and biomedical signals.

IMPACT

The group has provided some keys for a better understanding of certain respiratory diseases linked to hypoxia.

It is also improving our diagnostic (medical imaging) and therapeutic (respiratory support) tools, such as systems for evaluating the quality of devices used to treat obstructive sleep apnoea.

RESEARCH LINES

- Biomedical imaging analysis.
- Molecular and cellular nanomechanics.
- Respiratory mechanics.

PUBLICATIONS

Originals / I.F.: 97.057

1. Garmendia O, Rodríguez-Lazaro MA, Otero J, Phan P, Stoyanova A, Dinh-Xuan AT, Gozal D, Navajas D, Montserrat JM, Farré R. **Low-cost, easy-to-build non-invasive pressure support ventilator for under-resourced regions: open source hardware description, performance and feasibility testing.** *European Respiratory Journal.* 55(6):2000846. I.F.: 12.339

2. Ryan S, Cummins EP, Farre R, Gileles-Hillel A, Jun JC, Oster H, Pepin JL, Ray DW, Reutrakul S, Sanchez-de-la-Torre M, Tamisier R, Almendros I. **Understanding the Pathophysiological Mechanisms of Cardiometabolic Complications in Obstructive Sleep Apnoea - Towards Personalised Treatment Approaches.** *European Respiratory Journal.* 56(2):1902295. I.F.: 12.339

3. Jorge C, Targa A, Benítez ID, Dakterzada F, Torres G, Minguez O, Carnes A, Pujol M, Gibert A, López R, Gaeta AM, Dalmases M, Farré R, Sánchez-de-la-Torre M, Barbé F, Piñol-Ripoll G. **Obstructive sleep apnoea and cognitive decline in mild-to-moderate Alzheimer's disease.** *European Respiratory Journal.* 56(5):2000523. I.F.: 12.339

4. Prat-Vidal C; Rodríguez-Gómez L; Aylagas M; Nieto-Nicolau N; Gastelurrutia P; Agustí E; Gálvez-Montón C; Jorba I; Teis A; Monguió-Tortajada M; Roura S; Vives J; Torrents-Zapata S; Coca MI; Reales L; Cámara-Rosell ML; Cediel G; Coll R; Farré R; Navajas D; Vilarrodona A; García-López J; Muñoz-Guijosa C; Querol S; Bayes-Genis A. **First-in-human PeriCord cardiac bioimplant: Scalability and GMP manufacturing of an allogeneic**

engineered tissue graft. *Ebiomedicine*. 54:102729. I.F.: 5.736

5. Cubillos-Zapata C, Martínez-García MÁ, Díaz-García E, Toledano V, Campos-Rodríguez F, Sánchez-de-la-Torre M, Nagore E, Martorell-Calatayud A, Hernández Blasco L, Pastor E, Abad-Capa J, Montserrat JM, Cabriada-Nuño V, Cano-Pumarega I, Corral-Peñafiel J, Arias E, Mediano O, Somoza-González M, Dalmau-Arias J, Almendros I, Farré R, López-Collazo E, Gozal D, García-Río F, Spanish Sleep Network. **Proangiogenic factor midkine is increased in melanoma patients with sleep apnea and induces tumor cell proliferation.** *Faseb Journal.* 34(12):16179-16190. I.F.: 4.966

6. Lugo V; Torres M; Garmendia O; Suarez-Giron M; Ruiz C; Carmona C; Chiner E; Tarraubella N; Dalmases M; Pedro A; Egea C; Abellana M; Mayos M; Monasterio C; Masa J; Farré R; Montserrat J. **Intra- and Inter-Physician Agreement in Therapeutic Decision for Sleep Apnea Syndrome.** *Archivos de Bronconeumología.* 56(1):18-22. I.F.: 4.957

7. Nonaka P; Falcones B; Farre R; Artigas A; Almendros I; Navajas D. **Biophysically Preconditioning Mesenchymal Stem Cells Improves Treatment of Ventilator-Induced Lung Injury.** *Archivos de Bronconeumología.* 56(3):179-181. I.F.: 4.957

8. Castro-Grattoni AL, Suarez-Giron M, Benitez I, Torres M, Almendros I, Farre R, Montserrat JM, Dalmases M, Gozal D, Sánchez-de-la-Torre M, Spanish Sleep Network. **Effect of age on the cardiovascular remodelling induced by chronic intermittent hypoxia as a murine model of sleep apnoea.** *Respirology*. 25(3):312-320. I.F.: 4.880

9. Cubillos-Zapata C, Almendros I, Díaz-García E, Toledano V, Casitas R, Galera R, López-Collazo E, Farre R, Gozal D, García-Rio F. **Differential effect of intermittent hypoxia and sleep fragmentation on PD-1/PD-L1 upregulation.** *Sleep*. 43(5):zsz285. I.F.: 4.805

10. Cubillos-Zapata C, Martínez-García MÁ, Díaz-García E, Jaureguizar A, Campos-Rodríguez F, Sánchez-de-la-Torre M, Nagore E, Martorell-Calatayud A, Blasco LH, Pastor E, Abad-Capa J, Montserrat JM, Cabriada-Nuño V, Cano-Pumarega I, Corral-Peñafiel J, Arias E, Mediano O, Somoza-González M, Dalmau-Arias J, Almendros I, Farré R, López-Collazo E, Gozal D, García-Río F. **Obesity attenuates the effect of sleep apnea on active TGF-ß1 levels and tumor aggressiveness in patients with melanoma.** *Scientific Reports (Nature Publisher Group).* 10(1):15528. I.F.: 3.998

11. Gaeta AM; Benítez ID; Jorge C; Torres G; Dakterzada F; Minguez O; Huerto R; Pujol M; Carnes A; Dalmases M; Gibert A; Farré R; de la Torres MS; Barbé F; Piñol-Ripoll G. **Prevalence of obstructive sleep apnea in Alzheimer's disease patients.** *Journal Of Neurology.* 267(4):1012-1022. I.F.: 3.956

12. Sanz-Fraile, Hector; Amoros, Susana; Mendizabal, Irene; Galvez-Monton, Carolina; Prat-Vidal, Cristina; Bayes-Genis, Antoni; Navajas, Daniel; Farre, Ramon; Otero, Jorge. **Silk-Reinforced Collagen Hydrogels with Raised Multiscale Stiffness for Mesenchymal Cells 3D Culture.** *Tissue Engineering Part a.* 26(5-6):358-370. I.F.: 3.776

13. Torres M; Martinez-Garcia MÁ; Campos-Rodriguez F; Gozal D; Montserrat JM; Navajas D; Farré R; Almendros I. **Lung cancer aggressiveness in an intermittent hypoxia murine model of postmenopausal sleep apnea.** *Menopause-The Journal Of The North American Menopause Society.* 27(6):706-713. I.F.: 3.305

14. Rey E, Del Pozo-Maroto E, Marañón P, Beeler B, García-García Y, Landete P, Isaza SC, Farré R, García-Monzón C, Almendros I, González-Rodríguez Á. **Intrahepatic Expression of Fatty Acid Translocase CD36 Is Increased in Obstructive Sleep Apnea.** *Frontiers Of Medicine.* 7(450). I.F.: 3.297

15. Cananzi SG; White LA; Barzegar M; Boyer CJ; Chernyshev OY; Yun JW; Kelley RE; Almendros I; Minagar A; Farré R; Alexander JS. **Obstructive sleep apnea intensifies stroke severity following middle cerebral artery occlusion.** *Sleep Medicine.* 67:278-285. I.F.: 3.038

16. Cabrera-Aguilera, Ignacio; Benito, Begona; Tajes, Marta; Farre, Ramon; Gozal, David; Almendros, Isaac; Farre, Nuria. **Chronic Sleep Fragmentation Mimicking Sleep Apnea Does Not Worsen Left-Ventricular Function in Healthy and Heart Failure Mice.** *Frontiers In Neurology.* 10(1364). I.F.: 2.889

17. Cabrera-Aguilera I, Falcones B, Calvo-Fernández A, Benito B, Barreiro E, Gea J, Farré R, Almendros I, Farré N. **The conventional isoproterenol-induced heart failure model does not consistently mimic the diaphragmatic dysfunction observed in patients.** *Plos One.* 15(7):e0236923. I.F.: 2.740

18. Luiso D; Villanueva JA; Belarte-Tornero LC; Fort A; Blázquez-Bermejo Z; Ruiz S; Farré R; Rigau J; Martí-Almor J; Farré N. **Surface respiratory electromyography and dyspnea in acute heart failure patients**. *Plos One.* 15(4):e0232225. I.F.: 2.740

Review / I.F.: 11.691

1. Gozal D, Almendros I, Phipps AI, Campos-Rodriguez F, Martínez-García MA, Farré R. **Sleep Apnoea Adverse Effects on Cancer: True, False, or Too Many Confounders?** *International Journal Of Molecular Sciences.* 21(22):8779. I.F.: 4.556

2. Almendros, Isaac; Martinez-Garcia, Miguel A; Farre, Ramon; Gozal, David. **Obesity, sleep apnea, and cancer.** *International Journal Of Obesity.* 44(8):1653-1667. I.F.: 4.419

3. Pons-Òdena M; Valls A; Grifols J; Farré R; Cambra Lasosa FJ; Rubin BK. **COVID-19 and respiratory support devices.** *Paediatric Respiratory Reviews.* 35:61-63. I.F.: 2.716

Letters / I.F.: 4.957

1. Garmendia O; Farré R; González M; Alonso-Alvarez ML; Perez N; Martí S; Montserrat JM. **Quality Assessment of Real-Life Performance of Home Mechanical Ventilators.** *Archivos de Bronconeumología.* 56(4):258-259. I.F.: 4.957

Editorial / I.F.: 17.296

1. Calverley PMA, Farré R. **Oscillometry: old physiology with a bright future.** *European Respiratory Journal.* 56(3):2001815. I.F.: 12.339

2. Farré R; Puig-Domingo M; Ricart P; Nicolás JM. **Emergency Mechanical Ventilators for Covid-19.** *Archivos de Bronconeumología.* 56(2):7-8. I.F.: 4.957

Clinical Guidelines / I.F.: 12.339

1. King, Gregory G; Bates, Jason; Berger, Kenneth, I; Calverley, Peter; de Melo, Pedro L; Dellaca, Raffaele L; Farre, Ramon; Hall, Graham L; Ioan, Iulia; Irvin, Charles G; Kaczka, David W; Kaminsky, David A; Kurosawa, Hajime; Lombardi, Enrico; Maksym, Geoffrey N; Marchal, Franois; Oppenheimer, Beno W; Simpson, Shannon J; Thamrin, Cindy; van den Berge, Maarten; Oostveen, Ellie. **Technical standards for respiratory oscillometry.** *European Respiratory Journal.* 55(2):1900753. I.F.: 12.339

GRANTS FOR RESEARCH IN PROGRESS

Almendros I. **Hidrogeles de matriz extracelular pulmonar para preacondicionamiento e instilación de células madre mesenquimales en el tratamiento de enfermedades respiratorias severas.**
Sponsored by Ministerio de Ciencia e Innovación y Univeresidades.
MCIU_PID2019-108958RB-I00
Duration: 01/09/2020-31/08/2023

Farré R. **Impacte de l'apnea obstructiva del son en la progressió de la malaltia d'Alzheimer. Paper de la hipòxia i la fragmentació del son.**
Sponsored by: Fundació la Marató de TV3.
Neuro_14
Duration: 03/06/2015-31/12/2020

Farré R. **Efectos de la hipoxia/hipercapnia en la interacción biomecánica célula-matriz pulmonar en la progresión de las enfermedades respiratorias.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
SAF2017-85574-R
Duration: 01/01/2018-31/12/2020

DOCTORAL THESES

Farré R, Montserrat JM. **Positive pressure therapy in respiratory diseases: telemedicine management in sleep apnea and quality control in noninvasive mechanical ventilation.**
PhD student: Onintza Garmendia Sorrondegui

2.11 Arrhythmias and physical activity

LOCATION
CELLEX building, floor 2 A
HCB building

KEYWORDS
1. **Atrial fibrillation**
2. **Endurance exercise**
3. **Animal models**

RELATED DISEASES
1. **Atrial fibrillation**
2. **Vascular disease**

GROUP INVOLVED IN
CIBERCV
AGAUR_SGR17: 1548

Original publications

TOTAL	8
IF	27,92
Mean IF	3,49
Q1	25%
D1	0%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Eduard Guasch (HCB-IDIBAPS)
T. 93 227 48 05
eguasch@clinic.cat

ASSISTANT RESEARCHERS
Montserrat Batlle (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Gemma Sangüesa (CIBER)

PRE-DOCTORAL RESEARCHERS
Aline Cecilia Meza (UB)

TECHNICIANS
Anna Alcarraz (FCRB)

PROBLEM

Our increasingly sedentary lifestyles and lack of physical activity constitute one of the major problems for Western societies. While moderate physical activity is essential for maintaining optimal cardiovascular health, increasing numbers of people are taking part in very high-intensity activities, such as marathons and triathlons.

Recent studies carried out at Hospital Clínic-IDIBAPS have shown that this type of exercise may increase the risk of certain cardiac diseases, especially atrial fibrillation and right ventricular arrhythmia.

APPROACH

The group uses a multidisciplinary approach in order to identify and understand the causes of exercise-induced disorders. It uses animal models, in which it attempts to reproduce the effects of very-high intensity physical exercise and of arrhythmias, and it also conducts studies in patients and healthy volunteers.

In order to analyse these, it uses in vitro techniques (such as tissue staining and the study of RNA and protein expression), ex vivo studies (study of the function of isolated cells or organs) and in vivo studies (studies in live animals).

IMPACT

The results obtained to date have made it possible to confirm that exercise increases the risk of arrhythmias in the atria and ventricles, possibly due to the appearance of scar tissue (fibrosis) in the heart and changes in the autonomic nervous system.

Cardiac scar tissue and other disorders of heart structure and function only appear when the exercise is of very high intensity and prolonged over time, whereas moderate exercise appears to be safe and even beneficial.

The group's research is currently aimed at identifying these consequences of very high-intensity physical exercise and, particularly, at understanding why they occur and how they can be prevented.

This information should make it possible to design more efficient diagnostic and therapeutic strategies targeting the initial causes.

RESEARCH LINES

- Characterization of the pathophysiology of cardiac arrhythmias.

- Extra-cardiac consequences of very high-intensity physical activity.

- Mechanisms of cardiac arrhythmias in high-level athletes.

PUBLICATIONS

Originals / I.F.: 27.918

1. Bisbal F, Benito E, Teis A, Alarcón F, Sarrias A, Caixal G, Villuendas R, Garre P, Soto N, Cozzari J, Guasch E, Juncà G, Prat-Gonzalez S, Perea RJ, Bazán V, Tolosana JM, Arbelo E, Bayés-Genís A, Mont L .

Magnetic Resonance Imaging-Guided Fibrosis Ablation for the Treatment of Atrial Fibrillation: The ALICIA Trial. *Circulation-Arrhythmia and Electrophysiology.* 13(11):e008707. I.F.: 4.393

2. Quinto L, Cozzari J, Benito E, Alarcón F, Bisbal F, Trotta O, Caixal G, San Antonio R, Garre P, Prat-Gonzalez S, Perea RJ, Tolosana JM, Berruezo A, Arbelo E, Roca-Luque I, Sitges M, Brugada J, Guasch E, Mont L. **Magnetic resonance-guided re-ablation for atrial fibrillation is associated with a lower recurrence rate: a case-control study.** *Europace.* 22(12):1805-1811. I.F.: 4.045

3. Roca-Luque I, Van Breukelen A, Alarcon F, Garre P, Tolosana JM, Borras R, Sanchez P, Zaraket F, Doltra A, Ortiz-Perez JT, Prat-Gonzalez S, Perea RJ, Guasch E, Arbelo E, Berruezo A, Sitges M, Brugada J, Mont L. **Ventricular scar channel entrances identified by new wideband cardiac magnetic resonance sequence to guide ventricular tachycardia ablation in patients with cardiac defibrillators.** *Europace.* 22(4):598-606. I.F.: 4.045

4. Alarcón F, Cabanelas N, Izquierdo M, Benito E, Figueras I Ventura R, Guasch E, Prat-Gonzalez S, Perea RJ, Borràs R, Trotta O, Arbelo E, Tolosana JM, Sitges M, Berruezo A, Brugada J, Mont L. **Cryoballoon vs. radiofrequency lesions as detected by late-enhancement cardiac magnetic resonance after ablation of paroxysmal atrial fibrillation: a case-control study.** *Europace.* 22(3):382-387. I.F.: 4.045

5. Winters J; von Braunmuhl ME; Zeemering S; Gilbers M; Brink TT; Scaf B; Guasch E; Mont L; Batlle M; Sinner M; Hatem S; Mansour MK; Fabritz L; Sommerfeld LC; Kirchhof P; Isaacs A; Stoll M; Schotten U; Verheule S. **JavaCyte, a novel open-source tool for automated quantification of key hallmarks of cardiac structural remodeling.** *Scientific Reports (Nature Publisher Group).* 10(1):20074. I.F.: 3.998

6. Piguillem, Sofia V; Gamella, Maria; Garcia de Frutos, Pablo; Batlle, Montserrat; Yanez-Sedeno, Paloma; Messina, German A; Fernandez-Baldo, Martin A; Campuzano, Susana; Pedrero, Maria; Pingarron, Jose M. **Easily Multiplexable Immunoplatform to Assist Heart Failure Diagnosis through Amperometric Determination of Galectin-3.** *Electroanalysis.* (32):2775-2785. I.F.: 2.544

7. Tolosana JM; Guasch E; San Antonio R; Apolo J; Pujol-López M; Chipa-Ccasani F; Trucco E; Roca-Luque I; Brugada J; Mont L. **Very high pacing thresholds during long-term follow-up predicted by a combination of implant pacing threshold and impedance in leadless transcatheter pacemakers.** *Journal of Cardiovascular Electrophysiology.* 31(4):868-874. I.F.: 2.424

8. Trotta O, Alarcón F, Guasch E, Benito EM, San Antonio R, Perea RJ, Prat-Gonzalez S, Apolo J, Sitges M, Tolosana JM, Mont L, other members of the Atrial Fibrillation Unit. **Impact of cryoballoon applications on lesion gaps detected by magnetic resonance after pulmonary vein isolation.** *Journal of Cardiovascular Electrophysiology.* 31(3):638-646. I.F.: 2.424

Letters / I.F.: 4.642

1. San Antonio R, Alarcón F, Guasch E, Tolosana JM, Mont L, Roca-Luque I. **Epicardial ablation of ventricular tachycardia via the aortic cusps in ischemic cardiomyopathy.** *Revista Española de Cardiología.* 73(8):685-687. I.F.: 4.642

Case Reports / I.F.: 4.045

1. San Antonio R; Pujol-López M; Guasch E; Mont L; Tolosana JM. **Subcutaneous implantable cardioverter-defibrillator infection affecting deep tissues: is it always mandatory to remove the device?** *Europace.* 22(5):776. I.F.: 4.045

Consortium Publications / I.F.: 40.978

1. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

2. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

3. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

4. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities**. *Annals Of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

5. Quesada A; Cózar R; Anguera I; en representación de los colaboradores del Registro Español de Ablación con Catéter. **[Spanish Catheter Ablation Registry. 19th Official Report of the Heart Rhythm Association of the Spanish Society of Cardiology (2019).** *Revista Española de Cardiología.* 73(12):1049-1060. I.F.: 4.836

GRANTS FOR RESEARCH IN PROGRESS

Batlle M. **Acidosis asociada al ejercicio extremo y su efecto en la función mitocondrial vascular.**
Sponsored by: Fundación Casa del Corazón (FEC). SEC_BASICA_02
Duration: 26/10/2017-

Guasch E, Batlle M. **Profundización y validación de las consecuencias adversas cardiovasculares inducidas por el ejercicio de alta intensidad: de la poyata a los atletas y viceversa.**

Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00443
Duration: 01/01/2020-31/12/2022

Guasch E. **Caracterización del remodelado a dosis crecientes de ejercicio físico como sustrato para el desarrollo de patología inducida por ejercicio.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00703
Duration: 01/01/2017-30/06/2021

Guasch E, Mont L. **Personalized Therapies for Atrial Fibrillation. A Translational Approach.**
Sponsored by: European Commission. CE_H2020-MSCA-ITN-19
Duration: 01/02/2020-31/01/2024

2.12 Atrial fibrillation biopathology and therapy

LOCATION
HCB building

KEYWORDS
1. **Atrial fibrillation (AF)**
2. **AF ablation**
3. **MRI guided ablation**

RELATED DISEASES
1. **Atrial fibrillation (AF)**

GROUP INVOLVED IN
CIBERCV
AGAUR_SGR17: 1548

Original publications

TOTAL	24
IF	**162,92**
Mean IF	**6,79**
Q1	**29%**
D1	**13%**
MA	**25%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Lluís Mont (HCB)
T. 93 227 17 78
lmont@clinic.cat

RESEARCHERS
M. Angeles Castel (HCB)
José M Tolosana (HCB)

POST-DOCTORAL RESEARCHERS
Ivo Roca (HCB)

PRE-DOCTORAL RESEARCHERS
Gal·la Caixal (IDIBAPS)
Margarida Pujol (HCB)
Rodolfo San Antonio (CIBER-HCB)
Paula Sánchez Somonte (CIBER-IDIBAPS)

TECHNICIANS
Roger Borràs (FCRB)

NURSING STAFF
Alba Cano (HCB)
Rebeca Domingo (HCB)
Mireia Niebla (HCB)
Miriam Sánchez Aymerich (IDIBAPS)
Silvia Vidorreta (HCB-FCRB)

ADMINISTRATIVE STAFF
M. Neus Portella (FCRB)
Carolina Sanroman (FCRB)

COLLABORATORS
Till Althoff (HCB-FCRB)
Paz Garre (HCB)
Enric Invers (IDIBAPS)
Dahyr A. Olivas (FCRB)
Sara Vázquez (HCB)

VISITING SCIENTISTS
José Luís Puente (UB)

PROBLEM

Atrial fibrillation (AF) is a highly prevalent disease among the population. In fact, it is the most frequent arrhythmia and can have serious health effects on sufferers. It is one of the main causes of morbidity and mortality and it increases the risk of heart failure, stroke and death.
Rates of AF increase with age. With the ageing of the current population, treatment of AF has a considerable economic impact on the health system.

APPROACH

The group studies the causes of atrial fibrillation with the aim of understanding the mechanisms that trigger it and of preventing its development. Based on the results of these studies and given the importance of early detection of the disease, it is being approached from whichever service has detected it: A&E, Primary Care, Neurology (Stroke Code) or Cardiology.

The multidisciplinary Atrial Fibrillation Unit has provided the mechanisms to implement this approach and shorten the time between detection, diagnosis and treatment. Continuous pharmacological updates and interventional approach techniques are gradually enabling its impact to be reduced.

IMPACT

The group's research has helped improve the way in which patients with atrial fibrillation (AF) are treated. The group has collaborated in the development of the ablation technique from the beginning, and it continues to study how to improve its success, by adapting it to each individual patient.

It has participated in many of the studies that have helped demonstrate the efficacy of new anticoagulant drugs. At the scientific level, the group's identification of physical exercise as a cause of AF has had a significant impact.

RESEARCH LINES

- Etiological factors of atrial fibrillation.

- Improvement of atrial fibrillation therapy.

- Non-invasive, imaging-based assessment of atrial fibrillation pathology.

PUBLICATIONS

Originals / I.F.: 162.92

1. Kirchhof P, Camm AJ, Goette A, Brandes A, Eckardt L, Elvan A, Fetsch T, van Gelder IC, Haase D, Haegeli LM, Hamann F, Heidbüchel H, Hindricks G, Kautzner J, Kuck KH, Mont L, Ng GA, Rekosz J, Schoen N, Schotten U, Suling A, Taggeselle J, Themistoclakis S, Vettorazzi E, Vardas P, Wegscheider K, Willems S, Crijns HJGM, Breithardt G, EAST-AFNET 4 Trial Investigators. **Early Rhythm-Control Therapy in Patients with Atrial Fibrillation.** *New England Journal Of Medicine*. 383(14):1305-1316. I.F.: 74.699

2. Garweg C; Khelae SK; Steinwender C; Sun Chan JY; Ritter P; Johansen JB; Sagi V; Epstein LM; Piccini JP; Pascual M; Mont L; Willems R; Sheldon T; Splett V; Stromberg K; Wood N; Chinitz L. **Predictors of atrial mechanical sensing and atrioventricular synchrony with a leadless ventricular pacemaker: Results from the MARVEL 2 Study.** *Heart Rhythm.* 17(12):2037-2045. I.F.: 5.731

3. Acosta J; Soto-Iglesias D; Jáuregui B; Armenta JF; Penela D; Frutos-López M; Arana-Rueda E; Pedrote A; Mont L; Berruezo A. **Long-term outcomes of ventricular tachycardia substrate ablation incorporating hidden slow conduction analysis.** *Heart Rhythm.* 17(10):1696-1703. I.F.: 5.731

4. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combinations are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis.** *Journal Of Antimicrobial Chemotherapy.* 75(12):3586-3592. I.F.: 5.439

5. Nunez-Garcia, Marta; Bernardino, Gabriel; Alarcon, Francisco; Caixal, Gala; Mont, Llis; Camara, Oscar; Butakoff, Constantine. **Fast Quasi-Conformal Regional Flattening of the Left Atrium**. *Ieee Transactions On Visualization And Computer Graphics.* 26(8):2591-2602. I.F.: 4.558

6. Bisbal F, Benito E, Teis A, Alarcón F, Sarrias A, Caixal G, Villuendas R, Garre P, Soto N, Cozzari J, Guasch E, Juncà G, Prat-Gonzalez S, Perea RJ, Bazán V, Tolosana JM, Arbelo E, Bayés-Genís A, Mont L. **Magnetic Resonance Imaging-Guided Fibrosis Ablation for the Treatment of Atrial Fibrillation: The ALICIA Trial.** *Circulation-Arrhythmia And Electrophysiology.* 13(11):e008707. I.F.: 4.393

7. Hernandez-Ojeda J, Arbelo E, Jorda P, Borras R, Campuzano O, Sarquella-Brugada G, Iglesias A, Mont L, Brugada R, Brugada J. **The role of clinical assessment and electrophysiology study in Brugada syndrome patients with syncope.** *American Heart Journal.* 220:213-223. I.F.: 4.153

8. Quinto L, Cozzari J, Benito E, Alarcón F, Bisbal F, Trotta O, Caixal G, San Antonio R, Garre P, Prat-Gonzalez S, Perea RJ, Tolosana JM, Berruezo A, Arbelo E, Roca-Luque I, Sitges M, Brugada J, Guasch E, Mont L. **Magnetic resonance-guided re-ablation for atrial fibrillation is associated with a lower recurrence rate: a case-control study.** *Europace.* 22(12):1805-1811. I.F.: 4.045

9. Penela D; Jáuregui B; Fernández-Armenta J; Aguinaga L; Tercedor L; Ordóñez A; Acosta J; Bisbal F; Vassanelli F; Teres C; Aceña M; Martí-Almor J; De Sensi F; Vatasescu R; Borràs R; Sánchez Millán P; Soto-Iglesias D; Oller Martínez G; Carballo J; Berruezo A. **Influence of baseline QRS on the left ventricular ejection fraction recovery after frequent premature ventricular complex ablation.** *Europace.* 22(2):274-280. I.F.: 4.045

10. Linhart M, Doltra A, Acosta J, Borràs R, Jáuregui B, Fernández-Armenta J, Anguera I, Bisbal F, Martí-Almor J, Tolosana JM, Penela D, Soto-Iglesias D, Villuendas R, Perea RJ, Ortiz JT, Bosch X, Auricchio A, Mont L, Berruezo A . **Ventricular arrhythmia risk is associated with myocardial scar but not with response to cardiac resynchronization therapy.** *Europace.* 22(9):1391-1400. I.F.: 4.045

11. Roca-Luque I, Van Breukelen A, Alarcon F, Garre P, Tolosana JM, Borras R, Sanchez P, Zaraket F, Doltra A, Ortiz-Perez JT, Prat-Gonzalez S, Perea RJ, Guasch E, Arbelo E, Berruezo A, Sitges M, Brugada J, Mont L. **Ventricular scar channel entrances identified by new wideband cardiac magnetic resonance sequence to guide ventricular tachycardia ablation in patients with cardiac defibrillators.** *Europace.* 22(4):598-606. I.F.: 4.045

12. Alarcón F, Cabanelas N, Izquierdo M, Benito E, Figueras I Ventura R, Guasch E, Prat-Gonzalez S, Perea RJ, Borràs R, Trotta O, Arbelo E, Tolosana JM, Sitges M, Berruezo A, Brugada J, Mont L. **Cryoballoon vs. radiofrequency lesions as detected by late-enhancement cardiac magnetic resonance after ablation of paroxysmal atrial fibrillation: a case-control study**. *Europace.* 22(3):382-387. I.F.: 4.045

13. Hoffmann P; Diaz Ramirez I; Baldenhofer G; Stangl K; Mont L; Althoff TF. **Randomized study defining the optimum target interlesion distance in ablation index-guided atrial fibrillation ablation.** *Europace.* 22(10):1480-1486. I.F.: 4.045

14. Zink MD; Chua W; Zeemering S; di Biase L; Antoni BL; David C; Hindricks G; Haeusler KG; Al-Khalidi HR; Piccini JP; Mont L; Nielsen JC; Escobar LA; de Bono J; Van Gelder IC; de Potter T; Scherr D; Themistoclakis S; Todd D; Kirchhof P; Schotten U. **Predictors of recurrence of atrial fibrillation within the first 3 months after ablation.** *Europace.* 22(9):1337-1344. I.F.: 4.045

15. Doste R; Sebastian R; Gomez JF; Soto-Iglesias D; Alcaine A; Mont L; Berruezo A; Penela D; Camara O. **In silico pace-mapping: prediction of left vs.** *Europace.* 22(9):1419-1430. I.F.: 4.045

16. Kloosterman M; Chua W; Fabritz L; Al-Khalidi HR; Schotten U; Nielsen JC; Piccini JP; Di Biase L; Häusler KG; Todd D; Mont L; Van Gelder IC; Kirchhof P; AXAFA-AFNET 5 investigators. **Sex differences in catheter ablation of atrial fibrillation: results from AXAFA-AFNET 5.** *Europace.* 22(7):1026-1035. I.F.: 4.045

17. Winters J; von Braunmuhl ME; Zeemering S; Gilbers M; Brink TT; Scaf B; Guasch E; Mont L; Batlle M; Sinner M; Hatem S; Mansour MK; Fabritz L; Sommerfeld LC; Kirchhof P; Isaacs A; Stoll M; Schotten U; Verheule S.

JavaCyte, a novel open-source tool for automated quantification of key hallmarks of cardiac structural remodeling. *Scientific Reports (Nature Publisher Group).* 10(1):20074. I.F.: 3.998

18. Bosch X; Jáuregui B; Villamor N; Morales-Ruiz M; Ortiz-Pérez J; Borràs R; Penela D; Soto-Iglesias D; Perea R; Doltra A; Prat-González S; Jiménez W; Mira Á; Lasalvia L; Berruezo A. **Monocyte Subsets Are Differently Associated with Infarct Size, Left Ventricular Function, and the Formation of a Potentially Arrhythmogenic Scar in Patients with Acute Myocardial Infarction.** *Journal Of Cardiovascular Translational Research.* 13(5):722-730. I.F.: 3.312

19. Mascheroni J; Mont L; Stockburger M; Patwala A; Retzlaff H; Gallagher A. **A validation study of intraoperative performance metrics for training novice cardiac resynchronization therapy implanters.** *International Journal Of Cardiology*. 307:48-54. I.F.: 3.229

20. Aboal J; Llaó I; García García C; Sans-Roselló J; Sambola A; Andrea R; Tomás C; Bonet G; Ariza-Solé A; Viñas D; Oliveras Vilà T; Montero S; Cantalapiedra J; Pujol-López M; Hernández I; Pérez-Rodriguez M; Loma-Osorio P; Sánchez-Salado J. **Comorbidity and low use of new antiplatelets in acute coronary syndrome.** *Aging Clinical And Experimental Research*. 32(8):1525-1531. I.F.: 2.697

21. Tolosana JM; Guasch E; San Antonio R; Apolo J; Pujol-López M; Chipa-Ccasani F; Trucco E; Roca-Luque I; Brugada J; Mont L. **Very high pacing thresholds during long-term follow-up predicted by a combination of implant pacing threshold and impedance in leadless transcatheter pacemakers.** *Journal of Cardiovascular Electrophysiology.* 31(4):868-874. I.F.: 2.424

22. Trotta O, Alarcón F, Guasch E, Benito EM, San Antonio R, Perea RJ, Prat-Gonzalez S, Apolo J, Sitges M, Tolosana JM, Mont L, other members of the Atrial Fibrillation Unit. **Impact of cryoballoon applications on lesion gaps detected by magnetic resonance after pulmonary vein isolation.** *Journal Of Cardiovascular Electrophysiology*. 31(3):638-646. I.F.: 2.424

23. Bertelsen L; Alarcón F; Andreasen L; Benito E; Olesen M; Vejlstrup N; Mont L; Svendsen J. **Verification of threshold for image intensity ratio analyses of late gadolinium enhancement magnetic resonance imaging of left atrial fibrosis in 1.5T scans.** *International Journal Of Cardiovascular Imaging.* 36(3):513-520. I.F.: 1.969

24. Alcaine A; Jáuregui B; Soto-Iglesias D; Acosta J; Penela D; Fernández-Armenta J; Linhart M; Andreu D; Mont L; Laguna P; Camara O; Martínez JP; Berruezo A. **Automatic Detection of Slow Conducting Channels during Substrate Ablation of Scar-Related Ventricular Arrhythmias.** *Journal Of Interventional Cardiology.* 2020(4386841). I.F.: 1.758

Letters / I.F.: 16.103

1. Gimeno-Santos E, Coca-Martinez M, Arguis MJ, Navarro R, Lopez-Hernandez A, Castel MA, Romano B, Lopez-Baamonde M, Sandoval E, Farrero M, Sanz M, Bofill A, Martinez-Palli G. **Multimodal prehabilitation as a promising strategy for preventing physical deconditioning on the heart transplant waiting list**. *European Journal Of Preventive Cardiology.* 27(19):2367-2370. I.F.: 5.864

2. San Antonio R, Alarcón F, Guasch E, Tolosana JM, Mont L, Roca-Luque I. **Epicardial ablation of ventricular tachycardia via the aortic cusps in ischemic cardiomyopathy.** *Revista Española De Cardiología.* 73(8):685-687. I.F.: 4.642

3. Cepas-Guillén PL, Pujol-López M, San Antonio R, Arbelo E, Salgado E, Brugada J. **Brugada syndrome, Brugada phenocopy, or simply arrythmia induced by cocaine intoxication?** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias*. 32(1):72-74. I.F.: 3.173

4. Althoff TF; Mont L. **How to best assess ablation lesion formation with late gadolinium enhancement MRI.** *Journal of Cardiovascular Electrophysiology.* 31(11):3067-3068. I.F.: 2.424

Editorial / I.F.: 4.045

1. Alarcón F, Atienza F, Mont L. **Atrial fibrillation drivers mapping: should I burn or should I go?** *Europace.* 22(6):843-844. I.F.: 4.045

Case Reports / I.F.: 8.09

1. Trotta O, Alarcón F, Benito EM, Cozzari J, Tolosana JM, Mont L . **Permanent phrenic paralysis after cryoablation of atrial fibrillation.** *Europace.* 22(3):337. I.F.: 4.045

2. San Antonio R; Pujol-López M; Guasch E; Mont L; Tolosana JM. **Subcutaneous implantable cardioverter-defibrillator infection affecting deep tissues: is it always mandatory to remove the device?** *Europace.* 22(5):776. I.F.: 4.045

Consortium Publications / I.F.: 73.785

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

2. Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, Miró JM, GAMES Investigators. **A Contemporary Picture of Enterococcal Endocarditis.** *Journal of the American College of Cardiology.* 75(5):482-494. I.F.: 20.589

3. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

4. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

5. González-Vilchez F; Almenar-Bonet L; Crespo-Leiro MG; Gómez-Bueno M; González-Costello J; Pérez-Villa F; Delgado-Jiménez J; Arizón Del Prado JM; Sobrino-Márquez JM; Sousa Casasnovas I; Spanish Heart Transplant Teams; Collaborators in the Spanish Heart Transplant Registry; 1984-2019; Segovia-Cubero J; Hernández-Pérez F; Martínez Penades S; Cebrián Pinar M; López Vilella R; Sánchez-Lázaro I; Martínez-Dolz L; Paniagua-Martín MJ; Barge-Caballero E; Barge-Caballero G; Couto-Mallón D; López Granados A; Segura Saintgerons C; Menjíbar Pareja V; Carrasco Ávalos F; Cobo M; Llano-Cardenal M; Vázquez de Prada JA; Nistal Herrera F; Blázquez Z; Jesús Valero M; Ortiz C; Zataraín E; Villa A; Navas P; Martínez-Sellés M; Dolores García Cosío M; Morán Fernández L; Caravaca P; Brossa Loidi V; Roig Minguell E; Mirabet Pérez S; López López L; Zegrí I; Rangel Sousa D; Manito Lorite N; Díez Lopez C; Roca Elias J; García Romero E; Rábago Juan-Aracil G; Castel MÁ; Farrero M; Lambert Rodríguez JL; Díaz Molina B; Bernardo Rodríguez MJ; Fidalgo Muñiz C; Camino López M; Gil Jaurena JM; Gil Villanueva N; Garrido-Bravo I; Pascual Figal DA; Pastor Pérez FJ; Blasco-Peiró T; Portoles Ocampo A; Sanz Julve M; de la Fuente Galán L; Tobar Ruiz J; Recio Platero A; García-Guereta Silva L; González Rocafort Á; Labradero de Lera C; Polo López L; Gran Ipiña F; Albert Brotons DC; Abella Antón R; García Quintana A; Groba Marco MDV. Spanish Heart Transplant Registry. **31th Official Report of the Heart Failure Association of the Spanish Society of Cardiology.** *Revista Española de Cardiología.* S1885-5857(20):30374-1. I.F.: 4.642

6. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology*. 27(1):294-302. I.F.: 3.366

GRANTS FOR RESEARCH IN PROGRESS

Mont L. **Arítmies, Resincronització i imatge cardíaques.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01548
Duration: 01/01/2017-30/09/2021

Mont L. **Caracterización de la fibrosis auricular con RMC-RT: mejora de la metodología y el conocimiento de la fisiopatología de la fibrilación auricular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00573
Duration: 01/01/2020-31/12/2022

Mont L, Guasch E. **Personalized Therapies for Atrial Fibrillation. A Translational Approach.**
Sponsored by: European Commission.
CE_H2020-MSCA-ITN-19
Duration: 01/02/2020-31/01/2024

Pujol M. **Resincronització cardíaca amb estimulació hisiana: valoració de l'escurçament del QRS i del patró d'activació amb electrocardiographic imaging.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. SCC_PROJECTES_01
Duration: 07/06/2019-06/06/2022

Pujol M. **Estudi Aleatoritzat d'Estimulació Fisiolóagica versus Teràpia de resincronització biventricular: Valoració de l'escurçament del temps d'activació amb electrocardiographic imaging.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. SCC_PROJECTES_20_01
Duration: 01/11/2020 -31/10/2021

Pujol M. **Estudio aleatorizado de estimulación fisiológica versus terapia de resincronización biventricular: valoración de la reducción del tiempo de activación con electrocardiographic imaging.**
Sponsored by: Fundación Casa del Corazón (SEC). SEC_SEST-FOR-NAC20/03
Duration:24/09/2020-23/03/2021

2.13 Breathing disturbances in sleep

LOCATION
HCB building

KEYWORDS
1. **Sleep apnea**
2. **CPAP treatment**
3. **Telemedicine**

RELATED DISEASES
1. **Sleep disorders**
2. **SAOS-Sleep apnea**

GROUP INVOLVED IN
CIBERES

Original publications

TOTAL	9
IF	67,60
Mean IF	7,51
Q1	100%
D1	33%
MA	22%

IF = Impact Factor
MA = Main authorship (last or corresponding author)

GROUP LEADER
Josep Mª Montserrat (HCB)
T. 93 227 57 46
jcanal@clinic.cat

POST-DOCTORAL RESEARCHERS
Monique Carolina Suárez (HCB)
Marta Torres (CIBER)

PRE-DOCTORAL RESEARCHERS
Onintza Garmendia (CIBER)

NURSING STAFF
M Concepción Ruiz (HCB)

PROBLEM

Sleep-related breathing disorders lack a cost-effective diagnostic method that is accessible to most patients. This makes it difficult to define a treatment that is both preventive and effective.

APPROACH

The group concentrates on three lines of work to optimise the management of sleep-related breathing disorders: basic experiments that enable us to understand these disorders; clinical experiments in patients to ascertain effects on them, and multicentre experiments designed to transfer knowledge gained from research to the healthcare system.

IMPACT

The group's research in mice has made it possible to demonstrate that sleep apnoea is dangerous.

In addition, it has shown that telemedicine is a valid and cost-effective system for treating sleep-related breathing disorders, and that it is useful to treat them with CPAP, an appliance providing continuous positive airway pressure throughout the respiratory cycle.

PUBLICATIONS

Originals / I.F.: 67.597

1. Sánchez-de-la-Torre M; Sánchez-de-la-Torre A; Bertran S; Abad J; Duran-Cantolla J; Cabriada V; Mediano O; Masdeu MJ; Alonso ML; Masa JF; Barceló A; de la Peña M; Mayos M; Coloma R; Montserrat JM; Chiner E; Perelló S; Rubinós G; Mínguez O; Pascual L; Cortijo A; Martínez D; Aldomà A; Dalmases M; McEvoy RD; Barbé F; Abad L; Muñoz A; Zamora E; Vicente I; Inglés S; Egea C; Marcos J; Fernández A; Ullate J; Durán Carro J; Rodríguez JL; Mendoza MJ; Labeaga R; Diez D. **Effect of obstructive sleep apnoea and its treatment with continuous positive airway pressure on the prevalence of cardiovascular events in patients with acute coronary syndrome (ISAACC study): a randomised controlled trial.** *Lancet Respiratory Medicine.* 8(4):359-367. I.F.: 25.094

2. Garmendia O, Rodríguez-Lazaro MA, Otero J, Phan P, Stoyanova A, Dinh-Xuan AT, Gozal D, Navajas D, Montserrat JM, Farré R. **Low-cost, easy-to-build non-invasive pressure support ventilator for under-resourced regions: open source hardware description, performance and feasibility testing.** *European Respiratory Journal.* 55(6):2000846. I.F.: 12.339

3. Cubillos-Zapata C, Martínez-García MÁ, Díaz-García E, Toledano V, Campos-Rodríguez F, Sánchez-de-la-Torre M, Nagore E, Martorell-Calatayud A, Hernández Blasco L, Pastor E, Abad-Capa J, Montserrat JM, Cabriada-Nuño V, Cano-Pumarega I, Corral-Peñafiel J, Arias E, Mediano O, Somoza-González M, Dalmau-Arias J, Almendros I, Farré R, López-Collazo E, Gozal D, García-Río F, Spanish Sleep Network. **Proangiogenic factor midkine is increased in melanoma patients with sleep apnea and induces tumor cell proliferation.** *Faseb Journal.* 34(12):16179-16190. I.F.: 4.966

4. Lugo V; Torres M; Garmendia O; Suarez-Giron M; Ruiz C; Carmona C; Chiner E; Tarraubella N; Dalmases M; Pedro A; Egea C; Abellana M; Mayos M; Monasterio C; Masa J; Farré R; Montserrat J. **Intra- and Inter-Physician Agreement in Therapeutic Decision for Sleep Apnea Syndrome.** *Archivos de Bronconeumología.* 56(1):18-22. I.F.: 4.957

5. Castro-Grattoni AL, Suarez-Giron M, Benitez I, Torres M, Almendros I, Farre R, Montserrat JM, Dalmases M, Gozal D, Sánchez-de-la-Torre M, Spanish Sleep Network. **Effect of age on the cardiovascular remodelling induced by chronic intermittent hypoxia as a murine model of sleep apnoea.** *Respirology.* 25(3):312-320. I.F.: 4.880

6. Baltaxe, Erik; Embid, Cristina; Aumatell, Eva; Martinez, Maria; Barberan-Garcia, Anael; Kelly, John; Eaglesham, John; Herranz, Carmen; Vargiu, Eloisa; Maria Montserrat, Josep; Roca, Josep; Cano, Isaac. **Integrated Care Intervention Supported by a Mobile Health Tool for Patients Using Noninvasive Ventilation at Home: Randomized Controlled Trial.** *Jmir Mhealth And Uhealth.* 8(4):e16395. I.F.: 4.313

7. Cubillos-Zapata C, Martínez-García MÁ, Díaz-García E, Jaureguizar A, Campos-Rodríguez F, Sánchez-de-la-Torre M, Nagore E, Martorell-Calatayud A, Blasco LH, Pastor E, Abad-Capa J, Montserrat JM, Cabriada-Nuño V, Cano-Pumarega I, Corral-Peñafiel J, Arias E, Mediano O, Somoza-González M, Dalmau-Arias J, Almendros I, Farré R, López-Collazo E, Gozal D, García-Río F. **Obesity attenuates the effect of sleep apnea on active TGF-ß1 levels and tumor aggressiveness in patients with melanoma.** *Scientific Reports (Nature Publisher Group).* 10(1):15528. I.F.: 3.998

8. Ferrer-Lluis, Ignasi; Castillo-Escario, Yolanda; Maria Montserrat, Josep; Jane, Raimon. **Analysis of Smartphone Triaxial Accelerometry for Monitoring Sleep-Disordered Breathing and Sleep Position at Home.** *Ieee Access.* 8:71231-71244. I.F.: 3.745

9. Torres M; Martinez-Garcia MÁ; Campos-Rodriguez F; Gozal D; Montserrat JM; Navajas D; Farré R; Almendros I. **Lung cancer aggressiveness in an intermittent hypoxia murine model of postmenopausal sleep apnea.** *Menopause-The Journal of the North American Menopause Society.* 27(6):706-713. I.F.: 3.305

Letters / I.F.: 4.957

1. Garmendia O; Farré R; González M; Alonso-Alvarez ML; Perez N; Martí S; Montserrat JM. **Quality Assessment of Real-Life Performance of Home Mechanical Ventilators**. *Archivos de Bronconeumología.* 56(4):258-259. I.F.: 4.957

GRANTS FOR RESEARCH IN PROGRESS

Montserrat JM. **Telemedicina en pacientes con "sleep APNEA" que no cumplen adecuadamente el tratamiento con CPAP. Cumplidores mínimos vs cumplidores óptimos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01068
Duration: 01/01/2018-31/12/2020

DOCTORAL THESES

Montserrat JM, Farré R. **Positive pressure therapy in respiratory diseases: telemedicine management in sleep apnea and quality control in noninvasive mechanical ventilation.**
PhD student: Onintza Garmendia Sorrondegui

2.14 Clinical and experimental respiratory immunoallergy

LOCATION
CELLEX building, floor 2B

KEYWORDS
1. **Chronic rhinosinusitis and nasal polyps**
2. **Aspirin sensitive asthma**
3. **Drug & Food allergy**
4. **Olfactory disorders**
5. **Urticaria and mast cells**
6. **Endoscopic & Skull base surgery**
7. **Anaphylaxis**

RELATED DISEASES
1. **Rhinosinusitis (acute, COVID-19, chronic, nasal polyps)**
2. **Asthma (allergic, non-allergic, eosinophilic, N-ERD)**
3. **Rhinitis (allergic, non-allergic)**
4. **Smell and taste disorders**
5. **Drug-induced allergies**
6. **Food-induced allergies**
7. **Atopic dermatitis and urticaria**
8. **Sinus and skull base tumors**
9. **Anaphylaxis**

GROUP INVOLVED IN
AGAUR_SGR17: 01090
CIBER_CIBERES
RETIC_RIRAAF
RETIC_ARADYAL

Original publications

TOTAL	42
IF	226,42
Mean IF	5,39
Q1	74%
D1	36%
MA	40%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Joaquim Mullol (IDIBAPS)
T. 93 227 98 72
jmullol@clinic.cat

RESEARCHERS
Isam Alobid (HCB)
Joan Bartra (HCB)
Joaquim Enseñat (HCB)
Maria Concepció Marín (IDIBAPS)
Margarita Martin (UB)
Rosa Maria Muñoz Cano (HCB-IDIBAPS)
Mariona pascal (HCB)
César Picado (HCB)
Antonio Valero (HCB)

ASSISTANT RESEARCHERS
Joan Berenguer (HCB)
Manuel Bernal (HCB)
Josep Maria Guilemany (HCB)
Jordi Roca Ferrer (FCRB)

POST-DOCTORAL RESEARCHERS
Erola Ainsua (UB)
Ebymar Arismendi (CIBER)
Irina Bobolea (HCB)
Sara Laxe (HCB)
Maria Rueda (UB)
Valeria Tubita (UB)

PRE-DOCTORAL RESEARCHERS
Claudio Arancibia (HCB)
Giovanna Araujo (FCRB)
Sara Balsells (FCRB)
Marina Bantulà (FCRB)
Rocío Casas (IDIBAPS)
Federico de la Roca (FCRB)
Sònia Gelis (HCB)
Francesca Jaume (UB)
Cristobal Langdon (HCB)
Eduardo Lehrer (HCB)
Mauricio López Chacón (HCB)
Paula Mackers (UB)
Elizabeth Proaño (UB)
Paula Ribó (HCB)
María Jesús Rojas Lechuga (HCB)
María Ruano (IDIBAPS)
Clara San Bartolomé (HCB)
Sònia Vicens (IDIBAPS)

TECHNICIANS
Sílvia Centellas (HCB)
Rosa Cortés (HCB)
Mireya Fuentes (IDIBAPS)
Gemma López Sáiz (FCRB)
María Pérez González (FCRB)
M. Carmen Sánchez Fernández (HCB)

ADMINISTRATIVE STAFF
Paola Cucagna (FCRB)

PROBLEM

Respiratory and food allergies, chronic rhinosinusitis, and asthma are chronic inflammatory diseases with a very high prevalence: they affect more than a third of the general population, have a major impact on patients' sense of smell, reduce their quality of life, and have an enormous cost in terms of long-term health care resources.

Identifying the mechanisms of action responsible for these disorders may improve the efficacy of current treatments, allow for the development of new therapeutic strategies, and also facilitate the identification of biological markers (biomarkers) for diagnosis and for monitoring therapeutic response, within a context of personalized and precision medicine.

APPROACH

The group forms part of a multidisciplinary team of physicians and researchers who are studying the mechanisms involved in certain chronic and allergic food and respiratory diseases, including anaphylaxis, and in the problem of olfactory dysfunction.

Its translational research aims to find answers in the laboratory to questions that arise in clinical practice and to integrate the results of clinical studies and patient samples with those of animal experiments and cell models.

Analysis of specific metabolites and biomarkers using cellular and molecular biology techniques and bioinformatics to process the data are helping the group to obtain improved knowledge of the mechanisms involved in these disorders and to answer some of the questions.

IMPACT

One of the most group's most highly pursued goals is the identification of diagnostic biomarkers that may even predict treatment efficacy in inflammatory and allergic disorders and in diseases that lead to loss of the sense of smell.

By means of studies in humans and the use of in vivo (animals) and in vitro models, the group is able to evaluate the anti-inflammatory potency of new drugs, and determine the pathophysiology of certain clinical problems (asthma, chronic rhinosinusitis, food allergies, urticaria, intolerance to NSAID, anaphylaxis) as well as the mechanism of action of existing drugs (corticosteroids, biological drugs) and of new therapies (post-traumatic olfactory training and cell therapy).

RESEARCH LINES

- Inflammation of the upper and lower respiratory mucosa.

- Sense of smell in health and disease.

- Food and drug allergy.

- Anaphylaxis.

- Glucocorticoid resistance.

- Aspirin and non-steroidal anti-inflammatory drug (NSAID) intolerance.

- Pathophysiology of eosinophils, mast cells, and basophils.

- Skull base tumours.

PUBLICATIONS

Originals / I.F.: 226.415

1. Harrison T, Canonica GW, Chupp G, Lee J, Schleich F, Welte T, Valero A, Gemzoe K, Maxwell A, Joksaite S, Yang S, Howarth P, Van Dyke MK. **Real-world mepolizumab in the prospective severe asthma REALITI-A study - initial analysis.** *European Respiratory Journal.* 56(4):2000151. I.F.: 12.339

2. Gevaert P; Omachi TA; Corren J; Mullol J; Han J; Lee SE; Kaufman D; Ligueros-Saylan M; Howard M; Zhu R; Owen R; Wong K; Islam L; Bachert C. **Efficacy and safety of omalizumab in nasal polyposis: two randomized phase III trials.** *Journal of Allergy and Clinical Immunology.* 146(3):595-605. I.F.: 10.228

3. Callejas-Díaz B, Fernandez G, Fuentes M, Martínez-Antón A, Alobid I, Roca-Ferrer J, Picado C, Tubita V, Mullol J. **Integrated mRNA and microRNA transcriptome profiling during Differentiation of Human Nasal Polyp Epithelium reveals an altered Ciliogenesis.** *Allergy*. 75(10):2548-2561. I.F.: 8.706

4. Decuyper, Ine I; Pascal, Mariona; Van Gasse, Athina L; Mertens, Christel; Diaz-Perales, Araceli; Araujo, Giovanna; Torradeflot, Maria; Rius, Josefina; Balsells, Sara; Munoz-Cano, Rosa M; Bartra, Joan; Li, Lynne; Sabato, Vito; Hagendorens, Margo M; Bridts, Chris H; De Clerck, Luc S; Ebo, Didier G; Faber, Margaretha A. **Performance of basophil activation test and specific IgG4 as diagnostic tools in nonspecific lipid transfer protein allergy: Antwerp-Barcelona comparison**. Allergy. 75(3):616-624. I.F.: 8.706

5. Bogas G, Muñoz-Cano R, Mayorga C, Casas R, Bartra J, Pérez N, Pascal M, Palomares F, Torres MJ, Gómez F. **Phenotyping peach-allergic patients sensitised to LTP and analysing severity biomarkers.** *Allergy*. 75(12):3228-3236. I.F.: 8.706

6. Seys SF, De Bont S, Fokkens WJ, Bachert C, Alobid I, Bernal-Sprekelsen M, Bjermer L, Callebaut I, Cardell LO, Carrie S, Castelnuovo P, Cathcart R, Constantinidis J, Cools L, Cornet M, Clement G, Cox T, Delsupehe L, Correia-de-Sousa J, Deneyer L, De Vos G, Diamant Z, Doulaptsi M, Gane S, Gevaert P, Hopkins C, Hox V, Hummel T, Hosemann W, Jacobs R, Jorissen M, Kjeldsen A, Landis BN, Lemmens W, Leunig A, Lund V, Mariën G, Mullol J, Onerci M, Palkonen S, Proano I, Prokopakis E, Ryan D, Riechelmann H, Sahlstrand-Johnson P, Salmi-Toppila S, Segboer C, Speleman K, Steinsvik A, Surda P, Tomazic PV, Vanderveken O, Van Gerven L, Van Zele T, Verfaillie J, Verhaeghe B, Vierstraete K, Vlaminck S, Wagenmann M, Pugin B, Hellings PW. **Real-life assessment of chronic rhinosinusitis patients using mobile technology: the mySinusitisCoach project by EUFOREA.** *Allergy*. 75(11):2867-2878. I.F.: 8.706

7. Bédard A, Antó JM, Fonseca JA, Arnavielhe S, Bachert C, Bedbrook A, Bindslev-Jensen C, Bosnic-Anticevich S, Cardona V, Cruz AA, Fokkens WJ, Garcia-Aymerich J, Hellings PW, Ivancevich JC, Klimek L, Kuna P, Kvedariene V, Larenas-Linnemann D, Melén E, Monti R, Mösges R, Mullol J, Papadopoulos NG, Pham-Thi N, Samolinski B, Tomazic PV, Toppila-Salmi S, Ventura MT, Yorgancioglu A, Bousquet J, Pfaar O, Basagaña X, MASK study group. **Correlation between work impairment, scores of rhinitis severity and asthma using the MASK-air® App.** *Allergy*. 75(7):1672-1688. I.F.: 8.706

8. Bachert C; Hellings PW; Mullol J; Hamilos DL; Gevaert P; Naclerio RM; Joish VN; Chao J; Mannent LP; Amin N; Abbe A; Taniou C; Fan C; Pirozzi G; Graham NMH; Mahajan P; Staudinger H; Khan A. **Dupilumab improves health-related quality of life in patients with chronic rhinosinusitis with nasal polyposis.** *Allergy*. 75(1):148-157. I.F.: 8.706

9. Valero A, Del Cuvillo A, Navarro AM, Colás C, Sastre J, Mullol J . **Validation of the ARIA items to assess allergic rhinitis control (ARIA-C).** *Allergy*. 75(11):2964-2966. I.F.: 8.706

10. Sastre J, Del Cuvillo A, Colás C, Navarro AM, Bousquet J, Valero A, Mullol J. **Validation of the MASK-air App for assessment of allergic rhinitis.** *Allergy*. 75(11):2958-2961. I.F.: 8.706

11. Bousquet J; Akdis C; Jutel M; Bachert C; Klimek L; Agache I; Ansotegui IJ; Bedbrook A; Bosnic-Anticevich S; Canonica GW; Chivato T; Cruz AA; Czarlewski W; Del Giacco S; Du H; Fonseca JA; Gao Y; Haahtela T; Hoffmann-Sommergruber K; Ivancevich JC; Khaltaev N; Knol EF; Kuna P; Larenas-Linnemann D; Mullol J; Naclerio R; Ohta K; Okamoto Y; O'Mahony L; Onorato GL; Papadopoulos NG; Pfaar O; Samolinski B; Schwarze J; Toppila-Salmi S; Teresa Ventura M; Valiulis A; Yorgancioglu A; Zuberbier T; ARIA-MASK study group. **Intranasal corticosteroids in allergic rhinitis in COVID-19 infected patients: An ARIA-EAACI statement.** *Allergy*. I.F.: 8.706

12. Argiz L, Infante S, Machinena A, Pascal M, Echeverria L, Barni S, Garriga-Baraut T, Arasi S, Moure JD, Gomez-Carballa A, Martinon-Torres F, Boyle RJ, Vazquez-Ortiz M, BIO-FPIES study network. **Reactions on re-exposure following negative and inconclusive follow-up food challenges in**

children with acute FPIES. *Journal of Allergy and Clinical Immunology-In Practice.* 8(9):3228-3231. I.F.: 7.574

13. Buhl R; Korn S; Menzies-Gow A; Aubier M; Chapman KR; Canonica GW; Picado C; Donica M; Kuhlbusch K; Korom S; Hanania NA. **Prospective, Single-Arm, Longitudinal Study of Biomarkers in Real-World Patients with Severe Asthma.** *Journal of Allergy and Clinical Immunology-In Practice.* 8(8):2630-2639. I.F.: 7.574

14. Landolina N, Zaffran I, Smiljkovic D, Serrano-Candelas E, Schmiedel D, Friedman S, Arock M, Hartmann K, Pikarsky E, Mandelboim O, Martin M, Valent P, Levi-Schaffer F. **Activation of Siglec-7 results in inhibition of in vitro and in vivo growth of human mast cell leukemia cells.** *Pharmacological Research.* 158(104682). I.F.: 5.893

15. Wangorsch A, Kulkarni A, Jamin A, Spiric J, Bräcker J, Brockmeyer J, Mahler V, Blanca-López N, Ferrer M, Blanca M, Torres M, Gomez P, Bartra J, García-Moral A, Goikoetxea MJ, Vieths S, Toda M, Zoccatelli G, Scheurer S . **Identification and Characterization of IgE-reactive Proteins and a New Allergen (Cic a 1).** *Molecular Nutrition & Food Research.* 64(19):e2000560. I.F.: 5.309

16. Ramirez-Bajo MJ, Rovira J, Lazo-Rodriguez M, Banon-Maneus E, Tubita V, Moya-Rull D, Hierro-Garcia N, Ventura-Aguiar P, Oppenheimer F, Campistol JM, Diekmann F. **Impact of Mesenchymal Stromal Cells and Their Extracellular Vesicles in a Rat Model of Kidney Rejection.** *Frontiers In Cell and Developmental Biology.* 8(10). I.F.: 5.186

17. Vilas D, Tolosa E, Quintana M, Pont-Sunyer C, Santos M, Casellas A, Valldeoriola F, Compta Y, Martí MJ, Mullol J. **Olfaction in LRRK2 Linked Parkinson's Disease: Is It Different from Idiopathic Parkinson's Disease?** *Journal Of Parkinsons Disease.* 10(3):951-958. I.F.: 5.178

18. Izquierdo-Domínguez A, Rojas-Lechuga MJ, Chiesa-Estomba C, Calvo-Henríquez C, Ninchritz-Becerra E, Soriano-Reixach M, Poletti-Serafini D, Villarreal IM, Maza-Solano JM, Moreno-Luna R, Villarroel PP, Mateos-Serrano B, Agudelo D, Valcarcel F, Del Cuvillo A, Santamaría A, Mariño-Sánchez F, Aguilar J, Vergés P, Inciarte A, Soriano A, Mullol J, Alobid I . **Smell and taste dysfunctions in COVID-19 are associated with younger age in ambulatory settings - a multicenter cross-sectional study.** *Journal of Investigational Allergology and Clinical Immunology.* 30(5):346-357. I.F.: 5.172

19. Mariño-Sánchez F, Valls-Mateus M, Fragola C, de Los Santos G, Aguirre A, Alonso J, Valero J, Santamaría A, Rojas Lechuga MJ, Cobeta I, Alobid I, Mullol J. **Paediatric Barcelona Olfactory Test-6 (pBOT-6): Validation of a Combined Odour Identification and Threshold Screening Test in Healthy Spanish Children and Adolescents.** *Journal of Investigational Allergology and Clinical Immunology.* 30(6):439-447. I.F.: 5.172

20. Jiménez-Feijoo R, Pascal M, Moya R, Riggioni C, Domínguez O, Lózano J, Álvaro-Lozano M, Piquert M, Machinena A, Folque M, Dias M, Carnés J, Plaza AM. **Molecular diagnosis in house dust mite allergic patients suggests clinical relevance of Der p 23 in asthmatic children.** *Journal of Investigational Allergology and Clinical Immunology.* 30(2):127-132. I.F.: 5.172

21. Del Cuvillo A, Sastre J, Colás C, Navarro AM, Mullol J, Valero A. **Adaptation to Spanish and validation of the Rhinitis Control Assessment Test (RCAT) questionnaire.** *Journal of Investigational Allergology and Clinical Immunology.* 30(3):175-181. I.F.: 5.172

22. Jaume F, Quintó LL, Alobid I, Mullol J. **Direct costs of Acute Rhinosinusitis in Spain - a prospective and observational study (PROSINUS).** *Journal of Investigational Allergology and Clinical Immunology.* I.F.: 5.172

23. Gimenez-Arnau A, Bartra J, Ferrer M, Jauregui I, Borbujo J, Figueras I, Muñoz-Bellido FJ, Pedraz J, Serra-Baldrich E, Tejedor-Alonso MA, Velasco M, Terradas P, Labrador M . **A Specialized Therapeutic Approach to Chronic Urticaria Patient's Refractory to H1-Antihistamines Improves the Burden of the Disease.** *Journal of Investigational Allergology and Clinical Immunology.* I.F.: 5.172

24. Sánchez-Hernández MC; Navarro AM; Colás C; del Cuvillo A; Sastre J; Mullol J; Valero A. **Validation of the DECA criteria for allergic conjunctivitis severity and control.** *Clinical and Translational Allergy.* 10(1):43. I.F.: 5.129

25. Jurado-Escobar R, Dona I, Bogas-Herrera G, Perez-Sanchez N, Salas M, Laguna J, Munoz-Cano R, Mayorga C, Torres MJ, Cornejo-Garcia Jose A. **Platelet-Adherent Leukocytes Associated With Cutaneous Cross-Reactive Hypersensitivity to Nonsteroidal Anti-Inflammatory Drugs.** *Frontiers in Pharmacology.* 11:594427. I I.F.: 4.225

26. Plaza, Judith; Torres, Rosa; Urbano, Adrian; Picado, Cesar; de Mora, Fernando. **In Vitro and In Vivo Validation of EP2-Receptor Agonism to Selectively Achieve Inhibition of Mast Cell Activity.** *Allergy Asthma & Immunology Research.* 12(4):712-728. I.F.: 4.157

27. Marrero-González P; Iranzo A; Bedoya D; Serradell M; Niñerola-Baizán A; Perissinotti A; Gaig C; Vilaseca I; Alobid I; Santamaría J; Mullol J. **Prodromal Parkinson disease in patients with idiopathic hyposmia.** *Journal of Neurology.* 267(12):3673-3682. I.F.: 3.956

28. Van Weissenbruch R; Klimek L; Gálffy G; Emmeluth M; Koltun A; Kopietz F; Nguyen DT; Kuhl HC; Pohl W; Scadding GK; Price D; Mullol J. **MP-AzeFlu Improves the Quality-of-Life of Patients with Allergic Rhinitis.** *Journal of Asthma and Allergy.* 13:633-645. I.F.: 3.730

29. Ribó P; Molina J; Calle M; Maiz L; Campo C; Rytilä P; Plaza V; Valero A. **Prevalence of modifiable factors limiting treatment efficacy of poorly controlled asthma patients: EFIMERA observational study.** *Npj Primary Care Respiratory Medicine.* 30(1):33. I.F.: 3.231

30. Jiménez-Urbieta H; Gago B; Quiroga-Varela A; Rodríguez-Chinchilla T; Merino-Galán L; Delgado-Alvarado M; Navalpotro-Gómez I; Belloso-Iguerategui A; Marin C; Rodríguez-Oroz MC. **Motor impulsivity and delay intolerance are elicited in a dose-dependent manner with a dopaminergic agonist in parkinsonian rats.** *Psychopharmacology.* 237(8):2419-2431. I.F.: 3.130

31. Lehrer E, Nogues A, Jaume F, Mullol J, Alobid I. **Assessment of craniofacial hyperhidrosis and flushing by sphenopalatine blockade - a randomized trial.** *Rhinology.* 58(1):51-58. I.F.: 3.019

32. Bachert C; Zinreich SJ; Hellings PW; Mullol J; Hamilos DL; Gevaert P; Naclerio RM; Amin N; Joish VN; Fan C; Zhang D; Staudinger H; Pirozzi G; Graham NMH; Khan A; Mannent

LP. **Dupilumab reduces opacification across all sinuses and related symptoms in patients with CRSwNP.** *Rhinology.* 58(1):10-17. I.F.: 3.019

33. Roger A, Malet A, Moreno V, Parra A, Gutiérrez D, Lleonart R, Moreno F, Valero A, Navarro B, Hinojosa B, Justicia JL. **Real-life effect of a microcrystalline tyrosine adjuvanted mite immunotherapy in patients with allergic rhinitis.** *Immunotherapy.* 12(1):53-62. I.F.: 2.964

34. Klimek L; Price D; Gálffy G; Emmeluth M; Koltun A; Kopietz F; Nguyen DT; van Weissenbruch R; Pohl W; Kuhl HC; Scadding G; Mullol J. **Effect of Specific Immunoglobulin E Response and Comorbidities on Effectiveness of MP-AzeFlu in a Real-Life Study.** *International Archives of Allergy and Immunology.* 181(10):754-764. I.F.: 2.917

35. Lloret J; Abós-Herràndiz R; Alemany S; Allué R; Bartra J; Basagaña M; Berdalet E; Campàs M; Carreño A; Demestre M; Diogène J; Fontdecaba E; Gascon M; Gómez S; Izquierdo A; Mas L; Marquès M; Pedro-Botet J; Pery M; Peters F; Pintó X; Planas M; Sabatés A; San J; Sanchez-Vidal A; Trepat M; Vendrell C; Fleming LE. **The roses ocean and human health chair: A new way to engage the public in oceans and human health challenges.** *International Journal Of Environmental Research And Public Health.* 17(14):578. I.F.: 2.849

36. Marin C, Bonastre M, Fuentes M, Mullol J. **Globus pallidus, but not entopeduncular nucleus, 6-OHDA-induced lesion attenuates L-Dopa-induced dyskinesia in the rat model of Parkinson's disease.** *Pharmacology Biochemistry and Behavior.* 197(173013). I.F.: 2.519

37. Marin C, Bonastre M, Fuentes M, Mullol J . **Lack of correlation between dyskinesia and pallidal serotonin transporter expression-induced by L-Dopa and Pramipexole in hemiparkinsonian rats**. *Pharmacology Biochemistry and Behavior.* 197(173012). I.F.: 2.519

38. Arancibia C, Langdon C, Mullol J, Alobid I . **Lack of additive benefit of oral steroids on short-term postoperative outcomes in nasal polyposis.** *Laryngoscope.* 130(12):2742-2747. I.F.: 2.465

39. Amin N, Walker A, Alobid I, Anari S, Bast F, Bhalla RK, Cathcart R, Harries PG, Hathorn I, Philpott CM, Ramakrishnan Y, Stew B, Surda P, Ting F, Hopkins C. **Defining appropriateness criteria for endoscopic sinus surgery in management of adult dental implant patients with incidental maxillary sinus findings on cone beam computed tomography.** *Clinical Otolaryngology.* 45(6):862-869. I.F.: 2.197

40. Valero A; Izquierdo I; Kowalski ML; Scadding GK; Bousquet J; Mullol J. **Higher efficacy of rupatadine 20 mg and 10 mg versus placebo in patients with perennial allergic rhinitis: A pooled responder analysis.** *Allergy Asthma And Clinical Immunology.* 16:29. I.F.: 2.104

41. Calvo-Henriquez C, Maldonado-Alvarado B, Chiesa-Estomba C, Rivero-Fernández I, Sanz-Rodriguez M, Villarreal IM, Rodriguez-Iglesias M, Mariño-Sánchez F, Rivero-de-Aguilar A, Lechien JR, Martínez-Capoccioni G, Saussez S, Capasso R, Karkos PD, Schriever V, Martin-Martin C, Alobid I, Santamaría-Gadea A, Fragola C, Mayo-Yáñez M, Pérez-Freixo H, Ninchritz-Becerra E, Soriano-Reixach M, Mondragon-Rezola E, Ruiz-Coello MDMM, Navarro RA, García-Fernández A, Marchan-López Á. **Ethyl alcohol threshold test: a fast, reliable and affordable olfactory Assessment tool for COVID-19 patients.** *European Archives Of Oto-Rhino-Laryngology.* 277(10):2783-2792. I.F.: 1.809

42. Santamaría-Gadea A; Vaca M; de Los Santos G; Alobid I; Mariño-Sánchez F. **Greater palatine artery pedicled flap for nasal septal perforation repair: radiological study and case series.** *European Archives of Oto-Rhino-Laryngology.* 278(6):2115. I.F.: 1.809

Review / I.F.: 100.602

1. Mullol J, Mariño-Sánchez F, Valls M, Alobid I, Marin C . **The sense of smell in chronic rhinosinusitis.** *Journal of Allergy and Clinical Immunology.* 145(3):773-776. I.F.: 10.228

2. Tubita V, Callejas-Díaz B, Roca-Ferrer J, Marin C, Liu Z, Wang Y, Mullol J. **Role of microRNAs in inflammatory upper airway diseases.** *Allergy.* I.F.: 8.706

3. Doña I, Pérez-Sánchez N, Eguiluz-Gracia I, Muñoz-Cano R, Bartra J, Torres MJ, Cornejo-García JA. **Progress in understanding hypersensitivity reactions to nonsteroidal anti-inflammatory drugs.** *Allergy.* 75(3):561-575. I.F.: 8.706

4. Mullol J; del Cuvillo A; Lockey RF. **Rhinitis Phenotypes.** *Journal of Allergy and Clinical Immunology-In Practice.* 8(5):1492-1503. I.F.: 7.574

5. Izquierdo-Dominguez A, Rojas-Lechuga MJ, Mullol J, Alobid I. **Olfactory dysfunction in the COVID-19 outbreak.** *Journal of Investigational Allergology and Clinical Immunology.* 30(5):317-326. I.F.: 5.172

6. Gelis S, Rueda M, Valero A, Fernández EA, Moran M, Fernández-Caldas E. **Shellfish allergy: unmet needs in diagnosis and treatment.** *Journal of Investigational Allergology and Clinical Immunology.* 30(6):409-420. I.F.: 5.172

7. Bédard A, Basagaña X, Anto JM, Garcia-Aymerich J, Devillier P, Arnavielhe S, Bedbrook A, Onorato GL, Czarlewski W, Murray R, Almeida R, Fonseca JA, Correia da Sousa J, Costa E, Morais-Almeida M, Todo-Bom A, Cecchi L, De Feo G, Illario M, Menditto E, Monti R, Stellato C, Ventura MT, Annesi-Maesano I, Bosse I, Fontaine JF, Pham-Thi N, Thibaudon M, Schmid-Grendelmeier P, Spertini F, Chavannes NH, Fokkens WJ, Reitsma S, Dubakiene R, Emuzyte R, Kvedariene V, Valiulis A, Kuna P, Samolinski B, Klimek L, Mösges R, Pfaar O, Shamai S, Roller-Wirnsberger RE, Tomazic PV, Ryan D, Sheikh A, Haahtela T, Toppila-Salmi S, Valovirta E, Cardona V, Mullol J, Valero A, Makris M, Papadopoulos NG, Prokopakis EP, Psarros F, Bachert C, Hellings PW, Pugin B, Bindslev-Jensen C, Eller E, Kull I, Melén E, Wickman M, De Vries G, van Eerd M, Agache I, Ansotegui IJ, Bosnic-Anticevich S, Cruz AA, Casale T, Ivancevich JC, Larenas-Linnemann DE, Sofiev M, Wallace D, Waserman S, Yorgancioglu A, Laune D, Bousquet J, MASK study group. **Treatment of allergic rhinitis during and outside the pollen season using mobile technology.** *Clinical and Translational Allergy.* 10(1):62. I.F.: 5.129

8. Bousquet J, Anto JM, Iaccarino G, Czarlewski W, Haahtela T, Anto A, Akdis CA, Blain H, Canonica GW, Cardona V, Cruz AA, Illario M, Ivancevich JC, Jutel M, Klimek L, Kuna P, Laune D, Larenas-Linnemann D, Mullol J, Papadopoulos NG, Pfaar O, Samolinski B, Valiulis A, Yorgancioglu A, Zuberbier T, ARIA group. **Is diet partly responsible for differences in COVID-19 death rates between and within countries?**

Clinical and Translational Allergy. 10:16. I.F.: 5.129

9. Hox V, Lourijsen E, Jordens A, Aasbjerg K, Agache I, Alobid I, Bachert C, Boussery K, Campo P, Fokkens W, Hellings P, Hopkins C, Klimek L, Mäkelä M, Mösges R, Mullol J, Pujols L, Rondon C, Rudenko M, Toppila-Salmi S, Scadding G, Scheire S, Tomazic PV, Van Zele T, Wagemann M, van Boven JFM, Gevaert P. **Benefits and harm of systemic steroids for short- and long-term use in rhinitis and rhinosinusitis: an EAACI position paper.** *Clinical and Translational Allergy*. 10(1). I.F.: 5.129

10. Ortiz de Landazuri I; Egri N; Muñoz-Sánchez G; Ortiz-Maldonado V; Bolaño V; Guijarro C; Pascal M; Juan M. **Manufacturing and Management of CAR T-Cell Therapy in "COVID-19's Time": Central Versus Point of Care Proposals.** *Frontiers In Immunology*. 11:573179. I.F.: 5.085

11. Navinés-Ferrer A; Martín M. **Long-Tailed Unconventional Class I Myosins in Health and Disease.** *International Journal of Molecular Sciences*. 21(7):2555. I.F.: 4.556

12. Castillo-López IY, Govea-Camacho LH, Rodríguez-Torres IA, Recio-Macías DA, Alobid I, Mullol J . **Olfactory Dysfunction in a Mexican Population Outside of COVID-19 Pandemic: Prevalence and Associated Factors (the OLFAMEX Study).** *Current Allergy and Asthma Reports*. 20(12):78-78. I.F.: 3.577

13. Marin C, Langdon C, Alobid I, Mullol J. **Olfactory Dysfunction in Traumatic Brain Injury: the Role of Neurogenesis.** *Current Allergy and Asthma Reports*. 20(10):55. I.F.: 3.577

14. Mullol J, Alobid I, Mariño-Sánchez F, Izquierdo-Domínguez A, Marin C, Klimek L, Wang DY, Liu Z . **The Loss of Smell and Taste in the COVID-19 Outbreak: a Tale of Many Countries.** *Current Allergy and Asthma Reports*. 20(10):61. I.F.: 3.577

15. Jaume F, Valls-Mateus M, Mullol J. **Common Cold and Acute Rhinosinusitis: Up-to-Date Management in 2020.** *Current Allergy and Asthma Reports*. 20(7):28. I.F.: 3.577

16. Picado C, Roca-Ferrer J. **Role of the Cyclooxygenase Pathway in the Association of Obstructive Sleep Apnea and Cancer.** *Journal of Clinical Medicine*. 9(10):3237. I.F.: 3.303

17. Eguiluz-Gracia I, Palomares F, Salas M, Testera-Montes A, Ariza A, Davila I, Bartra J, Mayorga C, Torres MJ, Rondon C . **Precision Medicine in House Dust Mite-Driven Allergic Asthma.** *Journal of Clinical Medicine*. 9(12):3827. I.F.: 3.303

18. Arismendi, E; Bantula, M; Perpina, M; Picado, C. **Effects of Obesity and Asthma on Lung Function and Airway Dysanapsis in Adults and Children.** *Journal of Clinical Medicine*. 9(11):3762. I.F.: 3.303

19. Bousquet J; Czarlewski W; Zuberbier T; Mullol J; Blain H; Cristol JP; De La Torre R; Le Moing V; Pizarro Lozano N; Bedbrook A; Agache I; Akdis CA; Canonica GW; Cruz AA; Fiocchi A; Fonseca JA; Fonseca S; Gemicioğlu B; Haahtela T; Iaccarino G; Ivancevich JC; Jutel M; Klimek L; Kuna P; Larenas-Linnemann DE; Melén E; Okamoto Y; Papadopoulos NG; Pfaar O; Reynes J; Rolland Y; Rouadi PW; Samolinski B; Sheikh A; Toppila-Salmi S; Valiulis A; Choi HJ; Kim HJ; Anto JM. **Spices to Control COVID-19 Symptoms: Yes, but Not Only...** *International Archives of Allergy and Immunology*. :1-7. I.F.: 2.917

20. Izquierdo-Domínguez A, Rojas-Lechuga MJ, Mullol J, Alobid I. **Olfactory dysfunction during COVID-19 pandemic.** *Medicina Clínica*. 155(9):403-408. I.F.: 1.635

21. Nyunt TPK; Mullol J; Snidvongs K. **Immune response to fungi in diabetic patients with invasive fungal rhinosinusitis.** *Asian Pacific Journal of Allergy and Immunology*. 38(4):233-238. I.F.: 1.247

Letters / I.F.: 12.955

1. D'Amelio CM, García-Moral A, Bartra J, Azofra J, García Blanca E, Quiñones MD, Goikoetxea MJ, Martínez-Aranguren R, Gastaminza G . **Diagnostic capacity of commercial extracts versus prick by prick in the study of peanut sensitization. Which technique should we use?** *Journal of Investigational Allergology and Clinical Immunology*. 30(5):373-375. I.F.: 5.172

2. Dominguez-Ortega J, Navarro A, Delgado Romero J, Dordal T, Habernau A, Rodríguez M, Mur-Gimeno P, González Gutiérrez ML, Pérez-Francés C, Pascual Miravalles MJ, Colás C, Dávila I, Rodríguez Fernández F, Sánchez Hernández MC, Valero A, LANDSCAPE STUDY GROUP of the SEAIC. **Pollen-induced allergic asthma and rhinoconjunctivitis outcomes clearly differ from seasonal exposure to out of the season in real-life conditions: The LANDSCAPE STUDY.** *Journal of Investigational Allergology and Clinical Immunology*. 30(6):0-0. I.F.: 5.172

3. Mariño-Sánchez F, Santamaría-Gadea A, de Los Santos G, Alobid I, Mullol J. **Psychophysical olfactory testing in COVID-19: is smell function really impaired in nearly all patients?** *International Forum of Allergy & Rhinology*. 10(8):951-952. I.F.: 2.611

Editorial / I.F.: 4.957

1. Arismendi E; Picado Vallés C. **Current Role of Biomarkers in Severe Uncontrolled Asthma.** *Archivos de Bronconeumología*. 56(6):347-348. I.F.: 4.957

Case Reports / I.F.: 1.241

1. Rojas-Lechuga MJ, Remacha J, González-Sánchez N, Grau JJ, Castillo P, Haag O, Vilaseca I . **Juvenile recurrent respiratory papillomatosis treated with combined erlotinib and celecoxib: Initial report.** *International Journal of Pediatric Otorhinolaryngology*. 137(110194). I.F.: 1.241

Clinical Guidelines / I.F.: 27.991

1. Bousquet J, Schünemann HJ, Togias A, Bachert C, Erhola M, Hellings PW, Klimek L, Pfaar O, Wallace D, Ansotegui I, Agache I, Bedbrook A, Bergmann KC, Bewick M, Bonniaud P, Bosnic-Anticevich S, Bossé I, Bouchard J, Boulet LP, Brozek J, Brusselle G, Calderon MA, Canonica WG, Caraballo L, Cardona V, Casale T, Cecchi L, Chu DK, Costa EM, Cruz AA, Czarlewski W, D'Amato G, Devillier P, Dykewicz M, Ebisawa M, Fauquert JL, Fokkens WJ, Fonseca JA, Fontaine JF, Gemicioglu B, van Wijk RG, Haahtela T, Halken S, Ierodiakonou D, Iinuma T, Ivancevich JC, Jutel M, Kaidashev I, Khaitov M, Kalayci O, Kleine Tebbe J, Kowalski ML, Kuna P, Kvedariene V, La Grutta S, Larenas-Linnemann D, Lau S, Laune D, Le L, Lieberman P, Lodrup Carlsen KC, Lourenço O, Marien G, Carreiro-Martins P, Melén E,

Menditto E, Neffen H, Mercier G, Mosgues R, Mullol J, Muraro A, Namazova L, Novellino E, O'Hehir R, Okamoto Y, Ohta K, Park HS, Panzner P, Passalacqua G, Pham-Thi N, Price D, Roberts G, Roche N, Rolland C, Rosario N, Ryan D, Samolinski B, Sanchez-Borges M, Scadding GK, Shamji MH, Sheikh A, Bom AT, Toppila-Salmi S, Tsiligianni I, Valentin-Rostan M, Valiulis A, Valovirta E, Ventura MT, Walker S, Waserman S, Yorgancioglu A, Zuberbier T, Allergic Rhinitis and Its Impact on Asthma Working Group. **Next-generation Allergic Rhinitis and Its Impact on Asthma (ARIA) guidelines for allergic rhinitis based on Grading of Recommendations Assessment, Development and Evaluation (GRADE) and real-world evidence.** *Journal of Allergy and Clinical Immunology.* 145(1):70-80.e3. I.F.: 10.228

2. Klimek L; Jutel M; Akdis C; Bousquet J; Akdis M; Bachert C; Agache I; Ansotegui I; Bedbrook A; Bosnic-Anticevich S; Canonica GW; Chivato T; Cruz AA; Czarlewski W; Giacco SD; Du H; Fonseca JA; Gao Y; Haahtela T; Hoffmann-Sommergruber K; Ivancevich JC; Khaltaev N; Knol EF; Kuna P; Larenas-Linnemann D; Melen E; Mullol J; Naclerio R; Ohta K; Okamoto Y; O'Mahony L; Onorato GL; Papadopoulos NG; Pawankar R; Pfaar O; Samolinski B; Schwarze J; Toppila-Salmi S; Shamji MH; Ventura MT; Valiulis A; Yorgancioglu A; Matricardi P; Zuberbier T; ARIA-MASK study group. **Handling of allergen immunotherapy in the COVID-19 pandemic: An ARIA-EAACI statement.** *Allergy.* 75(7):1546-1554. I.F.: 8.706

3. Fokkens WJ, Lund VJ, Hopkins C, Hellings PW, Kern R, Reitsma S, Toppila-Salmi S, Bernal-Sprekelsen M, Mullol J. **Executive summary of EPOS 2020 including integrated care pathways.** *Rhinology.* 58(2):82-111. I.F.: 3.019

4. Fokkens WJ, Lund VJ, Hopkins C, Hellings PW, Kern R, Reitsma S, Toppila-Salmi S, Bernal-Sprekelsen M, Mullol J, Alobid I, Terezinha Anselmo-Lima W, Bachert C, Baroody F, von Buchwald C, Cervin A, Cohen N, Constantinidis J, De Gabory L, Desrosiers M, Diamant Z, Douglas RG, Gevaert PH, Hafner A, Harvey RJ, Joos GF, Kalogjera L, Knill A, Kocks JH, Landis BN, Limpens J, Lebeer S, Lourenco O, Meco C, Matricardi PM, O'Mahony L, Philpott CM, Ryan D, Schlosser R, Senior B, Smith TL, Teeling T, Tomazic PV, Wang DY, Wang D, Zhang L, Agius AM, Ahlstrom-Emanuelsson C, Alabri R, Albu S, Alhabash S, Aleksic A, Aloulah M, Al-Qudah M, Alsaleh S, Baban MA, Baudoin T, Balvers T, Battaglia P, Bedoya JD, Beule A, Bofares KM, Braverman I, Brozek-Madry E, Richard B, Callejas C, Carrie S, Caulley L, Chussi D, de Corso E, Coste A, El Hadi U, Elfarouk A, Eloy PH, Farrokhi S, Felisati G, Ferrari MD, Fishchuk R, Grayson W, Goncalves PM, Grdinic B, Grgic V, Hamizan AW, Heinichen JV, Husain S, Ping TI, Ivaska J, Jakimovska F, Jovancevic L, Kakande E, Kamel R, Karpischenko S, Kariyawasam HH, Kawauchi H, Kjeldsen A, Klimek L, Krzeski A, Kopacheva Barsova G, Kim SW, Lal D, Letort JJ, Lopatin A, Mahdjoubi A, Mesbahi A, Netkovski J, Nyenbue Tshipukane D, Obando-Valverde A, Okano M, Onerci M, Ong YK, Orlandi R, Otori N, Ouennoughy K, Ozkan M, Peric A, Plzak J, Prokopakis E, Prepageran N, Psaltis A, Pugin B, Raftopulos M, Rombaux P, Riechelmann H, Sahtout S, Sarafoleanu CC, Searyoh K, Rhee CS, Shi J, Shkoukani M, Shukuryan AK, Sicak M, Smyth D, Sindvongs K, Soklic Kosak T, Stjarne P, Sutikno B, Steinsvag S, Tantilipikorn P, Thanaviratananich S, Tran T, Urbancic J, Valiulius A, Vasquez de Aparicio C, Vicheva D, Virkkula PM, Vicente G, Voegels R, Wagenmann MM, Wardani RS, Welge-Lussen A, Witterick I, Wright E, Zabolotniy D, Zsolt B, Zwetsloot CP. **European Position Paper on Rhinosinusitis and Nasal Polyps 2020.** *Rhinology.* 58(suppl s29):1-464. I.F.: 3.019

5. Prokopakis E; Vardouniotis A; Bachert C; Bousquet J; Carrie S; Castelnuevo P; Constantinidis J; Fokkens W; Hopkins C; Leunig A; Molteni G; Mullol J; Scadding G; Marien G; Doulaptsi M; Hellings P. **Rhinology Future Debates 2018, a EUFOREA Report.** *Rhinology.* 58(4):384-393. I.F.: 3.019

Consortium Publications / I.F.: 4.157

1. Bousquet, J; Farrell, J; Illario, M; Onorato, G L; Bedbrook, A; Czarlewski, W; Micheli, Y; Arnavielhe, S; Ansotegui, I J; Anto, J M; Bachert, C; Basagana, X; Bedard, A; Benveniste, S; Bergmann, K C; Bewick, M; Bindslev-Jensen, C; Bjermer, L; Blain, H; Bosnic-Anticevich, S; Bosse, I; Braido, F; Brussino, L; Camuzat, T; Canonica, G W; Cardona, V; Carreiro Martins, P; Cecchi, L; Chavannes, N H; Chu, D K; Correia da Sousa, J; Costa, D J; Costa, E; Cruz, A A; da Silva, J; Devillier, P; De Feo, G; De Vries, G; Dray, G; Ebisawa, M; Erhola, M; Fauquert, J L; Fokkens, W J; Fonseca, J; Fontaine, J M; Gemicioglu, B; Haahtela, T; Heffler, E; Hellings, P W; Ivancevich, J C; Jassem, E; Jutel, M; Kaidashev, I; Kalayci, O; Klimek, L; Kowalski, M L; Kull, I; Kuna, P; Kvedariene, V; La Grutta, S; Laune, D; Larenas-Linnemann, D; Ierodiakonou, D; Le, L T T; Lourenco, O; Makris, M; Menditto, E; Monti, R; Morais-Almeida, M; Munter, L; Muraro, A; Murray, R; Maurer, M; Melen, E; Moesges, R; Mullol, J; Niedoszytko, M; O'Hehir, R E; Okamoto, Y; Papadopoulos, N G; Passalacqua, G; Patella, V; Pereira, A M; Pfaar, O; Pham-Thi, N; Portejoie, F; Price, D; Prokopakis, E P; Psarros, F; Raciborski, F; Regateiro, F; Reitsma, S; Roche, N; Rolland, C; Ryan, D; Samolinski, B; Sastre, J; Scadding, G K; Schmid-Grendelmeier, P; Schunemann, H J; Shamji, M; Sheikh, A; Stellato, C; Suppli-Ulrik, C; Somekh, D; Sova, M; Todo Bom, A; Tomazic, P, V; Toppila-Salmi, S; Triggiani, M; Tsiligianni, I; Valero, A; Valiulis, A; Valovirta, E; van Eerd, M; Vasankari, T; Ventura, M T; Wallace, D; Waserman, S; Yorgancioglu, A; Zidarn, M; Zuberbier, T;ARIA-MASK Study Grp. **Aligning the Good Practice MASK With the Objectives of the European Innovation Partnership on Active and Healthy Ageing.** *Allergy Asthma & Immunology Research.* 12(2):238-258. I.F.: 4.157

GRANTS FOR RESEARCH IN PROGRESS

Alobid I. **Heterogeneidad de la disfunción olfativa en fenotipos inflamatorios, postvíricos y neurodegenerativos: Estudio de biomarcadores genómicos específicos relacionados con el olfato.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00806
Duration: 01/01/2020-31/12/2022

Araujo G, Muñoz-Cano R. **El papel de la prueba de provocación nasal alérgeno específica con Pru p3 para el diagnóstico de alergia a alimentos por proteína de transferencia de lípidos del melocotón.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. SCAIC_17_01
Duration: 16/05/2018-

Bartra J. **Red Temática de Investigación Cooperativa en Salud - Reacciones adversas a alérgenos y fármacos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0006/0007
Duration: 01/01/2017-31/12/2021

Bartra J. **Mecanismos y predicción de reacciones adversas medicamentosas y enfermedad alérgica.**

Sponsored by: Fundación SEAIC. FSEAI-C_AYUDAS_18-01
Duration: 25/06/2018

Bartra J. **Estudio del metabolismo de los eicosanoides en la aparición de anafilaxia por alergia a alimentos en un modelo in vivo e in vitro.**
Sponsored by: Fundación Merck Salud. FSalud_20-AL-007
Duration: 26/11/2020-27/11/2022

Casas R, Muñoz-Cano R. **Análisis de la sensibilidad y reactividad de los basófilos en la alergia a alimentos inducida o no por cofactor y del efecto protector de PGE2 a través de sus receptores.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. BECA_SCAIC2019_01
Duration: 15/09/2019-14/09/2021

Enseñat J. **Minimally invasive neurosurgery for complex brain tumors. Creation of novel endoscopic anatomic models and direct clinical application.**
Sponsored by: Fundació La Marató de TV3. Cancer_19
Duration: 30/07/2020-29/07/2023

Enseñat J. **Estudio de los abordajes endoscópicos multiportales mínimamente invasivos para el tratamiento de tumores cerebrales complejos. Diseño de nuevos modelos anatómicos y traslación clínica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00592
Duration: 01/01/2020-31/12/2022

Mullol J. **Papel de los microRNA en la modulación in vitro de la diferenciación mucociliar e inflamación del epitelio nasosinusal en la poliposis nasal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00469
Duration: 01/01/2019-31/12/2021

Muñoz-Cano R. **Estudios de los mecanismos patogénicos en la anafilaxia inducida por alimentos y exacerbada por antiinflamatorios no esteroideos (AINEs).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00696
Duration: 01/01/2017-30/06/2021

Muñoz-Cano R. **Estudio del papel del metabolismo de los eicosanoides en la aparición de anafilaxia por alergia a alimentos en un modelo in vivo e in vitro.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01861
Duration: 01/01/2020-31/12/2022

Pascal M, Bartra J. **Síndrome LTP: identificación y caracterización clínica de los epítopos inmunodominantes B y T y su presentación antigénica HLA.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00344
Duration: 01/01/2017-30/06/2021

Pascal M, Bartra J. **Estratificación del riesgo de gravedad y patrón de reconocimiento en el Síndrome LTP: papel de la afinidad, clonalidad BCR/TCR y la presentación facilitada de antígeno.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00710
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Enseñat J, Alobid I. **Utilidad de la Resonancia magnética intraoperatoria de bajo campo en cirugía hipofisaria. Análisis de la introducción de una nueva tecnología en nuestro ámbito hospitalario.**
PhD student: Luis Alberto Reyes Figueroa

2.15 Translational research in post-transplant neoplasia

LOCATION
CELLEX building 2B

Original publications

TOTAL	8
IF	29,88
Mean IF	3,74
Q1	63%
D1	25%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Ignacio Revuelta (HCB-IDIBAPS)
T. 932275400 (Ext.: 4410)
irevuelt@clinic.cat

PROBLEM

A kidney transplant is the best and often, the only treatment available to terminal chronic kidney patients. Advances in medicine have made it possible to lengthen the useful life of many organs, but this is often accompanied by risks for patients. Despite being a minor problem, the rejection of an organ is the cause of most transplant deaths in the long term.

Chronic treatment with immunosuppressant drugs alters the immune system, exposing the patient to infections and tumours. To prevent this, it is necessary to have early diagnostic and therapeutic tools that are effective and with low toxicity levels.

APPROACH

There is a need to establish a distinction between and describe transplant patients from the clinical and from the molecular standpoint, due to the enormous heterogeneity of this group.

Immunological, histological (of the tissues) and biochemical monitoring is not sufficient, and we need to find new markers and new technologies.

Studying the possibilities of nanomedicine as a diagnostic and therapeutic tool could provide a response in many areas. Moreover, the addition of add big data and artificial intelligence represents a great step forward in the future of organ transplants.

IMPACT

The establishment of a clinical and molecular definition of patients in relation to their risks in terms of immunology, infection and neoplasms makes it possible to apply personalised medicine to organ transplants.

The group has experience with patients who have rejected a kidney transport and have then developed colon and skin cancer or Kaposi's sarcoma. However, apart from medication, these patients require diagnostic algorithms based on big data and artificial intelligence to attack the tumours while they remain immunodepressed. The possibility of adding nanomedicine as a biomarker and therapeutic arsenal, as demonstrated in post-transplant cancer, could lead to the use of new therapeutic strategies in these patients.

RESEARCH LINES

- Artificial intelligent and big data in nephrology and kidney transplant world.

- Immune exosomes and antibody mediated rejection and graft loss.

- Incidence, behaviour, risk factors, and therapeutic approach of cancer in kidney transplant patients.

- Molecular characterization of posttransplant malignancies.

- Role of cancer exosomes in tumor progression and metastasis in posttransplant malignancies under different immunousppressive therapy.

PUBLICATIONS

Originals / I.F.: 29.88

1. Jarque M, Crespo E, Melilli E, Gutiérrez A, Moreso F, Guirado L, Revuelta I, Montero N, Torras J, Riera L, Meneghini M, Taco O, Manonelles A, Paul J, Seron D, Facundo C, Cruzado JM, Gil Vernet S, Grinyó JM, Bestard O. **Cellular Immunity to Predict the Risk of Cytomegalovirus Infection in Kidney Transplantation: A Prospective, Interventional, Multicenter Clinical Trial.** *Clinical Infectious Diseases.* 71(9):2375-2385. I.F.: 8.313

2. Cucchiari D, Molina-Andujar A, Montagud-Marrahi E, Revuelta I, Rovira J, Ventura-Aguiar P, Piñeiro GJ, De Sousa-Amorim E, Esforzado N, Cofán F, Torregrosa JV, Ugalde-Altamirano J, Ricart MJ, Centellas-Pérez FJ, Solè M, Martorell J, Ríos J, Campistol JM, Diekmann F, Oppenheimer F. **Use of De Novo mTOR Inhibitors in Hypersensitized Kidney Transplant Recipients: Experience From Clinical Practice.** *Transplantation.* 104(8):1686-1694. I.F.: 4.546

3. Menjivar A; Torres X; Manyalich M; Fehrman-Ekholm I; Papachristou C; de Sousa-Amorim E; Paredes D; Hiesse C; Yucetin L; Oppenheimer F; Kondi E; Peri JM; Kvarnström N; Ballesté C; Dias L; Frade IC; Lopes A; Diekmann F; Revuelta I. **Psychosocial risk factors for impaired health-related quality of life in living kidney donors: results from the ELIPSY prospective study.** *Scientific Reports (Nature Publisher Group).* 10(1):21343. I.F.: 3.998

4. Cucchiari D; Ríos J; Molina-Andujar A; Montagud-Marrahi E; Revuelta I; Ventura-Aguiar P; Piñeiro GJ; De Sousa-Amorim E; Esforzado N; Cofán F; Torregrosa JV; Ugalde-Altamirano J; Ricart MJ; Rovira J; Torres F; Solè M; Campistol JM; Diekmann F; Oppenheimer F. **Combination of calcineurin and mTOR inhibitors in kidney transplantation: a propensity score analysis based on current clinical practice.** *Journal of Nephrology.* 33(3):601-610. I.F.: 3.484

5. Carreras-Planella L; Cucchiari D; CaÃ±as L; Juega J; Franquesa M; Bonet J; Revuelta I; Diekmann F; Taco O; Lauzurica R; BorrÃ s FE. **Urinary vitronectin identifies patients with high levels of fibrosis in kidney grafts.** *Journal of Nephrology.* I.F.: 3.484

6. Musquera, Mireia; Peri, Lluis; Ajami, Tarek; Revuelta, Ignacio; Izquierdo, Laura; Mercader, Claudia; Sierra, Alba; Diekmann, Fritz; D'Anna, Maurizio; Monsalve, Concepcion; Alcaraz, Antonio. **Results and Lessons Learned on Robotic Assisted Kidney Transplantation.** *Biomed Research International.* 2020(8687907). I.F.: 2.276

7. Santos Arteaga FJ; Di Caprio D; Cucchiari D; Campistol JM; Oppenheimer F; Diekmann F; Revuelta I. **Modeling patients as decision making units: evaluating the efficiency of kidney transplantation through data envelopment analysis.** *Health Care Management Science.* I.F.: 2.150

8. Montagud-Marrahi E; Revuelta I; Cucchiari D; Piñeiro GJ; Ventura-Aguiar P; Lozano M; Cid J; Martorell J; Solé M; Quintana LF; Oppenheimer F; Diekmann F; Poch E; Campistol JM; Blasco M. **Successful use of nonantigen-specific immunoadsorption with antihuman Ig-columns in kidney graft antibody-mediated rejection.** *Journal Of Clinical Apheresis.* 35(3):188-199. I.F.: 1.629

Letters / I.F.: 7.338

1. Montagud-Marrahi E, Cofan F, Torregrosa JV, Cucchiari D, Ventura-Aguiar P, Revuelta I, Bodro M, Piñeiro GJ, Esforzado N, Ugalde J, Guillén E, Rodríguez-Espinosa D, Campistol JM, Oppenheimer F, Moreno A, Diekmann F. **Preliminary data on outcomes of SARS-CoV-2 infection in a Spanish single centre cohort of kidney recipients.** *American Journal of Transplantation.* 20(10):2958-2959. I.F.: 7.338

Case Reports / I.F.: 7.338

1. Guillen E; Pineiro GJ; Revuelta I; Rodriguez D; Bodro M; Moreno A; Campistol JM; Diekmann F; Ventura-Aguiar P. **Case report of COVID-19 in a kidney transplant recipient: Does immunosuppression alter the clinical presentation?** *American Journal of Transplantation.* 20(7):1875-1878. I.F.: 7.338

GRANTS FOR RESEARCH IN PROGRESS

Revuelta I. **Papel de los exosomas de células inmunes de memoria (InmEx) en la activación del endotelio y desarrollo precoz del rechazo mediado por anticuerpos en el trasplante renal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00115
Duration: 01/01/2017-30/06/2021

Revuelta I. **Exosomas como nuevo mecanismo de rechazo mediado por anticuerpos en receptores de trasplante renal de alto riesgo inmunológico caracterizados con tecnología de Big Data e Inteligencia Artificial.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00797
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Revuelta I, Diekmann F. **Expanding the use of mTOR inhibitors to high-risk kidney transplant recipients.**
PhD student: David Cucchiari

2.16 Atherosclerosis, coronary disease and heart failure

LOCATION
CELLEX building, floor 2A

KEYWORDS
1. **Acute myocardial infarction**
2. **Percutaneous coronary intervention.**
3. **Stent**
4. **Biodegradable device**
5. **Therapeutic hypothermia**
6. **Stem cell therapy**
7. **Heart failure**
8. **Structural heart disease**

RELATED DISEASES
1. **Coronary artery disease**
2. **Structural heart disease**
3. **Acute coronary syndrome**
4. **Congestive heart failure**
5. **Pulmonary hypertension**

GROUP INVOLVED IN
AGAUR_SGR17: 01525

Original publications

TOTAL	68
IF	331,79
Mean IF	4,88
Q1	49%
D1	15%
MA	18%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Manel Sabaté (HCB)
T. 93 227 55 19 / 93 227 30 41
masabate@clinic.cat

RESEARCHERS
Rut Andrea (HCB)
Xavier Bosch (HCB)
Salvatore Brugaletta (HCB)
Carles Falces (HCB)
Marta Farrero (HCB)
Xavier Freixa (HCB)
Ana García Álvarez (HCB)
Mònica Masotti (HCB)
Felix Pérez Villa (HCB)
Josep Lluis Pomar (HCB)
Montserrat Rigol (FCRB)
Mercè Roqué (HCB)
Ana Paula Villela (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Luis Ortega Paz (HCB)

PRE-DOCTORAL RESEARCHERS
Victor Andrés Arévalos (FCRB)
Marta Arrieta (FCRB)
Joaquim Bobi (FCRB)
Pedro Luis Cepas (HCB)
Oriol de Diego (HCB)
Eduardo Josue Flores (HCB)
Francisco Rafael Jiménez Trinidad (FCRB)
Teresa López Sobrino (HCB)
Lina Guiomar Mendieta (HCB)
Pedro Ramón Pérez Fuentes (FCRB)
Juan José Rodríguez Arias (HCB)

NURSING STAFF
Anna Barrabés (FCRB)
Elisabet Codina (FCRB)
Elisabet de Mingo (FCRB)
Inés Escrivá (FCRB)

ADMINISTRATIVE STAFF
Anna Maria Campos (FCRB)
Eva Maria Trellisó (FCRB)

COLLABORATORS
Susanna Prat (HCB)
Ander Regueiro (HCB)
Núria Solanes (FCRB)

PROBLEM

Cardiovascular diseases are the most frequent cause of death in the western world, causing more than 4 million deaths every year in Europe, and 45% of all deaths in Catalonia, being the leading cause of death in women and the second in men.

Population ageing causes these diseases to appear increasingly in more complex patients. In addition, today's lifestyles do not favour prevention. Research in this context must be at all levels: diagnosis, prevention, regenerative and therapeutic.

APPROACH

The group's vocation is to conduct research on the diagnosis and mechanisms that cause diseases of the heart's arteries using sophisticated imaging techniques and experimental models.

Another important aspect of its research is the evaluation of advanced therapies (with stem cells) and of new devices for the treatment of the most prevalent cardiovascular diseases (myocardial infarction, valvopathies, pulmonary hypertension, congenital illnesses).

The group does research with translational, multidisciplinary, collaborative vocation between different centres and groups and Pan-European countries.

IMPACT

IIn basic research, the group identifies mechanisms for the regulation of stem cell therapy for the regeneration and improvement of blood circulation to the heart muscle.

In addition, it studies the mechanisms of cellular ageing and inflammatory response after an infarct or a therapeutic procedure.

From a clinical point of view, it evaluates new devices (such as biodegradable stents or percutaneous valves) using different imaging

and vascular physiology techniques, as well as new strategies for the treatment of myocardial infarction, cardiogenic shock, heart failure and pulmonary hypertension. The results of these studies have been published in high-impact clinical journals and are part of European clinical practice guidelines.

RESEARCH LINES

- To design experimental and clinical studies to evaluate the performance of novel devices and strategies to treat coronary artery disease, including chronic and acute coronary syndromes, cardiogenic shock and cardiac arrest.

- To determine the safety, efficacy and efficiency of new transcatheter and minimally invasive devices to treat structural and congenital heart disease and the role of imaging techniques.

- To evaluate neurohormonal activation, fibrotic process, genetic and environmental factors associated with ventricular remodeling in dilated cardiomyopathy.

- To evaluate new pharmacological and invasive treatments for pulmonary hypertension.

- To evaluate the influence of hormonal factors, gender and aging in ischemic heart disease.

- To perform experimental models of neointimal hyperplasia, endothelialization, vascular inflammation and thrombosis.

- To study the regulatory mechanisms and efficacy of stem cell therapy in experimental models and in clinical contexts.

PUBLICATIONS

Originals / I.F.: 331.793

1. Mendieta, Guiomar; Ben-Aicha, Soumaya; Gutierrez, Manuel; Casani, Laura; Arzanauskait, Monika; Carreras, Francesc; Sabate, Manel; Badimon, Lina; Vilahur, Gemma. **Intravenous Statin Administration During Myocardial Infarction Compared With Oral Post-Infarct Administration.** *Journal of the American College of Cardiology.* 75(12):1386-1402. I.F.: 20.589

2. Gregson, John; Stone, Gregg W; Ben-Yehuda, Ori; Redfors, Bjorn; Kandzari, David E; Morice, Marie-Claude; Leon, Martin B; Kosmidou, Ioanna; Lembo, Nicholas J; Brown, W Morris, III; Karmpaliotis, Dimitri; Banning, Adrian P; Pomar, Jose; Sabate, Manel; Simonton, Charles A; Dressler, Ovidiu; Kappetein, Arie Pieter; Sabik, Joseph F, III; Serruys, Patrick W; Pocock, Stuart J. **Implications of Alternative Definitions of Peri-Procedural Myocardial Infarction After Coronary Revascularization.** *Journal of the American College of Cardiology.* 76(14):1609-1621. I.F.: 20.589

3. Armijo G; Estevez-Loureiro R; Carrasco-Chinchilla F; Arzamendi D; Fernández-Vázquez F; Jimenez-Quevedo P; Freixa X; Pascual I; Serrador AM; Mesa D; Alonso-Briales JH; Goicolea J; Hernández-Antolin R; Fernández-Peregrina E; Cid Alvarez AB; Andraka L; Cruz-Gonzalez I; Berenguer A; Sanchis J; Diez Gil JL; Hernández-García JM; Li CH; Benito-González T; de Agustin JA; Avanzas P; Regueiro A; Amat-Santos I; Pan M; Nombela-Franco L. **Acute Kidney Injury After Percutaneous Edge-to-Edge Mitral Repair.** *Journal of the American College of Cardiology.* 76(21):2463-2473. I.F.: 20.589

4. Martinez-Milla, Juan; Galan-Arriola, Carlos; Carnero, Manuel; Cobiella, Javier; Perez-Camargo, Daniel; Bautista-Hernandez, Victor; Rigol, Montserrat; Solanes, Nuria; Villena-Gutierrez, Rocio; Lobo, Manuel; Mateo, Jesus; Paul Vilchez-Tschischke, Jean; Salinas, Beatriz; Cusso, Lorena; Javier Lopez, Gonzalo; Fuster, Valentin; Desco, Manuel; Sanchez-Gonzalez, Javier; Ibanez, Borja. **Translational large animal model of hibernating myocardium: characterization by serial multimodal imaging.** *Basic Research in Cardiology.* 115(3):33. I.F.: 11.981

5. Mendieta G; Ben-Aicha S; Casani L; Badimon L; Sabate M; Vilahur G. **Molecular pathways involved in the cardioprotective effects of intravenous statin administration during ischemia.** *Basic Research in Cardiology.* 115(1):2. I.F.: 11.981

6. Muntané-Carol G; Urena M; Munoz-Garcia A; Padrón R; Gutiérrez E; Regueiro A; Serra V; Capretti G; Himbert D; Moris C; Sabaté M; Garcia del Blanco B; Ferreira-Neto AN; Coté M; Fischer Q; Couture T; Kalavrouziotis D; Rodés-Cabau J. **Late Cerebrovascular Events Following Transcatheter Aortic Valve Replacement.** *Jacc-Cardiovascular Interventions.* 13(7):872-881. I.F.: 8.432

7. Otaegui I; Pérez de Prado A; Massotti M; López-Benito M; Sabaté M; Martí G; Bellera N; Serra B; García del Blanco B; Ferreira González I. **Intrapatient Randomization to Study Strut Coverage in Polymer-Free Versus Biodegradable-Polymer Sirolimus-Eluting Stent Implantations.** *Jacc-Cardiovascular Interventions.* 13(7):899-900. I.F.: 8.432

8. Cortes-Serra N; Mendes MT; Mazagatos C; Segui-Barber J; Ellis CC; Ballart C; Garcia-Alvarez A; Gállego M; Gascon J; Almeida IC; Pinazo MJ; Fernandez-Becerra C. **Plasma-derived extracellular vesicles as potential biomarkers in heart transplant patient with chronic chagas disease.** *Emerging Infectious Diseases.* 26(8):1846-1851. I.F.: 6.259

9. Domenech-Ximenos B, Garza MS, Prat-González S, Sepúlveda-Martínez Á, Crispi F, Perea RJ, Garcia-Alvarez A, Sitges M. **Exercise-induced cardio-pulmonary remodelling in endurance athletes: Not only the heart adapts.** *European Journal of Preventive Cardiology.* 27(6):651-659. I.F.: 5.864

10. Jiménez-Xarrié E, Pérez B, Dantas AP, Puertas-Umbert L, Martí-Fabregas J, Chamorro Á, Planas AM, Vila E, Jiménez-Altayó F. **Uric Acid Treatment After Stroke Prevents Long-Term Middle Cerebral Artery Remodelling and Attenuates Brain Damage in Spontaneously Hypertensive Rats.** *Translational Stroke Research.* 11(6):1332-1347. I.F.: 5.780

11. Campuzano O; Sarquella-Brugada G; Fernandez-Falgueras A; Coll M; Iglesias A; Ferrer-Costa C; Cesar S; Arbelo E; García-Álvarez A; Jordà P; Toro R; Tiron de Llano C; Grassi S; Oliva A; Brugada J; Brugada R. **Reanalysis and reclassification of rare genetic variants associated with inherited arrhythmogenic syndromes.** *Ebiomedicine.* 54:102732. I.F.: 5.736

12. Faroux, Laurent; Munoz-Garcia, Erika; Serra, Vicenc; Alperi, Alberto; Nombela-Franco, Luis; Fischer, Quentin; Veiga, Gabriela; Donaint, Pierre; Asmarats, Lluis; Vilalta, Victoria; Chamandi, Chekrallah; Regueiro, Ander; Gutierrez, Enrique; Munoz-Garcia, Antonio; Garcia del Blanco, Bruno; Bach-Oller, Montserrat; Moris, Cesar; Armijo, German; Urena, Marina; Fradejas-Sastre, Victor; Metz, Damien; Castillo, Pablo; Fernandez-Nofrerias,

Eduard; Sabate, Manel; Tamargo, Maria; del Val, David; Couture, Thomas; Rodes-Cabau, Josep. **Acute Coronary Syndrome Following Transcatheter Aortic Valve Replacement.** *Circulation-Cardiovascular Interventions.* 13(2):e008620. I.F.: 5.493

13. Junquera, Lucia; Urena, Marina; Latib, Azeem; Munoz-Garcia, Anton; Nombela-Franco, Luis; Faurie, Benjamin; Veiga-Fernandez, Gabriela; Alperi, Alberto; Serra, Vicenc; Regueiro, Ander; Fischer, Quentin; Himbert, Dominique; Mangieri, Antonio; Colombo, Antonio; Munoz-Garcia, Erika; Vera-Urquiza, Rafael; Jimenez-Quevedo, Pilar; Maria de la Torre, Jose; Pascual, Isaac; Garcia del Blanco, Bruno; Sabate, Manel; Mohammadi, Siamak; Freitas-Ferraz, Afonso B; Guimaraes, Leonardo; Couture, Thomas; Cote, Melanie; Rodes-Cabau, Josep. **Comparison of Transfemoral Versus Transradial Secondary Access in Transcatheter Aortic Valve Replacement.** *Circulation-Cardiovascular Interventions.* 13(3):e008609. I.F.: 5.493

14. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combinations are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis.** *Journal of Antimicrobial Chemotherapy.* 75(12):3586-3592. I.F.: 5.439

15. Bobi J, Garabito M, Solanes N, Cidad P, Ramos-Pérez V, Ponce A, Rigol M, Freixa X, Pérez-Martínez C, Pérez de Prado A, Fernández-Vázquez F, Sabaté M, Borrós S, López-López JR, Pérez-García MT, Roqué M. **Kv1.3 blockade inhibits proliferation of vascular smooth muscle cells in vitro and intimal hyperplasia in vivo.** *Translational Research.* 224:40-54. I.F.: 5.411

16. Pericàs JM; Cervera C; Garcia-de-la-Mària C; Sharma-Kuinkel BK; Gonzales R; Moreno A; Almela M; Falces C; Quintana E; Fuster D; Marco F; Bayer AS; Fowler VG; Miró JM. **Relationship between Vancomycin MIC and Virulence Gene Expression in Clonal Complexes of Methicillin-Susceptible Staphylococcus aureus Strains Isolated from Left-Sided Endocarditis.** *Antimicrobial Agents And Chemotherapy.* 64(3):e01579-19. I.F.: 4.904

17. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities**. *Annals of The American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

18. Vilardell P; Brugada J; Aboal J; Loma-Osorio P; Falces C; Andrea R; Figueras-Coll M; Brugada R. **Characterization of Electrocardiographic Findings in Young Students**. *Revista Española de Cardiología.* 73(2):139-144. I.F.: 4.642

19. Sanchis L, Freixa X, Regueiro A, Perdomo JM, Sabaté M, Sitges M . Safety and outcomes of MitraClip implantation in functional mitral regurgitation according to degree of left ventricular dysfunction. Revista Española De Cardiología.. 73(7):530-535. I.F.: 4.642

20. Pascual I, Arzamendi D, Carrasco-Chinchilla F, Fernández-Vázquez F, Freixa X, Nombela-Franco L, Avanzas P, Serrador Frutos AM, Pan M, Cid Álvarez AB, Hernández-Antolín RA, Andraka Ikazuriaga L, Cruz-González I, Díez Gil JL, Alcasena Juango MS, Berenguer Jofresa A, Alonso-Briales JH, Li CH, Benito González T, Regueiro A, Armijo G, León V, Amat-Santos IJ, Romero M, Trillo Nouche R, Fernández-Golfín C, Ruiz Gómez L, Campos-Arjona R, Millán X, Garrote Coloma C, Sanchis L, Jiménez-Quevedo P, Morís C, Hernández-García JM, Serra A, Pérez de Prado A, Estévez-Loureiro R . **Transcatheter mitral repair according to the cause of mitral regurgitation: real-life data from the Spanish MitraClip registry.** *Revista Española de Cardiología.* 73(8):643-651. I.F.: 4.642

21. Cruz-González I, González-Ferreiro R, Freixa X, Gafoor S, Shakir S, Omran H, Berti S, Santoro G, Kefer J, Landmesser U, Nielsen-Kudsk JE, Kanagaratnam P, Nietlispach F, Gloekler S, Aminian A, Danna P, Rezzaghi M, Stock F, Stolcova M, Paiva L, Costa M, Millán X, Ibrahim R, Tichelbäcker T, Schillinger W, Park JW, Sievert H, Meier B, Tzikas A. **Left atrial appendage occlusion for stroke despite oral anticoagulation (resistant stroke). Results from the Amplatzer Cardiac Plug registry.** *Revista Española de Cardiología.* 73(1):28-34. I.F.: 4.642

22. Lorca R, Jiménez-Blanco M, García-Ruiz JM, Pizarro G, Fernández-Jiménez R, García-Álvarez A, Fernández-Friera L, Lobo-González M, Fuster V, Rossello X, Ibáñez B. **Coexistence of transmural and lateral wavefront progression of myocardial infarction in the human heart.** *Revista Española de Cardiología.* 8(5):1045-1053. I.F.: 4.642

23. González-Vilchez F, Almenar-Bonet L, Crespo-Leiro MG, Gómez-Bueno M, González-Costello J, Pérez-Villa F, Delgado-Jiménez J, Arizón Del Prado JM, Sobrino-Márquez JM, Sousa Casasnovas I,, Segovia-Cubero J, Hernández-Pérez F, Martínez Penades S, Cebrián Pinar M, López Vilella R, Sánchez-Lázaro I, Martínez-Dolz L, Paniagua-Martín MJ, Barge-Caballero E, Barge-Caballero G, Couto-Mallón D, López Granados A, Segura Saintgerons C, Menjíbar Pareja V, Carrasco Ávalos F, Cobo M, Llano-Cardenal M, Vázquez de Prada JA, Nistal Herrera F, Blázquez Z, Jesús Valero M, Ortiz C, Zataraín E, Villa A, Navas P, Martínez-Sellés M, Dolores García Cosío M, Morán Fernández L, Caravaca P, Brossa Loidi V, Roig Minguell E, Mirabet Pérez S, López López L, Zegrí I, Rangel Sousa D, Manito Lorite N, Díez Lopez C, Roca Elias J, García Romero E, Rábago Juan-Aracil G, Castel MÁ, Farrero M, Lambert Rodríguez JL, Díaz Molina B, Bernardo Rodríguez MJ, Fidalgo Muñiz C, Camino López M, Gil Jaurena JM, Gil Villanueva N, Garrido-Bravo I, Pascual Figal DA, Pastor Pérez FJ, Blasco-Peiró T, Portoles Ocampo A, Sanz Julve M, de la Fuente Galán L, Tobar Ruiz J, Recio Platero A, García-Guereta Silva L, González Rocafort Á, Labradero de Lera C, Polo López L, Gran Ipiña F, Albert Brotons DC, Abella Antón R, García Quintana A, Groba Marco MDV Spanish Heart Transplant Teams, Collaborators in the Spanish Heart Transplant Registry, 1984-2019. Spanish Heart Transplant Registry. **31th Official Report of the Heart Failure Association of the Spanish Society of Cardiology.** *Revista Española de Cardiología.* S1885-5857(20):30374-1. I.F.: 4.642

24. Di Marco A, Rodriguez M, Cinca J, Bayes-Genis A, Ortiz-Perez JT, Ariza-Solé A, Sanchez-Salado JC, Sionis A, Rodriguez J, Toledano B, Codina P, Solé-González E,

Masotti M, Gómez-Hospital JA, Cequier Á, Anguera I. **New Electrocardiographic Algorithm for the Diagnosis of Acute Myocardial Infarction in Patients With Left Bundle Branch Block.** *Journal of the American Heart Association.* 9(14):e015573. I.F.: 4.605

25. Bobi J, Solanes N, Dantas AP, Ishida K, Regueiro A, Castillo N, Sabaté M, Rigol M, Freixa X. **Moderate Hypothermia Modifies Coronary Hemodynamics and Endothelium-Dependent Vasodilation in a Porcine Model of Temperature Management.** *Journal of the American Heart Association.* 9(3):e014035. I.F.: 4.605

26. Núñez J; Llàcer P; García-Blas S; Bonanad C; Ventura S; Núñez JM; Sánchez R; Fácila L; de la Espriella R; Vaquer JM; Cordero A; Roqué M; Chamorro C; Bodi V; Valero E; Santas E; Moreno MdC; Miñana G; Carratalá A; Rodríguez E; Mollar A; Palau P; Bosch MJ; Bertomeu-González V; Lupón J; Navarro J; Chorro FJ; Górriz JL; Sanchis J; Voors AA; Bayés-Genís A. **CA125-Guided Diuretic Treatment Versus Usual Care in Patients With Acute Heart Failure and Renal Dysfunction.** *American Journal of Medicine.* 133(3):370-380.e4. I.F.: 4.529

27. Romaguera R, Salinas P, Brugaletta S, Gomez-Lara J, Díaz JF, Romero MA, García-Blas S, Ocaranza R, Borde P, Jiménez Kockar M, Millan Segovia R, Íñiguez A, Alameda M, Trillo R, Lee DH, Martín P, López-Benito M, Frutos A, Moreu J, Hernández-Hernández F, García Del Blanco B, Roura G, Rossello X, Pocock SJ, Fernández-Ortiz A, Sabate M, Gómez-Hospital JA. **Second-Generation Drug-Eluting Stents in Diabetes (SUGAR) trial: Rationale and study design.** *American Heart Journal.* 222:174-182. I.F.: 4.153

28. Den Dekker WK; Van Mieghem NM; Bennett J; Sabate M; Esposito G; van Bommel RJ; Daemen J; Vrolix M; Cummins PA; Lenzen MJ; Boersma E; Zijlstra F; Diletti R. **Percutaneous complete revascularization strategies using sirolimus-eluting biodegradable polymer-coated stents in patients presenting with acute coronary syndrome and multivessel disease: Rationale and design of the BIOVASC trial.** *American Heart Journal.* 227:111-117. I.F.: 4.153

29. G Toth G; Lansky A; Baumbach A; Kelbæk H; van Royen N; Holmvang L; Janssens L; Brugaletta S; Barbato E; Maillard L; Kiemeneij F; Naber CK; Pucher F; Laursen PN; Ameloot K; Robles C; Milkas A; Sevilla J; Jensen C; Wijns W. **Validation of the all-comers design: Results of the TARGET-AC substudy.** *American Heart Journal.* 221:148-154. I.F.: 4.153

30. Linhart M, Doltra A, Acosta J, Borràs R, Jáuregui B, Fernández-Armenta J, Anguera I, Bisbal F, Martí-Almor J, Tolosana JM, Penela D, Soto-Iglesias D, Villuendas R, Perea RJ, Ortiz JT, Bosch X, Auricchio A, Mont L, Berruezo A. **Ventricular arrhythmia risk is associated with myocardial scar but not with response to cardiac resynchronization therapy**. *Europace.* 22(9):1391-1400. I.F.: 4.045

31. Jiménez-Altayó F; Ortiz-Romero P; Puertas-Umbert L; Dantas AP; Pérez B; Vila E; D'Ocon P; Campuzano V. **Stenosis coexists with compromised α1-adrenergic contractions in the ascending aorta of a mouse model of Williams-Beuren syndrome.** *Scientific Reports (Nature Publisher Group).* 10(1):889. I.F.: 3.998

32. Mompeón A, Ortega-Paz L, Vidal-Gómez X, Costa TJ, Pérez-Cremades D, Garcia-Blas S, Brugaletta S, Sanchis J, Sabate M, Novella S, Dantas AP, Hermenegildo C. **Disparate miRNA expression in serum and plasma of patients with acute myocardial infarction: a systematic and paired comparative analysis.** *Scientific Reports (Nature Publisher Group).* 10(1):5373. I.F.: 3.998

33. Cassese, Salvatore; Katagiri, Yuki; Byrne, Robert A; Brugaletta, Salvatore; Alfonso, Fernando; Raber, Lorenz; Maeng, Michael; Iniguez, Andres; Kretov, Evgeny; Onuma, Yoshinobu; Joner, Michael; Sabate, Manel; Laugwitz, Karl-Ludwig; Windecker, Stephan; Kastrati, Adnan; Serruys, Patrick W. **Angiographic and clinical outcomes of STEMI patients treated with bioresorbable or metallic everolimus-eluting stents: a pooled analysis of individual patient data.** *Eurointervention.* 15(16):1451-1457. I.F.: 3.993

34. Chang, Chun Chin; Kogame, Norihiro; Asano, Taku; von Birgelen, Clemens; Sabate, Manel; Onuma, Yoshinobu; Serruys, Patrick W. **BuMA Supreme biodegradable polymer sirolimus-eluting stent versus a durable polymer zotarolimus-eluting coronary stent: three-year clinical outcomes of the PIONEER trial.** *Eurointervention.* 16(11):e900-e903. I.F.: 3.993

35. Gomez-Lara J, Ortega-Paz L, Brugaletta S, Cuesta J, Romaní S, Serra A, Salinas P, García Del Blanco B, Goicolea J, Hernandez-Antolín R, Antuña P, Romaguera R, Regueiro A, Rivero F, Cequier À, Alfonso F, Gómez-Hospital JA, Sabaté M, Collaborators. **Bioresorbable scaffolds versus permanent sirolimus-eluting stents in patients with ST-Segment Elevation Myocardial Infarction: vascular healing outcomes from the MAGSTEMI trial.** *Eurointervention.* 16(11):e913-e921. I.F.: 3.993

36. Brugaletta, Salvatore; Gori, Tommaso; Tousek, Petr; Gomez-Lara, Josep; Pinar, Eduardo; Ortega-Paz, Luis; Schulz, Eberhard; Kocka, Viktor; Muenzel, Thomas; Cequier, Angel; Buono, Andrea; Serruys, Patrick W; Sabate, Manel; BVS-Examination Investigators. **Bioresorbable vascular scaffolds versus everolimus-eluting metallic stents in patients with ST-segment elevation myocardial infarction: 5-year results of the BVS-EXAMINATION study.** *Eurointervention.* 15(16):1436-1443. I.F.: 3.993

37. Kandzari DE; Gershlick AH; Serruys PW; Leon MB; Morice MC; Simonton CA; Lembo NJ; Mansour S; Sabaté M; Sabik JF; Kappetein AP; Dressler O; Stone GW. **Procedural Characteristics and Clinical Outcomes in Patients Undergoing Percutaneous Coronary Intervention for Left Main Trifurcation Disease: The EXCEL trial.** *Eurointervention.* 16(12):E982-e988. I.F.: 3.993

38. Tomaniak, Mariusz; Chichareon, Ply; Modolo, Rodrigo; Takahashi, Kuniaki; Chang, Chun Ching; Kogame, Norihiro; Spitzer, Ernest; Buszman, Pawel E; van Geuns, Robert-Jan; Valkov, Veselin; Steinwender, Clemens; Geisler, Tobias; Prokopczuk, Janusz; Sabate, Manel; Zmudka, Krzysztof; Rademaker-Havinga, Tessa; Tijssen, Jan G P; Juni, Peter; Hamm, Christian; Steg, P Gabriel; Onuma, Yoshinobu; Vranckx, Pascal; Valgimigli, Marco; Windecker, Stephan; Baber, Usman; Anderson, Richard; Dominici, Marcello; Serruys, Patrick W; GLOBAL LEADERS Investigators. **Ticagrelor monotherapy beyond one month after PCI in ACS or stable CAD in elderly patients: a pre-specified analysis of the GLOBAL LEADERS trial.** *Eurointervention.* 15(18):e1605-e1614. I.F.: 3.993

39. Onuma, Yoshinobu; Chevalier, Bernard; Ono, Masafumi; Cequier, Angel; Dudek, Dariusz; Haude, Michael; Carrie, Didier; Sabate, Manel; Windecker, Stephan; Rapoza,

Richard; West, Nick E. J.; Reith, Sebastian; Almeida, Manuel de Sousa; Campo, Gianluca; Iniguez, Andres; Serruys, Patrick W. **Bioresorbable scaffolds versus everolimus-eluting metallic stents: five-year clinical outcomes of the randomised ABSORB II trial.** *Eurointervention.* 16(11):e938-e941. I.F.: 3.993

40. Gomez-Lara J, Salvatella N, Romaguera R, Brugaletta S, Ñato M, Roura G, Ferreiro JL, Teruel L, Gracida M, Sabate M, Vaquerizo B, Cequier À, Gomez-Hospital JA, Collaborators. **Coronary vasomotor function and myocardial flow with bioresorbable vascular scaffolds or everolimus-eluting metallic stents: a randomised trial.** *Eurointervention.* 16(2):e155-e163. I.F.: 3.993

41. Hara, Hironori; Gao, Chao; Kogame, Norihiro; Ono, Masafumi; Kawashima, Hideyuki; Wang, Rutao; Morel, Marie-Angele; O'Leary, Neil; Sharif, Faisal; Mollmann, Helge; Reiber, Johan H. C.; Sabate, Manel; Zaman, Azfar; Wijns, William; Onuma, Yoshinobu; Serruys, Patrick W.;Multivessel TALENT Trial Investiga. **A randomised controlled trial of the sirolimus-eluting biodegradable polymer ultra-thin Supraflex stent versus the everolimus-eluting biodegradable polymer SYNERGY stent for three-vessel coronary artery disease: rationale and design of the Multivessel TALENT trial.** *Eurointervention.* 16(12):E997-e1004. I.F.: 3.993

42. Estevez-Loureiro R, Adamo M, Arzamendi D, Denti P, Freixa X, Nombela-Franco L, Pascual I, Melica B, Attias D, Serrador A, Benito-González T, Iñiguez A, Fernández-Vázquez F. **Transcatheter mitral valve repair in patients with acute myocardial infarction: insights from the European Registry of MitraClip in Acute Mitral Regurgitation following an acute myocardial infarction (EREMMI).** *EuroIntervention.* 15(14):1248-1250. I.F.: 3.993

43. Tenekecioglu E, Katagiri Y, Takahashi K, Tomaniak M, Dudek D, Cequier A, Carrié D, Iñiguez A, Johannes van der Schaaf R, Dominici M, Boven AJV, Helqvist S, Sabaté M, Baumbach A, Piek JJ, Wykrzykowska JJ, Kitslaar P, Dijkstra J, Reiber JHC, Chevalier B, Ural D, Pekkan K, Bourantas CV, Gijsen F, Onuma Y, Torii R, Serruys PW. **Endothelial shear stress and vascular remodeling in bioresorbable scaffold and metallic stent.** *Atherosclerosis.* 312:79-89. I.F.: 3.919

44. Viana-Tejedor A, Ariza-Solé A, Martínez-Sellés M, Mena MJ, Vila M, García C, García Acuña JM, Bañeras J, García Rubira JC, Pérez PJ, Querol CT, Pastor G, Andrea R, Osorio PL, Alonso N, Martínez C, Pérez Rodríguez M, Noriega FJ, Ferrera C, Salinas P, Gil IN, Ortiz AF, Macaya C. **Role of coronary angiography in patients with a non-diagnostic electrocardiogram following out of hospital cardiac arrest: Rationale and design of the multicentre randomized controlled COUPE trial.** *European Heart Journal-Acute Cardiovascular Care.* 9(4_suppl):S131-S137. I.F.: 3.813

45. Díez-Villanueva P, García-Guimaraes M, Sanz-Ruiz R, Roura G, Macaya F, Barahona Alvarado JC, Tizón-Marcos H, Flores-Ríos X, Masotti M, Lezcano-Pertejo C, Cortés C, Fuertes-Ferre G, Becerra-Muñoz VM, Lozano Ruiz-Poveda F, Valero E, Portero-Portaz JJ, Vera A, Salamanca J, Alfonso F. **Spontaneous coronary artery dissection in old patients: clinical features, angiographic findings, management and outcome.** *European Heart Journal-Acute Cardiovascular Care.* I.F.: 3.813

46. Horke A, Tudorache I, Laufer G, Andreas M, Pomar JL, Pereda D, Quintana E, Sitges M, Meyns B, Rega F, Hazekamp M, Hübler M, Schmiady M, Pepper J, Rosendahl U, Lichtenberg A, Akhyari P, Jashari R, Boethig D, Bobylev D, Avsar M, Cebotari S, Haverich A, Sarikouch S. **Early results from a prospective, single-arm European trial on decellularized allografts for aortic valve replacement: the ARISE study and ARISE Registry data.** *European Journal of Cardio-Thoracic Surgery.* 58(5):1045-1053 I.F.: 3.486

47. Bosch X; Jáuregui B; Villamor N; Morales-Ruiz M; Ortiz-Pérez J; Borràs R; Penela D; Soto-Iglesias D; Perea R; Doltra A; Prat-González S; Jiménez W; Mira Á; Lasalvia L; Berruezo A. **Monocyte Subsets Are Differently Associated with Infarct Size, Left Ventricular Function, and the Formation of a Potentially Arrhythmogenic Scar in Patients with Acute Myocardial Infarction.** *Journal Of Cardiovascular Translational Research.* 13(5):722-730. I.F.: 3.312

48. Pascual, Isaac; Carrasco-Chinchilla, Fernando; Benito-Gonzalez, Tomas; Li, Chi Hion; Avanzas, Pablo; Nombela-Franco, Luis; Pan, Manuel; Frutos, Ana Serrador; Freixa, Xavier; Trillo-Nouche, Ramiro; Hernandez-Antolin, Rosa A.; Ikazuriaga, Leire Andraka; Cruz-Gonzalez, Ignacio; Lopez-Minguez, Jose R.; Diez, Jose L.; Berenguer-Jofresa, Alberto; Sanchis, Juan; Ruiz-Quevedo, Valeriano; Urbano-Carrillo, Cristobal; Oteo Dominguez, Juan F.; Ortas-Nadal, Maria R.; Molina Navarro, Eduardo; Carrillo, Xavier; Alonso-Briales, Juan H.; Fernandez-Vazquez, Felipe; Asmarats Serra, Luis; Hernandez-Vaquero, Daniel; Jimenez-Quevedo, Pilar; Mesa, Dolores; Rodriguez-Gabella, Tania; Regueiro, Ander; Martinez Monzonis, Amparo; Salido Tahoces, Luisa; Ruiz Gomez, Lara; Trejo-Velasco, Blanca; Becerra-Munoz, Victor M.; Garrote-Coloma, Carmen; Fernandez Peregrina, Estafania; Lorca, Rebeca; De Agustin, Jose A.; Romero, Miguel; Amat-Santos, Ignacio J.; Sabate, Manel; Cid Alvarez, Ana B.; Hernandez-Garcia, Jose M.; Gualis, Javier; Arzamendi, Dabit; Moris, Cesar; Tirado-Conte, Gabriela; Sanchez-Recalde, Angel; Estevez-Loureiro, Rodrigo. **Transcatheter Mitral Repair for Functional Mitral Regurgitation According to Left Ventricular Function: A Real-Life Propensity-Score Matched Study.** *Journal of Clinical Medicine.* 9(6):1792. I.F.: 3.303

49. Ramon Lopez-Minguez, Jose; Manuel Nogales-Asensio, Juan; De Oliveira, Eduardo Infante; Santos, Lino; Ruiz-Salmeron, Rafael; Arzamendi-Aizpurua, Dabit; Costa, Marco; Gutierrez-Garcia, Hipolito; Antonio Fernandez-Diaz, Jose; Freixa, Xavier; Cruz-Gonzalez, Ignacio; Moreno, Raul; Iniguez-Romo, Andres; Alfonso-Manterola, Fernando. **Major Bleeding Predictors in Patients with Left Atrial Appendage Closure: The Iberian Registry II.** *Journal of Clinical Medicine.* 9(7):2295. I.F.: 3.303

50. Benito-Gonzalez, Tomas; Freixa, Xavier; Godino, Cosmo; Taramasso, Maurizio; Estevez-Loureiro, Rodrigo; Hernandez-Vaquero, Daniel; Serrador, Ana; Nombela-Franco, Luis; Grande-Prada, David; Cruz-Gonzalez, Ignacio; San Antonio, Rodolfo; Galasso, Michele; Gavazzoni, Mara; Garrote, Carmen; Portoles-Hernandez, Antonio; Avanzas, Pablo; Fernandez-Vazquez, Felipe; Pascual, Isaac. **Ventricular arrhythmias in patients with functional mitral regurgitation and implantable cardiac devices: implications of mitral valve repair with Mitraclip.** *Annals of Translational Medicine.* 8(15):956. I.F.: 3.297

51. Rodríguez-Arias J.J., Ortega-Paz L., Brugaletta S., Freixa X., Masotti M., Regueiro A., Ariza A., Carrillo X., Lidon R.M., Garcia J., Cardenas M., Rojas S.G., Muñoz J.F., Zielonka M., Tizon-Marcos H., Sabaté M. **Comparison of clinical outcomes in STEMI patients treated with primary PCI according to**

day-time of medical attention and its relationship with circadian pattern. *International Journal of Cardiology.* 305:35-41. I.F.: 3.229

52. Flores-Umanzor EJ; Cepas-Guillen PL; Caldentey G; Pérez-Fuentes P; Arévalos V; Ivey-Miranda J; Regueiro A; Freixa X; Brugaletta S; Farrero M; Andrea R; Roquè M; Ferreira-González I; Martin-Yusté V; Sabaté M. **Sex-based differences in chronic total occlusion management and long-term clinical outcomes.** *International Journal of Cardiology.* 319:46-51. I.F.: 3.229

53. Valero-Masa MJ, González-Vílchez F, Almenar-Bonet L, Crespo-Leiro MG, Manito-Lorite N, Sobrino-Márquez JM, Gómez-Bueno M, Delgado-Jiménez JF, Pérez-Villa F, Brossa Loidi V, Arizón-El Prado JM, Díaz Molina B, de la Fuente-Galán L, Portoles Ocampo A, Garrido Bravo IP, Rábago-Juan Aracil G, Martínez-Sellés M . **Cold ischemia >4 hours increases heart transplantation mortality. An analysis of the Spanish heart transplantation registry.** *International Journal of Cardiology.* 319:14-19. I.F.: 3.229

54. Martínez-Nadal G; Prepoudis A; Miró Ò; Matas A; Cepas P; Aldea A; Izquierdo M; Viladot JRA; Flores D; Gualandro DM; Müller C; López-Barbeito B. **Clinical features of pericarditis with and without myocardial involvement diagnosed in the emergency department and factors associated with need for hospitalization.** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(2):97-104. I.F.: 3.173

55. Bosch X, Ladino A, Moreno-Lozano P, Jordán A, López-Soto A . **Trends in Hospitalization of Patients with Potentially Serious Diseases Evaluated at a Quick Diagnosis Clinic. Diagnostics.** 10(8):585. I.F.: 3.110

56. Aboal J; Llaó I; García García C; Sans-Roselló J; Sambola A; Andrea R; Tomás C; Bonet G; Ariza-Solé A; Viñas D; Oliveras Vilà T; Montero S; Cantalapiedra J; Pujol-López M; Hernández I; Pérez-Rodriguez M; Loma-Osorio P; Sánchez-Salado J. **Comorbidity and low use of new antiplatelets in acute coronary syndrome.** *Aging Clinical and Experimental Research.* 32(8):1525-1531. I.F.: 2.697

57. Cepas-Guillén PL; Borrego-Rodriguez J; Flores-Umanzor E; Echarte-Morales J; Fernandez-Valledor A; Menendez-Suarez P; Vazquez S; Alonso N; Ortiz JT; Regueiro A; Iglesias I; Andrea R; Masotti M; Perez de Prado A; Brugaletta S; Bayón-Fernandez J; Freixa X; Fernandez-Vazquez F; Sabaté M. **Outcomes of Nonagenarians With ST Elevation Myocardial Infarction.** *American Journal of Cardiology.* 125(1):11-18. I.F.: 2.570

58. Lorente V, Aboal J, Garcia C, Sans-Roselló J, Sambola A, Andrea R, Tomás C, Bonet G, Viñas D, El Ouaddi N, Montero S, Cantalapiedra J, Pujol M, Hernández I, Pérez-Rodriguez M, Llaó I, Sánchez-Salado JC, Gual M, Ariza-Solé A. **Anemia in patients with high-risk acute coronary syndromes admitted to Intensive Cardiac Care Units.** *Journal of Geriatric Cardiology.* 17(1):35-42. I.F.: 2.491

59. Xipell, Marc; Flores-Umanzor, Eduardo; Ojeda, Raquel; Arias, Marta; Cepas-Guillen, Pedro L; Regueiro, Ander; Freixa, Xavier; Cases, Aleix; Maduell, Francisco. **Percutaneous left atrial appendage closure, a safe alternative to anticoagulation for patients with nonvalvular atrial fibrillation and end-stage renal disease on hemodialysis: A single center experience.** *Artificial Organs.* 44(5):513-521. I.F.: 2.259

60. García-Cosío MD; González-Vilchez F; López-Vilella R; Barge-Caballero E; Gómez-Bueno M; Martínez-Selles M; Arizón JM; Rangel Sousa D; González-Costello J; Mirabet S; Pérez-Villa F; Díaz-Molina B; Rábago G; Portolés Ocampo A; de la Fuente-Galán L; Garrido I; Delgado-Jiménez JF. **Gender differences in heart transplantation: Twenty-five year trends in the nationwide Spanish heart transplant registry.** *Clinical Transplantation.* 34(12):e14096. I.F.: 1.665

61. Dominguez, Juan M.; Garcia-Romero, Elena; Pamies, Julia; Mirabet, Sonia; Gonzalez-Costello, Jose; Spitaleri, Giosafat; Perez-Villa, Felix; Farrero, Marta. **Incidence of vasoplegic syndrome after cardiac transplantation in patients treated with sacubitril/valsartan.** *Clinical Transplantation.* 34(8):e13994. I.F.: 1.665

62. Nunez-Gil, Ivan J; Vedia, Oscar; Almendro-Delia, Manuel; Raposeiras-Roubin, Sergio; Sionis, Alessandro; Martin-Garcia, Agustin C; Martin-Garcia, Ana; Andres, Mireia; Blanco, Emilia; Martin-de-Miguel, Irene; Uribarri, Aitor; Corbi-Pascual, Miguel; Feltes, Gisela; Bosch, Xavier; Fabregat-Andres, Oscar; Lopez-Pais, Javier; Sanchez-Grande-Flecha, Alejandro; Guillen-Marzo, Marta; Nombre Invest RETAKO. **Takotsubo syndrome and cancer, clinical and prognostic implications, insights of RETAKO.** *Medicina Clínica.* 155(12):521-528. I.F.: 1.635

63. Bosch, Xavier; Moreno, Pedro; Guerra-Garcia, Mar; Guasch, Neus; Lopez-Soto, Alfons. **What is the relevance of an ambulatory quick diagnosis unit or inpatient admission for the diagnosis of pancreatic cancer? A retrospective study of 1004 patients.** *Medicine.* 99(11):e19009. I.F.: 1.552

64. Montori-Palacín E, Ramon J, Compta Y, Insa M, Prieto-González S, Carrasco-Miserachs I, Vidal-Serra RX, Altes-Capella J, López-Soto A, Bosch X. **Quick diagnosis units: predictors of time to diagnosis and costs.** *Medicine.* 99(30):e21241. I.F.: 1.552

65. Carino D, Fernández-Cisneros A, Hernández-Meneses M, Sandoval E, Llopis J, Falces C, Miró JM, Quintana E, Grup d'Estudi d'Endocarditis Infecciosa de l'Hospital Clínic de Barcelona. **The fate of active left-side infective endocarditis with operative indication in absence of valve surgery.** *Journal of Cardiac Surgery.* 35(11):3034-3040. I.F.: 1.490

66. Junquera, Lucia; Vilalta, Victoria; Trillo, Ramiro; Sabate, Manel; Latib, Azeem; Nombela-Franco, Luis; Moris, Cesar; Garcia del Blanco, Bruno; Larman, Mariano; Maria Hernandez, Jose; Iniguez, Andres; Amat-Santos, Ignacio; Fernandez-Nofrerias, Eduard; Regueiro, Ander; Colombo, Antonio; Tzanis, Georgios; Jimenez-Quevedo, Pilar; Perez-Serranos, Isabel; Duran-Priu, Marta; Duocastella, Lluis; Paradis, Jean-Michel; Cabau, Josep Rodes. **Transradial Crossover Balloon Occlusion Technique for Primary Access Hemostasis During Transcatheter Aortic Valve Replacement: Initial Experience With the Oceanus 140 cm and 200 cm Balloon Catheters.** *Journal of Invasive Cardiology.* 32(8):283-288. I.F.: 1.470

67. Marcos-Alonso S; Gil N; García-Guereta L; Albert D; Tejero MÁ; Perez-Villa F; Gómez Bueno M; Blasco Peiró T; Cano A; Díaz Molina B; Rangel Sousa D. **Impact of mechanical circulatory support on survival in pediatric heart transplantation.** *Pediatric Transplantation.* 24(4):e13707. I.F.: 1.425

68. Flores-Umanzor, Eduardo Josue; Cepas-Guillen, Pedro L.; Arzamendi, Dabit; Cruz-Gonzalez, Ignacio; Regueiro, Ander; Freixa, Xavier. **Rationale and design of a randomized clinical trial to compare two antithrombotic strategies after left atrial appendage occlusion: double antiplatelet therapy vs. apixaban (ADALA study).** *Journal of Interventional Cardiac Electrophysiology.* 59(2):471-477. I.F.: 1.277

Review / I.F.: 16.835

1. Garcia-Lunar, I; Pereda, D; Ibanez, B; Garcia-Alvarez, A**. Neurohormonal Modulation as a Therapeutic Target in Pulmonary Hypertension.** *Cells.* 9(11):2521. I.F.: 4.366

2. Andreou I; Stone PH; Ikonomidis I; Alexopoulos D; Sabaté M. **Recurrent atherosclerosis complications as a mechanism for stent failure.** *Hellenic Journal of Cardiology.* 61(1):9-14. I.F.: 4.047

3. Rodríguez-Arias JJ, Ortega-Paz L, Brugaletta S. **Durable polymer everolimus-eluting stents: history, current status and future prospects.** *Expert Review Of Medical Devices.* 17(7):671-682. I.F.: 2.200

4. Banning, Adrian P; Sabate, Manel; Valgimigli, Marco. **The impact of the COVID-19 pandemic upon patients, staff, and on the future practices of percutaneous coronary intervention.** *European Heart Journal Supplements.* 22:P13-P18. I.F.: 1.655

5. Freixa X; Aminian A; de Backer O; Berti S; Nielsen-Kudsk JE. **Left atrial appendage occlusion in COVID-19 times.** *European Heart Journal Supplements.* 22(Suppl Pt t):P47-P52. I.F.: 1.655

6. Rodríguez RCS; Flores-Umanzor E; Cepas-Guillen PL; Masotti M. **Extracorporeal membrane oxygenation in cardiopulmonary disease of rheumatic conditions: A systematic review.** *Medicina Clínica.* 155(10):454-458. I.F.: 1.635

7. Freixa X; Aminian A; Tzikas A; Saw J; Nielsen-Kudsk JE; Ghanem A; Schmidt B; Hildick-Smith D. **Left atrial appendage occlusion with the Amplatzer Amulet: update on device sizing.** *Journal of Interventional Cardiac Electrophysiology.* 59(1):71-78. I.F.: 1.277

Letters / I.F.: 119.384

1. Carbonell-Prat B; Flores-Umanzor E; Brugaletta S. **Ticagrelor or prasugrel in acute coronary syndromes.** *New England Journal of Medicine.* 382(5):486. I.F.: 74.699

2. Ortega-Paz L; Brugaletta S; Gómez-Lara J; Sabaté M. **Response by Ortega-Paz et al to letter regarding article, magnesium-based resorbable scaffold versus permanent metallic sirolimus-eluting stent in patients with ST-Segment elevation myocardial infarction: The MAGSTEMI randomized clinical trial. Circulation.** 141(15):E748-E749. I.F.: 23.603

3. Gimeno-Santos E, Coca-Martinez M, Arguis MJ, Navarro R, Lopez-Hernandez A, Castel MA, Romano B, Lopez-Baamonde M, Sandoval E, Farrero M, Sanz M, Bofill A, Martinez-Palli G. **Multimodal prehabilitation as a promising strategy for preventing physical deconditioning on the heart transplant waiting list.** *European Journal of Preventive Cardiology.* 27(19):2367-2370. I.F.: 5.864

4. Domenech-Ximenos, Blanca; Sanz-de la Garza, Maria; Prat-Gonzalez, Susanna; Garcia-Alvarez, Ana; Sitges, Marta. **Reply from the authors: Moving forward to identify those highly-trained athletes with potentially worse adaptation to intense exercise.** *European Journal of Preventive Cardiology.* 27(19):2071-2072. I.F.: 5.864

5. Spitaleri G, Farrero M . **Translational Medicine in Brain Stem Death and Heart Transplantation.** *Transplantation.* 104(11):2258-2259. I.F.: 4.546

6. Cepas-Guillén PL, Pujol-López M, San Antonio R, Arbelo E, Salgado E, Brugada J . **Brugada syndrome, Brugada phenocopy, or simply arrythmia induced by cocaine intoxication?** *Emergencias: Revista de la Sociedad Española de Medicina de Urgencias y Emergencias.* 32(1):72-74. I.F.: 3.173

7. Cepas-Guillén P, Flores-Umanzor E, Masotti M. **Response to Commentary for 'Spontaneous coronary artery dissection: Not so infrequent to be ignored'.** *Medicina Clínica.* 155(11):512. I.F.: 1.635

Editorial / I.F.: 28.395

1. Sabaté M; Mack M. **Very Late Outcomes After Stent Implantation: It Is Time to Target the Nontarget Sites.** *Journal of the American College of Cardiology.* 75(6):605-607. I.F.: 20.589

2. Cepas-Guillen, Pedro L.; Sabate, Manel. **Unravelling the best management strategy for older patients with acute coronary syndrome.** *European Heart Journal-Acute Cardiovascular Care.* 9(5):478-479. I.F.: 3.813

3. Brugaletta S, Capodanno D, Fajadet J, Wijns W. **PCR e-Course: reshaping education in exceptional circumstances.** *EuroIntervention.* 16(3):185-186. I.F.: 3.993

Case Reports / I.F.: 47.671

1. Ortega-Paz L, Brugaletta S, Sabaté M. **Very-late restenosis of a magnesium-based resorbable scaffold.** *European Heart Journal.* 41(27):2602. I.F.: 22.673

2. Sanchis, Laura; Jorda, Paloma; Pereda, Daniel; Garcia Alvarez, Ana; Perdomo, Juan M; Regueiro, Ander; Sabate, Manel; Sitges, Marta; Freixa, Xavier. **MitraClip Implantation for Hemolytic Anemia Treatment After Surgical Mitral Valve Repair.** *Jacc-Cardiovascular Interventions.* 13(9):e85-e86. I.F.: 8.432

3. Sanchis L, Quintana E, Navarro R, Farrero M, Sandoval E, Fernandez-Cisneros A, Regueiro A, Sabate M, Sitges M, Freixa X. **Delayed Mitral Leaflet Perforation in a Tethered Valve After MitraClip XTR Implantation**. *Jacc-Cardiovascular Interventions.* 13(20):2438-2439. I.F.: 8.432

4. Mill, Jordi; Olivares, Andy L.; Arzamendi, Dabit; Agudelo, Victor; Regueiro, Ander; Camara, Oscar; Freixa, Xavier. **Impact of Flow Dynamics on Device-Related Thrombosis After Left Atrial Appendage Occlusion.** *Can J Cardiol.* 36(6):968.e13-968.e14. I.F.: 5.234

5. Sandoval, Elena; Lozano, Miquel; Pereda, Daniel; Quintana, Eduard; Cid, Joan; Garcia-Alvarez, Ana; Fernandez-Cisneros, Alejandro; Castella, Manuel. **A combined approach to treat heparin-induced thrombocytopaenia before heart transplant.** *Interactive Cardiovascular and Thoracic Surgery.* 31(6):881-883. I.F.: 1.675

6. Flores-Umanzor EJ, Quinto L, López-Baamonde M, Caixal G, Vázquez S, Tirapu L,

Mendieta G, Andrea R . **Thrombosis and bleeding in critical Coronavirus disease-2019 patients: two sides of the same coin.** *Journal Of Cardiovascular Medicine.* I.F.: 1.225

Clinical Guidelines / I.F.: 7.865

1. Holm, Are M; Mehra, Mandeep R; Courtwright, Andrew; Teuteberg, Jeffrey; Sweet, Stuart; Potena, Luciano; Singer, Lianne G; Farrero, Marta; Shullo, Michael A; Benza, Raymond; Ensminger, Stephan; Aslam, Saima. **Ethical considerations regarding heart and lung transplantation and mechanical circulatory support during the COVID-19 pandemic: an ISHLT COVID-19 Task Force statement.** *Journal of Heart and Lung Transplantation.* 39(7):619-626. I.F.: 7.865

Consortium Publications / I.F.: 105.38

1. Dangas GD, Tijssen JGP, Wöhrle J, Søndergaard L, Gilard M, Möllmann H, Makkar RR, Herrmann HC, Giustino G, Baldus S, De Backer O, Guimarães AHC, Gullestad L, Kini A, von Lewinski D, Mack M, Moreno R, Schäfer U, Seeger J, Tchétché D, Thomitzek K, Valgimigli M, Vranckx P, Welsh RC, Wildgoose P, Volkl AA, Zazula A, van Amsterdam RGM, Mehran R, Windecker S, GALILEO Investigators. **A Controlled Trial of Rivaroxaban after Transcatheter Aortic-Valve Replacement.** *New England Journal of Medicine.* 382(2):120-129. I.F.: 74.699

2. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

3. SEC Working Group for the 2019 ESC guidelines on chronic coronary syndromes, Expert Reviewers for the 2019 ESC guidelines on chronic coronary syndromes, SEC Guidelines Committe; SEC Working Group for the 2019 ESC guidelines on chronic coronary syndromes; SEC Guidelines Committee. **Comments on the 2019 ESC guidelines on chronic coronary syndromes.** *Rev Esp Cardiol.* 73(6):439-444. I.F.: 4.642

4. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

GRANTS FOR RESEARCH IN PROGRESS

Brugaletta S. **Efecto a corto, mediano y largo plazo de la enfermedad por Coronavirus 2019 en el sistema cardiovascular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_COV20/00040
Duration: 30/04/2020-29/04/2021

Dantas AP, Brugaletta S. **Potencial papel pronóstico y terapéutico de los miRNAs exosomales derivados de las células circulantes (progenitoras endoteriales, plaquetas y neutrófilos) en el síndrome coronario agudo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00742
Duration: 01/01/2017-31/12/2020

Dantas AP, Brugaletta S. **Impacto de nuevas TeRapias para reducir los lípidos y la inflamación en el fenotipo y perfil funcional de las células progenitoras ENDoteliales en la enfermedad coronaria: estudio TREND.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00264
Duration: 01/01/2020-31/12/2022

Dantas AP. **Targeting endothelial dysfunction in highly prevalent diseases: characterization and validation of prognostic biomarkers and identification of potential therapeutic strategies.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE15/00027
Duration: 01/01/2016-30/06/2020

Dantas AP. **Potential of EXosomes derived from Progenitor endothelial cells to improve REvascularization in murine model of myocardial infraction: EXPloRE Study.**
Sponsored by: Fundación Casa del Corazón (FEC). SEC_FEC-INV-BAS20/012
Duration: 29/10/2020-28/10/2021

García-Álvarez A. **Tractament agonista adrenèrgic en la hipertensió pulmonar crònica secundària a insuficiència cardíaca: assaig clínic fase 2 aleatoritzat i controlat amb placebo.**
Sponsored by: Fundació La Marató de TV3. Cor_15
Duration: 21/07/2016-30/01/2020

García-Álvarez A. **Estudio de los mecanismos fisiopatológicos que conducen a la hipertrofia maladaptativa del ventrículo derecho en la hipertensión pulmonar crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00995
Duration: 01/01/2018-31/12/2021

Pomar J, Aguiló S. **Detección precoz de vulnerabilidad al trastorno de estrés postraumático en poblaciones altamanente expuestas al COVID-19.**
Sponsored by: Universitat Autònoma de Barcelona (UAB). SANTANDER_COVID20_02
Duration: 01/07/2020-30/06/2021

Rigol M, Sabaté M. **Terapia combinada con células progenitoras endoteliales y mesenquimales autólogas para maximizar su potencial terapéutico en la cardiopatía isquémica crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00277
Duration: 01/01/2019-31/12/2021

Rigol M. **Estrategias para optimizar el potencial terapéutico de las células progenitoras endoteliales: terapia combinada y rejuvenecimiento.**
Sponsored by: Fundación Casa del Corazón (FEC). SEC_BASICA_01
Duration: 26/10/2017-

Roqué M. **Inhibición de la hiperplasia de la íntima con PAP-1, un inhibidor selectivo de los canales de potasio. Desarollo de un stent farmacoactivo liberador de PAP-1 y aplicación en un modelo experimental de restenosis.**
Sponsored by: Fundación Casa del Corazon. SEC_InvTraslaciona15
Duration: 24/10/2015-

Roqué M. **Acute myocardical infarction in young patients. Analysis of prothrombotic, inflammatory and epigenetic factors. Effect of miRNA expressión modulation in a porcine model.**
Sponsored by: Instituto de Salud Carlos III

(ISCIII). FIS_PI15/00553
Duration: 01/01/2016-30/11/2020

Sabaté M. **Aterosclerosi, malaltia coronària i insuficiència cardíaca.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01525
Duration: 01/01/2017-30/09/2021

Sabaté M. **Assessment of up-front use of Mechanical Support Device in Cardiogenic Shock: The EURO SHOCK 2020 Research Consortium Study.**
Sponsored by: European Commission.
CE_H2020-SC1_17_2s
Duration: 01/01/2018-31/12/2022

DOCTORAL THESES

Brugaletta S, Sabate M. **Physiological and morphological assessment of patients with coronary artery disease and impact of intracoronary devices in clinical outcomes.**
PhD student: Luis Gabriel Ortega Paz

Sabate M, Freixa X. **Transcatheter Aortic Valve Implantation: Moving Forward to Minimize Vascular and Bleeding Complications.**
PhD student: Marco Hernández Enríquez

Freixa X. **Influència de l'administració precoç de tractament antitrombòtic en pacients amb infart agut de miocardi amb elevació del segment st tractats amb intervencionisme coronari percutani primari.**
PhD student: Teresa Giralt Borrell

Garcia A. **Valor pronóstico de la función del ventrículo derecho y la hipertensión pulmonar en pacientes con insuficiencia cardíaca crónica: estudio clínico y traslacional.**
PhD student: Evelyn Santiago Vacas

Rigol M. **Terapia con células madre mesenquimales derivadas del tejido adiposo alogénicas en un modelo porcino de infarto agudo de miocardio.**
PhD student: Joaquim Bobí I Gibert

Sabate M. **Tratamiento Antitrombótico Tras Intervencionismo Percutáneo en Cardiopatías Estructurales/Congénitas.**
PhD student: Jose Rodes Cabau

Sabaté M, Vilahur G. **Ischemic Heart Disease: Identification of novel mechanisms to achieve cardiac protection.**
PhD student: Lina Guiomar Mendieta Badimon

2.17 Cardiac imaging

LOCATION
HCB building

KEYWORDS
1. **Cardiac imaging**
2. **Echocardiography**
3. **Cardiac magnetic resonance**

RELATED DISEASES
1. **Heart valve disease**
2. **Athlete's heart**
3. **Arrhythmia**
4. **Acute coronary syndromme**
5. **Myocardial infarction**

GROUP INVOLVED IN
CIBERCV

Original publications

TOTAL	30
IF	140,65
Mean IF	4,69
Q1	47%
D1	17%
MA	30%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Marta Sitges (HCB)
T. 93 227 17 94
msitges@clinic.cat

RESEARCHERS
Mª Teresa de Caralt (HCB)
Adelina Doltra (HCB)
Sílvia Montserrat (HCB)
José Tomás Ortíz (HCB)
Rosario Jesús Perea (HCB)
Susana Prat (HCB)
Laura Sanchís (HCB)
María Sanz de la Garza (HCB)
Bárbara Vidal (HCB)

POST-DOCTORAL RESEARCHERS
Montserrat Venturas (HCB)

PRE-DOCTORAL RESEARCHERS
Marc Abulí (FCRB-HCB)
Blanca Domenech (UB)
Filip Loncaric (IDIBAPS)
Vanessa Martínez García (UB)
Aleksandra Mas (UB)
Dulman Omar Pineda de Paz (UB)

TECHNICIANS
Daniel Lorenzatti (IDIBAPS)

NURSING STAFF
Elisabet Codina (FCRB)
Sílvia Poyatos (FCRB)

ADMINISTRATIVE STAFF
Laura González Betlinski (FCRB)

PROBLEM

Many cardiac diseases present with a common syndrome: heart failure or arrhythmia. There are several therapeutic options for treating these diseases, which can sometimes be very expensive or involve a certain risk for the patient.

The group's research focuses on non-invasive identification, using imaging techniques and cardiac biomarkers, of the myocardial and electrical pathophysiological substrate in order to be able to select the best therapeutic option for each patient, as well as identify those patients with the highest risks.

This level of description and identification, which we can achieve with imaging techniques, also allows us to evaluate the impact of new therapies.

APPROACH

This is a multidisciplinary group and includes professionals who are experts in the various aspects of non-invasive heart imaging. It performs research on cardiac mechanics in various cardiovascular conditions, such as arrhythmias, heart valve diseases and heart failure, as well as heart adaptation to physical training.

Based on clinical observations, the group applies cardiac imaging techniques to evaluate the functioning of the heart. In this way, we can identify patients at risk of heart disease or complications. Through this research, the benefits or impact of some therapies on the heart can also be analyzed.

IMPACT

The group's goal is to improve the tools that enable the identification of patients at risk of suffering from heart disease, as well as those who may respond better to a specific treatment. Therefore, its hope is to obtain results in both prevention and the achievement of a more accurate diagnosis.

Its research is also helping to improve the treatment of heart failure, valvular disease and heart rhythm disorders. As a whole, its work is also leading to better survival rates and a better quality of life for patients with cardiovascular diseases, as well as a more efficient use of health resources.

RESEARCH LINES

- Characterization of cardiac mechanics in heart failure.

- Characterization of hypertrophic hearts (INDEPTH-HCM).

- Identification of athletes at risk of sudden death.

- Identification of candidates for and impact of percutaneous therapies for heart valve diseas.

- Identification of patients at risk of sudden death and heart failure after myocardial infarction.

- Non invasive characterization of arrhythmia substrate.

- Prediction of atrial fibrillation in patients at risk (PREDICTAF study).

- Usefulness of non-invasive cardiac imaging in the identification of acute coronary syndromes.

PUBLICATIONS

Originals / I.F.: 140.651

1. Téllez L, Rodríguez de Santiago E, Minguez B, Payance A, Clemente A, Baiges A, Morales-Arraez D, La Mura V, Llop E, Garrido E, Garrido-Lestache E, Tasayco S, Bruno O, Prieto R, Montserrat S, Pons M, Olavarría A, Dos L, Legendre A, Jesús Del Cerro M, Bañares R, García-Pagán JC, Rautou PE, Albillos A, VALDIG an EASL consortium. **Prevalence, features and predictive factors of liver nodules in Fontan surgery patients: The VALDIG Fonliver prospective cohort.** *Journal of Hepatology*. 72(4):702-710. I.F.: 20.582

2. Bernardino G, Benkarim O, Sanz-de la Garza M, Prat-Gonzàlez S, Sepulveda-Martinez A, Crispi F, Sitges M, Butakoff C, De Craene M, Bijnens B, González Ballester MA. **Handling confounding variables in statistical shape analysis - application to cardiac remodelling.** *Medical Image Analysis*. 65(101792):101792. I.F.: 11.148

3. Domenech-Ximenos B, Garza MS, Prat-González S, Sepúlveda-Martínez Á, Crispi F, Perea RJ, Garcia-Alvarez A, Sitges M. **Exercise-induced cardio-pulmonary remodelling in endurance athletes: Not only the heart adapts.** *European Journal of Preventive Cardiology*. 27(6):651-659. I.F.: 5.864

4. Marcos-Garces V; Gavara J; Lopez-Lereu MP; Monmeneu JV; Rios-Navarro C; de Dios E; Perez N; Cànoves J; Gonzalez J; Minana G; Nunez J; de la Espriella R; Santas E; Moratal D; Chorro FJ; Valente F; Lorenzatti D; Rodríguez-Palomares JF; Ortiz-Pérez JT; Bodi V. **Ejection Fraction by Echocardiography for a Selective Use of Magnetic Resonance After Infarction.** *Circulation-cardiovascular Imaging*. 13(12):e011491. I.F.: 5.691

5. Sanz-de la Garza M, Vaquer-Seguí A, Durán K, Blanco I, Burgos F, Alsina X, Prat-González S, Bijnens B, Sitges M .**Pulmonary transit of contrast during exercise is related to improved cardio-pulmonary performance in highly trained endurance athletes.** *European Journal of Preventive Cardiology*. 27(14):1504-1514. I.F.: 5.864

6. Abuli, Marc; Grazioli, Gonzalo; Sanz de la Garza, Maria; Montserrat, Silvia; Vidal, Barbara; Doltra, Adelina; Sarquella-Brugada, Georgia; Bellver, Montserrat; Pi, Ramon; Brotons, Daniel; Oxborough, David; Sitges, Marta. **Aortic root remodelling in competitive athletes**. *European Journal of Preventive Cardiology*. 27(14):1518-1526. I.F.: 5.864

7. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combinations are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis**.*Journal of Antimicrobial Chemotherapy*. 75(12):3586-3592. I.F.: 5.439

8. Domenech-Ximenos B; Sanz-de la Garza M; Prat-González S; Sepúlveda-Martínez A; Crispi F; Duran-Fernandez K; Perea RJ; Bijnens B; Sitges M. **Prevalence and pattern of cardiovascular magnetic resonance late gadolinium enhancement in highly trained endurance athletes.** *Journal of Cardiovascular Magnetic Resonance*. 22(1):62. I.F.: 5.361

9. Marsan, Nina Ajmone; Michalski, Blazej; Cameli, Matteo; Podlesnikar, Tomaz; Manka, Robert; Sitges, Marta; Dweck, Marc R; Haugaa, Kristina H. **EACVI survey on standardization of cardiac chambers quantification by transthoracic echocardiography.** *European Heart Journal Cardiovascular Imaging*. 21(2):119-123. I.F.: 4.841

10. Rafecas A, Bañeras J, Sans-Roselló J, Ortiz-Pérez JT, Rueda-Sobella F, Santamarina E, Milà L, Sionis A, Gaig C, García-García C, Barrabés JA, García-Dorado D, Lidón RM. **Change in neuron specific enolase levels in out-of-hospital cardiopulmonary arrest survivors as a simple and useful tool to predict neurological prognosis.** *Revista Española De Cardiología*.73(3):232-240. I.F.: 4.642

11. Sanchis L, Freixa X, Regueiro A, Perdomo JM, Sabaté M, Sitges M .**Safety and outcomes of MitraClip implantation in functional mitral regurgitation according to degree of left ventricular dysfunction. Revista Española de Cardiología.** 73(7):530-535. I.F.: 4.642

12. Pascual I, Arzamendi D, Carrasco-Chinchilla F, Fernández-Vázquez F, Freixa X, Nombela-Franco L, Avanzas P, Serrador Frutos AM, Pan M, Cid Álvarez AB, Hernández-Antolín RA, Andraka Ikazuriaga L, Cruz-González I, Díez Gil JL, Alcasena Juango MS, Berenguer Jofresa A, Alonso-Briales JH, Li CH, Benito González T, Regueiro A, Armijo G, León V, Amat-Santos IJ, Romero M, Trillo Nouche R, Fernández-Golfín C, Ruiz Gómez L, Campos-Arjona R, Millán X, Garrote Coloma C, Sanchis L, Jiménez-Quevedo P, Morís C, Hernández-García JM, Serra A, Pérez de Prado A, Estévez-Loureiro R. **Transcatheter mitral repair according to the cause of mitral regurgitation: real-life data from the Spanish MitraClip registry.** *Revista Española de Cardiología*. 73(8):643-651. I.F.: 4.642

13. Bisbal F, Benito E, Teis A, Alarcón F, Sarrias A, Caixal G, Villuendas R, Garre P, Soto N, Cozzari J, Guasch E, Juncà G, Prat-Gonzalez S, Perea RJ, Bazán V, Tolosana JM, Arbelo E, Bayés-Genís A, Mont L. **Magnetic Resonance Imaging-Guided Fibrosis Ablation for the Treatment of Atrial Fibrillation: The ALICIA Trial.** *Circulation-Arrhythmia and Electrophysiology*. 13(11):e008707. I.F.: 4.393

14. Quinto L, Cozzari J, Benito E, Alarcón F, Bisbal F, Trotta O, Caixal G, San Antonio R, Garre P, Prat-Gonzalez S, Perea RJ, Tolosana JM, Berruezo A, Arbelo E, Roca-Luque I, Sitges M, Brugada J, Guasch E, Mont L .

Magnetic resonance-guided re-ablation for atrial fibrillation is associated with a lower recurrence rate: a case-control study. *Europace.* 22(12):1805-1811. I.F.: 4.045

15. Linhart M, Doltra A, Acosta J, Borràs R, Jáuregui B, Fernández-Armenta J, Anguera I, Bisbal F, Martí-Almor J, Tolosana JM, Penela D, Soto-Iglesias D, Villuendas R, Perea RJ, Ortiz JT, Bosch X, Auricchio A, Mont L, Berruezo A . **Ventricular arrhythmia risk is associated with myocardial scar but not with response to cardiac resynchronization therapy.** *Europace.* 22(9):1391-1400. I.F.: 4.045

16. Roca-Luque I, Van Breukelen A, Alarcon F, Garre P, Tolosana JM, Borras R, Sanchez P, Zaraket F, Doltra A, Ortiz-Perez JT, Prat-Gonzalez S, Perea RJ, Guasch E, Arbelo E, Berruezo A, Sitges M, Brugada J, Mont L. **Ventricular scar channel entrances identified by new wideband cardiac magnetic resonance sequence to guide ventricular tachycardia ablation in patients with cardiac defibrillators.** *Europace.* 22(4):598-606. I.F.: 4.045

17. Alarcón F, Cabanelas N, Izquierdo M, Benito E, Figueras I Ventura R, Guasch E, Prat-Gonzalez S, Perea RJ, Borràs R, Trotta O, Arbelo E, Tolosana JM, Sitges M, Berruezo A, Brugada J, Mont L. **Cryoballoon vs. radiofrequency lesions as detected by late-enhancement cardiac magnetic resonance after ablation of paroxysmal atrial fibrillation: a case-control study.** *Europace.*22(3):382-387. I.F.: 4.045

18. Nasser SB, Doeblin P, Doltra A, Schnackenburg B, Wassilew K, Berger A, Gebker R, Bigvava T, Hennig F, Pieske B, Kelle S. **Cardiac Myxomas Show Elevated Native T1, T2 Relaxation Time and ECV on Parametric CMR.** *Front Cardiovasc Med.* 7:602137. I.F.: 3.915

19. Bosch X; Jáuregui B; Villamor N; Morales-Ruiz M; Ortiz-Pérez J; Borràs R; Penela D; Soto-Iglesias D; Perea R; Doltra A; Prat-González S; Jiménez W; Mira Á; Lasalvia L; Berruezo A. **Monocyte Subsets Are Differently Associated with Infarct Size, Left Ventricular Function, and the Formation of a Potentially Arrhythmogenic Scar in Patients with Acute Myocardial Infarction.** *Journal Of Cardiovascular Translational Research.* 13(5):722-730. I.F.: 3.312

20. D'Ascenzi F, Sanz-De La Garza M, Anselmi F, Nunno L, Arbelo E, Jordà P, Marzotti T, Aprile F, Piu P, Natali BM, Brugada J, Sitges M, Mondillo S. **Electromechanical delay by speckle-tracking echocardiography: A novel tool to distinguish between Brugada syndrome and isolated right bundle branch block.** *International Journal of Cardiology.* 320:161-167. I.F.: 3.229

22. Martinez V, Sanz de la Garza M, Grazioli G, Roca E, Brotons D, Sitges M. **Cardiac adaptation to endurance exercise training: differential impact of swimming and running.** *European Journal of Sport Science.* :1-10. I.F.: 2.781

23. Piccari, Lucilla; Del Pozo, Roberto; Blanco, Isabel; Garcia-Lucio, Jessica; Torralba, Yolanda; Tura-Ceide, Olga; Moises, Jorge; Sitges, Marta; Ivo Peinado, Victor; Albert Barbera, Joan. **Association Between Systemic and Pulmonary Vascular Dysfunction in COPD.** *International Journal of Chronic Obstructive Pulmonary Disease.* 15:2037-2047. I.F.: 2.772

24. Bernardino G, Sanz de la Garza M, Domenech-Ximenos B, Prat-Gonzàlez S, Perea RJ, Blanco I, Burgos F, Sepulveda-Martinez A, Rodriguez-Lopez M, Crispi F, Butakoff C, González Ballester MA, De Craene M, Sitges M, Bijnens B .**Three-dimensional regional bi-ventricular shape remodeling is associated with exercise capacity in endurance athletes**. *European Journal of Applied Physiology.* 120(6):1227-1235. I.F.: 2.580

25. Cepas-Guillén PL; Borrego-Rodriguez J; Flores-Umanzor E; Echarte-Morales J; Fernandez-Valledor A; Menendez-Suarez P; Vazquez S; Alonso N; Ortiz JT; Regueiro A; Iglesias I; Andrea R; Masotti M; Perez de Prado A; Brugaletta S; Bayón-Fernandez J; Freixa X; Fernandez-Vazquez F; Sabaté M. **Outcomes of Nonagenarians With ST Elevation Myocardial Infarction.** *American Journal of Cardiology.* 125(1):11-18. I.F.: 2.570

26. Loncaric F, Nunno L, Mimbrero M, Marciniak M, Fernandes JF, Tirapu L, Fabijanovic D, Sanchis L, Doltra A, Cikes M, Lamata P, Bijnens B, Sitges M . **Basal Ventricular Septal Hypertrophy in Systemic Hypertension.** *American Journal of Cardiology.* 125(9):1339-1346. I.F.: 2.570

27. Duchateau N; Loncaric F; Cikes M; Doltra A; Sitges M; Bijnens B. **Variability in the Assessment of Myocardial Strain Patterns: Implications for Adequate Interpretation.** *Ultrasound In Medicine and Biology.* 46(2):244-254. I.F.: 2.514

28. Trotta O, Alarcón F, Guasch E, Benito EM, San Antonio R, Perea RJ, Prat-Gonzalez S, Apolo J, Sitges M, Tolosana JM, Mont L, other members of the Atrial Fibrillation Unit. **Impact of cryoballoon applications on lesion gaps detected by magnetic resonance after pulmonary vein isolation.** *Journal of Cardiovascular Electrophysiology.* 31(3):638-646. I.F.: 2.424

29. Llaó I, Gómez-Hospital JA, Aboal J, Garcia C, Montero S, Sambola A, Ortiz J, Tomás C, Bonet G, Viñas D, Oliveras T, Sans-Roselló J, Cantalapiedra J, Andrea R, Hernández I, Pérez-Rodriguez M, Gual M, Cequier A, Ariza-Solé A, en representación de los investigadores del Grup de Treball de Cures Agudes Cardiològiques de la Societat Catalana de Cardiologia. **Risk-adjusted early invasive strategy in patients with non-ST-segment elevation acute coronary syndrome in Intensive Cardiac Care Units**. *Medicina Intensiva.* 44(8):475-484. I.F.: 2.363

30. Gaede L; Sitges M; Neil J; Selvi E; Woan W; Derks R; Möllmann H. **European heart health survey 2019.** *Clinical Cardiology.* 43(12):1539-1546. I.F.: 2.248

Review / I.F.: 38.448

1. Corral-Acero J, Margara F, Marciniak M, Rodero C, Loncaric F, Feng Y, Gilbert A, Fernandes JF, Bukhari HA, Wajdan A, Martinez MV, Santos MS, Shamohammdi M, Luo H, Westphal P, Leeson P, DiAchille P, Gurev V, Mayr M, Geris L, Pathmanathan P, Morrison T, Cornelussen R, Prinzen F, Delhaas T, Doltra A, Sitges M, Vigmond EJ, Zacur E, Grau V, Rodriguez B, Remme EW, Niederer S, Mortier P, McLeod K, Potse M, Pueyo E, Bueno-Orovio A, Lamata P . **The 'Digital Twin' to enable the vision of precision cardiology.** *European Heart Journal.* 41(48):4556-4564. I.F.: 22.673

2. Thomas L; Muraru D; Popescu BA; Sitges M; Rosca M; Pedrizzetti G; Henein MY; Donal E; Badano LP. **Evaluation of Left Atrial Size and Function: Relevance for Clinical Practice.** *Journal of The American Society of Echocardiography.* 33(8):934-952. I.F.: 5.508

3. Tutusaus A, Marí M, Ortiz-Pérez JT, Nicolaes GAF, Morales A, García de Frutos P. **Role of Vitamin K-Dependent Factors Protein S and GAS6 and TAM Receptors in SARS-CoV-2 Infection and COVID-19-Associated Immunothrombosis.** *Cells*. 9(10):2186. I.F.: 4.366

4. Abulí M; de la Garza MS; Sitges M. **Differentiating Athlete's Heart from Left Ventricle Cardiomyopathies.** *Journal of Cardiovascular Translational Research.* 13(3):265-273. I.F.: 3.312

5. Loncaric F; Cikes M; Sitges M; Bijnens B. **Comprehensive data integration-Toward a more personalized assessment of diastolic function.** *Echocardiography-A Journal of Cardiovascular Ultrasound and Allied Techniques*. 37(11):1926-1935. I.F.: 1.39

6. Cibeira MT, Ortiz-Pérez JT, Quintana LF, Fernádez de Larrea C, Tovar N, Bladé J. **Supportive Care in AL Amyloidosis.** *Acta Haematológica.* 143(4):335-342. I.F.: 1.196

Letters / I.F.: 11.728

1. Gimeno-Santos E, Coca-Martinez M, Arguis MJ, Navarro R, Lopez-Hernandez A, Castel MA, Romano B, Lopez-Baamonde M, Sandoval E, Farrero M, Sanz M, Bofill A, Martinez-Palli G. **Multimodal prehabilitation as a promising strategy for preventing physical deconditioning on the heart transplant waiting list.** *European Journal of Preventive Cardiology*. 27(19):2367-2370. I.F.: 5.864

2. Domenech-Ximenos, Blanca; Sanz-de la Garza, Maria; Prat-Gonzalez, Susanna; Garcia-Alvarez, Ana; Sitges, Marta. **Reply from the authors: Moving forward to identify those highly-trained athletes with potentially worse adaptation to intense exercise.** *European Journal of Preventive Cardiology.* 27(19):2071-2072. I.F.: 5.864

Case Reports / I.F.: 16.864

1. Sanchis, Laura; Jorda, Paloma; Pereda, Daniel; Garcia Alvarez, Ana; Perdomo, Juan M; Regueiro, Ander; Sabate, Manel; Sitges, Marta; Freixa, Xavier. **MitraClip Implantation for Hemolytic Anemia Treatment After Surgical Mitral Valve Repair.** *Jacc-Cardiovascular Interventions.* 13(9):e85-e86. I.F.: 8.432

2. Sanchis L, Quintana E, Navarro R, Farrero M, Sandoval E, Fernandez-Cisneros A, Regueiro A, Sabate M, Sitges M, Freixa X. **Delayed Mitral Leaflet Perforation in a Tethered Valve After MitraClip XTR Implantation.** *Jacc-Cardiovascular Interventions.*13(20):2438-2439. I.F.: 8.432

Consortium Publications / I.F.: 30.875

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.*41(22):2092-2112. I.F.: 22.673

2. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of the American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

3. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

GRANTS FOR RESEARCH IN PROGRESS

Doltra A. **Cooperación clínico-técnica para la predicción precoz de fibrilación auricular: hacia un abordaje personalizado integral.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01131
Duration: 01/01/2018-30/06/2022

Ortíz-Pérez JT, Bosch X. **Papel del sistema GAS6-TAM en la diferenciación fibroblástica y el remodelado ventricular tras el infarto de miocardio.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00531
Duration: 01/01/2016-30/11/2020

Ortíz-Pérez JT. **Therapeutic targeting of the neutrophil clock in cardiovascular disease.**
Sponsored by: Fundació Bancaria "La Caixa". HealthRes17-00527
Duration: 05/11/2018-04/11/2021

Sitges M. **Predicció personalitzada i oprecoç de fibrilació auricular en subjectes en risc. PREDICTAF.**
Sponsored by: Fundació La Marató de TV3.Cor_15
Duration: 10/05/2016-31/12/2020

Sitges M. **Personalized In-Silico Cardiology.**
Sponsored by: European Commission. CE_H2020-MSCA-ITN-17
Duration: 01/09/2017-31/08/2021

2.18 Applied research in infectious respiratory diseases and critically ill patients

LOCATION
CELLEX building, floor 2B

KEYWORDS
1. **Respiratory infections**
2. **Mechanical ventilation**
3. **Pneumonia**
4. **COVID 19**
5. **COPD, bronchiectasis**
6. **Breathing disturbances in sleep**

RELATED DISEASES
1. **Pulmonary infections, respiratory infections**
2. **Community-acquired pneumònia**
3. **Ventilator-associated pneumonia**
4. **COPD: Chronic Obstructive Pulmonary Diseases**
5. **Bronchiectasis**
6. **Lower respiratory tract infection**
7. **Acute respiratory distress syndrome**

GROUP INVOLVED IN
CIBERES
AGAUR_SGR17: 00787

Original publications

TOTAL	38
IF	195,72
Mean IF	5,15
Q1	58%
D1	21%
MA	47%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Antoni Torres (HCB)
T. 93 227 54 00 (Ext.: 3037)
atorres@clinic.cat

RESEARCHERS
Carles Agustí (HCB)
Joan Ramon Badia (HCB)
Laia Fernández Barat (CIBER)
Miquel Ferrer (HCB)
Arturo Huerta (HCB)
Nestor Soler (HCB)
Dolors Soy (HCB)

POST-DOCTORAL RESEARCHERS
Rosanel Amaro (HCB)
Roberto Cabrera (CIBER)
Adrian Ceccato (HCB)
Catia Cillóniz (FCRB)
Pamela Andrea Conde (FCRB)
Gianluigi Li Bassi (IDIBAPS)
Carmen Lucena (HCB)
Ignacio Martín-Loeches (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Victòria Alcaraz (FCRB)
Marta Arrieta (IDIBAPS)
Enric Barbeta (HCB)
Kasra Kirostami (FCRB)
Ruben López Aladid (FCRB)
Anna Motos (CIBER)
Andrea Catalina Palomeque (HCB)
Carmen Rosa Vargas (HCB)
Hua Yang (FCRB)
Minlan Yang (FCRB)

TECHNICIANS
Albert Gabarrús (FCRB)
Carla Speziale (CIBER)
Nil Vázquez (FCRB)

NURSING STAFF
Leticia Bueno (IDIBAPS)
Ana Cristina Martín (FCRB)

ADMINISTRATIVE STAFF
Elisabet Sancho (CIBER)

PROBLEM

The group focuses its research on the causes, diseased tissue, diagnosis and treatment of respiratory infections in the community and in intensive care, and especially in patients receiving mechanical ventilation. In the 2020 we have included COVID-19 pneumonia and ARDS.

In the 2020 we have included COVID-19 pneumonia and ARDS.

APPROACH

The group's approach is completely translational: it studies respiratory infections based on cell and molecular responses to obtain clinical results, which include pig models.

The group has coordinated and taken part in international guidelines and clinical trials with EMBARC (the European Bronchiectasis Registry). It has also conducted systematic reviews and meta-analyses to improve the evidence-based medical knowledge of respiratory diseases.

This has included COVID-19 management recommendations.

IMPACT

The group has described measures for preventing nosocomial pneumonia and criteria for admitting patients with community-acquired pneumonia to the intensive care unit (ICU) that have been universally adopted.

Furthermore, the research conducted has made it possible to put into practice new therapeutic approaches using advanced genetic bioengineering techniques, in collaboration with the Centre for Genomic Regulation (GRC).

In addition to that we have investigated extensively COVID-19 ICU admitted patients, thanks to an important grants from Generalitat de Catalunya (BIOCAT) and ISCIII (CiberEs).

RESEARCH LINES

- Epidemiology, prevention and new treatments of pneumonias associated with artificial ventilation and new methods of fast diagnosis.

- Epidemiology and diagnosis of community-acquired pneumonia.

- Etiopathogenesis, bronchial infection and inflammation in the patient with chronic obstructive pulmonary disease (COPD).

- Chronic pulmonary infections.

- Infectious lung complications in immune depressed patients.

- Invasive and noninvasive mechanical ventilation.

- Porcine model of acute pulmonary damage due to methicillinresistant P. Aeruginosa, S. Aureus and S. pneumoniae.

- Translational research laboratory for the microbiology diagnosis and pathogen-host response in respiratory infections.

- Covid-19 Pneumonia and ARDS: Risk and prognostic factors using a multicentre approach. Inflammatory and genetics pathways.

- Chronic sleep apnea.

PUBLICATIONS

Originals / I.F.: 195.724

1. Adrover JM, Aroca-Crevillén A, Crainiciuc G, Ostos F, Rojas-Vega Y, Rubio-Ponce A, Cilloniz C, Bonzón-Kulichenko E, Calvo E, Rico D, Moro MA, Weber C, Lizasoaín I, Torres A, Ruiz-Cabello J, Vázquez J, Hidalgo A. **Programmed 'disarming' of the neutrophil proteome reduces the magnitude of inflammation.** *Nature Immunology.* 21(2):135-144. I.F.: 20.479

2. Fernando SM; Tran A; Cheng W; Klompas M; Kyeremanteng K; Mehta S; English SW; Muscedere J; Cook DJ; Torres A; Ranzani OT; Fox-Robichaud AE; Alhazzani W; Munshi L; Guyatt GH; Rochwerg B. **Diagnosis of ventilator-associated pneumonia in critically ill adult patients—a systematic review and meta-analysis.** *Intensive Care Medicine.* 46(6):1170-1179. I.F.: 17.679

3. Alcaraz-Serrano V, Gimeno-Santos E, Scioscia G, Gabarrús A, Navarro A, Herrero-Cortina B, Amaro R, Fernández-Barat L, Torres A . **Association between physical activity and risk of hospitalisation in bronchiectasis.** *European Respiratory Journal.* 55(6):1902138. I.F.: 12.339

4. Cilloniz C, Dominedo C, Peroni HJ, Di Giannatale P, Garcia-Vidal C, Gabarrus A, Liapikou A, Ceccato A, Torres A. **Difficult to Treat Microorganisms in Patients Over 80 Years with Community-Acquired Pneumonia: The Prevalence of PES Pathogens.** *European Respiratory Journal.* 56(4):2000773. I.F.: 12.339

5. Bermejo-Martin JF, Almansa R, Torres A, González-Rivera M, Kelvin DJ . **COVID-19 as a cardiovascular disease: the potential role of chronic endothelial dysfunction.** *Cardiovascular Research.* 116(10):e132-e133. I.F.: 8.168

6. Tong A, Elliott JH, Azevedo LC, Baumgart A, Bersten A, Cervantes L, Chew DP, Cho Y, Cooper T, Crowe S, Douglas IS, Evangelidis N, Flemyng E, Hannan E, Horby P, Howell M, Lee J, Liu E, Lorca E, Lynch D, Marshall JC, Gonzalez AM, McKenzie A, Manera KE, McLeod C, Mehta S, Mer M, Morris AC, Nseir S, Povoa P, Reid M, Sakr Y, Shen N, Smyth AR, Snelling T, Strippoli GF, Teixeira-Pinto A, Torres A, Turner T, Viecelli AK, Webb S, Williamson PR, Woc-Colburn L, Zhang J, Craig JC, COVID-19-Core Outcomes Set (COS) Workshop Investigators. **Core Outcomes Set for Trials in People With Coronavirus Disease 2019.** *Critical Care Medicine.* 48(11):1622-1635. I.F.: 7.414

7. Evangelidis N, Tong A, Howell M, Teixeira-Pinto A, Elliott JH, Azevedo LC, Bersten A, Cervantes L, Chew DP, Crowe S, Douglas IS, Flemyng E, Horby P, Lee J, Lorca E, Lynch D, Marshall JC, McKenzie A, Mehta S, Mer M, Morris AC, Nseir S, Povoa P, Reid M, Sakr Y, Shen N, Smyth AR, Snelling T, Strippoli GFM, Torres A, Turner T, Webb S, Williamson PR, Woc-Colburn L, Zhang J, Baumgart A, Cabrera S, Cho Y, Cooper T, Guha C, Liu E, Gonzalez AM, McLeod C, Natale P, Saglimbene V, Viecelli AK, Craig JC, COVID-19-Core Outcomes Set (COS) Survey Investigators. **International Survey to Establish Prioritized Outcomes for Trials in People With Coronavirus Disease 2019.** *Critical Care Medicine.* 48(11):1612-1621. I.F.: 7.414

8. Ranzani OT, Motos A, Chiurazzi C, Ceccato A, Rinaudo M, Li Bassi G, Ferrer M, Torres A . **Diagnostic accuracy of Gram staining when predicting staphylococcal hospital-acquired pneumonia and ventilator-associated pneumonia: a systematic review and meta-analysis.** *Clinical Microbiology and Infection.* 26(11):1456-1463. I.F.: 7.117

9. Bermejo-Martin JF, González-Rivera M, Almansa R, Micheloud D, Tedim AP, Domínguez-Gil M, Resino S, Martín-Fernández M, Ryan Murua P, Pérez-García F, Tamayo L, Lopez-Izquierdo R, Bustamante E, Aldecoa C, Gómez JM, Rico-Feijoo J, Orduña A, Méndez R, Fernández Natal I, Megías G, González-Estecha M, Carriedo D, Doncel C, Jorge N, Ortega A, de la Fuente A, Del Campo F, Fernández-Ratero JA, Trapiello W, González-Jiménez P, Ruiz G, Kelvin AA, Ostadgavahi AT, Oneizat R, Ruiz LM, Miguéns I, Gargallo E, Muñoz I, Pelegrin S, Martín S, García Olivares P, Cedeño JA, Ruiz Albi T, Puertas C, Berezo JÁ, Renedo G, Herrán R, Bustamante-Munguira J, Enríquez P, Cicuendez R, Blanco J, Abadia J, Gómez Barquero J, Mamolar N, Blanca-López N, Valdivia LJ, Fernández Caso B, Mantecón MÁ, Motos A, Fernandez-Barat L, Ferrer R, Barbé F, Torres A, Menéndez R, Eiros JM, Kelvin DJ. **Viral RNA load in plasma is associated with critical illness and a dysregulated host response in COVID-19.** *Critical Care.* 24(1):691. I.F.: 6.407

10. Griguolo G, Brasó-Maristany F, González-Farré B, Pascual T, Chic N, Saurí T, Kates R, Gluz O, Martínez D, Paré L, Tsvetkova V, Pesantez D, Vidal M, Adamo B, Muñoz M, Galván P, Barberá L, Cuatrecasas M, Christgen M, Kreipe H, Monge-Escartín I, Villagrasa P, Soy D, Giarratano T, Dieci MV, Conte P, Harbeck N, Guarneri V, Prat A. **ERBB2 mRNA Expression and Response to Ado-Trastuzumab Emtansine (T-DM1) in HER2-Positive Breast Cancer.** *Cancers.* 12(7):1902. I.F.: 6.126

11. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combina-**

tions are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis. *Journal of Antimicrobial Chemotherapy.* 75(12):3586-3592. I.F.: 5.439

12. Bastida C, Hernández-Tejero M, Aziz F, Espinosa C, Sanz M, Brunet M, López E, Fernández J, Soy D. **Meropenem population pharmacokinetics in patients with decompensated cirrhosis and severe infections.** *Journal of Antimicrobial Chemotherapy.* 75(12):3619-3624. I.F.: 5.439

13. Venkatesan S, Myles PR, Bolton KJ, Muthuri SG, Al Khuwaitir T, Anovadiya AP, Azziz-Baumgartner E, Bajjou T, Bassetti M, Beovic B, Bertisch B, Bonmarin I, Booy R, Borja-Aburto VH, Burgmann H, Cao B, Carratala J, Chinbayar T, Cilloniz C, Denholm JT, Dominguez SR, Duarte PAD, Dubnov-Raz G, Fanella S, Gao Z, Gérardin P, Giannella M, Gubbels S, Herberg J, Higuera Iglesias AL, Hoeger PH, Hu XY, Islam QT, Jiménez MF, Keijzers G, Khalili H, Kusznierz G, Kuzman I, Langenegger E, Lankarani KB, Leo YS, Libster RP, Linko R, Madanat F, Maltezos E, Mamun A, Manabe T, Metan G, Mickiene A, Miki? D, Mohn KGI, Oliva ME, Ozkan M, Parekh D, Paul M, Rath BA, Refaey S, Rodríguez AH, Sertogullarindan B, Skr?t-Magier?o J, Somer A, Talarek E, Tang JW, To K, Tran D, Uyeki TM, Vaudry W, Vidmar T, Zarogoulidis P,, Nguyen-Van-Tam JS PRIDE Consortium Investigators. **Neuraminidase Inhibitors and Hospital Length of Stay: A Meta-analysis of Individual Participant Data to Determine Treatment Effectiveness Among Patients Hospitalized With Nonfatal 2009 Pandemic Influenza A(H1N1) Virus Infection.** *Journal of Infectious Diseases.* 221(3):356-366. I.F.: 5.022

14. O'Neil B, Ison MG, Hallouin-Bernard MC, Nilsson AC, Torres A, Wilburn JM, van Duijnhoven W, Van Dromme I, Anderson D, Deleu S, Kosoglou T, Vingerhoets J, Rossenu S, Leopold L. **A Phase 2 Study of Pimodivir (JNJ-63623872) in Combination with Oseltamivir in Elderly and NonElderly Adults Hospitalized with Influenza A Infection: OPAL study.** *Journal of Infectious Diseases.* I.F.: 5.022

15. Aldás I; Menéndez R; Méndez R; España P; Almirall J; Boderías L; Rajas O; Zalacaín R; Vendrell M; Mir I; Torres A; Uranga Echeverria A; Borderías L; Briz Muñoz E; de la Torre Terron M; Boixeda Viu R; Motjé M; Bello S; Payeras Cifre A; Morales C; Molinos L; Ferrer R; Briones M; Malo R; Amaro R. **Early and Late Cardiovascular Events in Patients Hospitalized for Community-Acquired Pneumonia.** *Archivos de Bronconeumología.* 56(9):551-558. I.F.: 4.957

16. Bassetti M, Russo A, Cilloniz C, Giacobbe DR, Vena A, Amaro R, Graziano E, Soriano A, Torres A . **Ceftaroline for Severe Community-Acquired Pneumonia: A Real-World Two-Center Experience in Italy and Spain: Ceftaroline for severe pneumonia.** *International Journal of Antimicrobial Agents.* 55(4):105921. I.F.: 4.621

17. Vergara, Andrea; Boutal, Herve; Ceccato, Adrian; Lopez, Miriam; Cruells, Adria; Bueno-Freire, Leticia; Moreno-Morales, Javier; Puig de la Bellacasa, Jorge; Castro, Pedro; Torres, Antoni; Marco, Francesc; Casals-Pascual, Climent; Vila, Jordi. **Assessment of a Loop-Mediated Isothermal Amplification (LAMP) Assay for the Rapid Detection of Pathogenic Bacteria from Respiratory Samples in Patients with Hospital-Acquired Pneumonia.** *Microorganisms.* 8(1):103. I.F.: 4.152

18. Meli A; Barbeta Viñas E; Battaglini D; Li Bassi G; Yang H; Yang M; Bobi J; Motos A; Fernández-Barat L; Chiumello D; Pelosi P; Torres A. **Lateral position during severe mono-lateral pneumonia: an experimental study.** *Scientific Reports (Nature Publisher Group).* 10(1):19372. I.F.: 3.998

19. Cabrera R, Fernández-Barat L, Motos A, López-Aladid R, Vázquez N, Panigada M, Álvarez-Lerma F, López Y, Muñoz L, Castro P, Vila J, Torres A. **Molecular characterization of methicillin-resistant Staphylococcus aureus clinical strains from the endotracheal tubes of patients with nosocomial pneumonia.** *Antimicrobial Resistance and Infection Control.* 9(1):43. I.F.: 3.594

20. Barbeta E, Ceccato A, Artigas A, Ferrer M, Fernández L, López R, Bueno L, Motos A, Bassi GL, Mellado R, Ferrando C, Palomeque AC, Panigada M, Gabarrús A, de Mendoza D, Torres A. **Characteristics and Outcomes in Patients with Ventilator-Associated Pneumonia Who Do or Do Not Develop Acute Respiratory Distress Syndrome.** *Journal of Clinical Medicine.* 9(11):3508. I.F.: 3.303

21. Menéndez R, Méndez R, Amara-Elori I, Reyes S, Montull B, Feced L, Alonso R, Amaro R, Alcaraz V, Fernandez-Barat L, Torres A . **Systemic Inflammation during and after Bronchiectasis Exacerbations: Impact of Pseudomonas aeruginosa.** *Journal of Clinical Medicine.* 9(8):2631. I.F.: 3.303

22. Crisafulli E, Cillóniz C, Liapikou A, Ferrari M, Busti F, Girelli D, Torres A. **Systemic Inflammatory Response and Outcomes in Community-Acquired Pneumonia Patients Categorized According to the Smoking Habit or Presence of Chronic Obstructive Pulmonary Disease.** *Journal of Clinical Medicine.* 9(9):2884. I.F.: 3.303

23. Ercibengoa M, Càmara J, Tubau F, García-Somoza D, Galar A, Martín-Rabadán P, Marin M, Mateu L, García-Olivé I, Prat C, Cilloniz C, Torres A, Pedro-Botet ML, Ardanuy C, Muñoz P, Marimón JM. **A multicentre analysis of Nocardia pneumonia in Spain: 2010-2016.** *International Journal of Infectious Diseases.* 90:161-166. I.F.: 3.202

24. Tichy, Eszter; Torres, Antoni; Bassetti, Matteo; Kongnakorn, Thitima; Di Virgilio, Roberto; Irani, Paurus; Charbonneau, Claudie. **Cost-effectiveness Comparison of Ceftazidime/Avibactam Versus Meropenem in the Empirical Treatment of Hospital-acquired Pneumonia, Including Ventilator-associated Pneumonia, in Italy.** *Clinical Therapeutics.* 42(5):802-817. I.F.: 3.119

25. Ielpo A; Crisafulli E; Alcaraz-Serrano V; Gabarrús A; Oscanoa P; Scioscia G; Fernandez-Barat L; Cilloniz C; Amaro R; Torres A. **Aetiological diagnosis in new adult outpatients with bronchiectasis:role of predictors derived from real life experience.** *Respiratory Medicine.* 172(106090). I.F.: 3.095

26. Amoros-Reboredo P; Soy D; Hernandez-Hernandez M; Lens S; Mestres C. **Anticholinergic burden and safety outcomes in older patients with chronic hepatitis c: A retrospective cohort study.** *International Journal of Environmental Research And Public Health.* 17(11):3776. I.F.: 2.849

27. Alonso B, Fernández-Barat L, Di Domenico EG, Marín M, Cercenado E, Merino I, de Pablos M, Muñoz P, Guembe M . **Characterization of the virulence of Pseudomonas aeruginosa strains causing ventilator-associated pneumonia.** *Bmc Infectious Diseases.* 20(1):909. I.F.: 2.688

28. Esperatti M; Fuentes N; Ferrer M; Ranzani OT; Li Bassi G; Singer M; Gonzalez ME; Peraita G; Urbano MS; Torres A. **Association between sepsis at ICU admission and mortality in patients with ICU-acquired pneumonia: An infectious second-hit model.** *Journal of Critical Care.* 59:207-214. I.F.: 2.685

29. Bastida C; Huitema ADR; l'Ami MJ; Ruiz-Esquide V; Wolbink GJ; Sanmartí R; Soy D. **Evaluation of dose-tapering strategies for intravenous tocilizumab in rheumatoid arthritis patients using model-based pharmacokinetic/pharmacodynamic simulations.** *European Journal of Clinical Pharmacology.* 76(10):1417-1425. I.F.: 2.641

30. Li Bassi G, Suen J, Barnett AG, Corley A, Millar J, Fanning J, Lye I, Colombo S, Wildi K, Livingstone S, Abbate G, Hinton S, Liquet B, Shrapnel S, Dalton H, Fraser JF, COVID-19 Critical Care Consortium Investigators. **Design and rationale of the COVID-19 Critical Care Consortium international, multicentre, observational study.** *Bmj Open.* 10(12):e041417. I.F.: 2.496

31. Amoros-Reboredo P, Sotoca JM, Mariño Z, Rodríguez-Tajes S, Pocurull A, Soy D, Forns X, Lens S. **Efficacy and safety of direct-acting antivirals in older patients with cirrhosis and high comorbidity index.** *European Journal of Gastroenterology & Hepatology.* 32(3):389-394. I.F.: 2.251

32. Noviello, Stephanie; Corey, G Ralph; Holland, Thomas L; Lodise, Thomas; O'Riordan, William; Wilcox, Mark H; File, Thomas M; Dryden, Matthew; Balser, Barbara; Scaramucci, Amy; Torres, Antoni; Huang, David B. **A pooled analysis of patients with wound infections in the Phase 3 REVIVE trials: randomized, double-blind studies to evaluate the safety and efficacy of iclaprim versus vancomycin for treatment of acute bacterial skin and skin structure infections.** *Journal of Medical Microbiology.* 69(4):625-630. I.F.: 2.156

33. Herrero-Cortina B, Alcaraz-Serrano V, Torres A, Polverino E. **Reliability and Minimum Important Difference of Sputum Weight in Bronchiectasis.** *Respiratory Care.* 65(10):1478-1487. I.F.: 2.066

34. Boada, Marc; Sanchez-Lorente, David; Libreros, Alejandra; Lucena, Carmen M; Marrades, Ramon; Sanchez, Marcelo; Paredes, Pilar; Serrano, Mario; Guirao, Angela; Guzman, Rudith; Vinolas, Nuria; Casas, Francesc; Agusti, Carles; Molins, Laureano. **Is invasive mediastinal staging necessary in intermediate risk patients with negative PET/CT?** *Journal of Thoracic Disease.* 12(8):3976-3986. I.F.: 2.046

35. Torres, Antoni; Bassetti, Matteo; Welte, Tobias; Rivolo, Simone; Remak, Edit; Peral, Carmen; Charbonneau, Claudie; Hammond, Jennifer; Ansari, Wajeeha; Grau, Santiago. **Economic analysis of ceftaroline fosamil for treating community-acquired pneumonia in Spain.** *Journal of Medical Economics.* 23(2):148-155. I.F.: 1.958

36. Eljaaly, Khalid; Botaish, Ahmed; Bahobail, Fawaz; Almehmadi, Mohamed; Assabban, Ziyad; Thabit, Abrar K; Alraddadi, Basem; Aljabri, Ahmed; Alqahtani, Nasser; Aseeri, Mohammed A; Hashim, Almoutaz; Torres, Antoni. **Systematic review and meta-analysis of the safety of erythromycin compared to clarithromycin in adults and adolescents with pneumonia.** *Journal of Chemotherapy.* 32(1):6. I.F.: 1.661

37. Herrero-Cortina B, Oliveira A, Polverino E, Gómez-Trullén EM, Torres A, Marques A. **Feasibility of computerized adventitious respiratory sounds to assess the effects of airway clearance techniques in patients with bronchiectasis.** *Physiotherapy Theory and Practice.* 36(11):1245-1255. I.F.: 1.624

38. Hernandez-Gonzalez F; Prieto-González S; Brito-Zeron P; Cuerpo S; Sanchez M; Ramirez J; Agustí C; Lucena CM; Paradela M; Grafia I; Espinosa G; Sellares J. **Impact of a systematic evaluation of connective tissue disease on diagnosis approach in patients with interstitial lung diseases.** *Medicine.* 99(4):e18589. I.F.: 1.552

Review / I.F.: 134.189

1. Colombo S; Palomeque A; Li Bassi G. **The zero-VAP sophistry and controversies surrounding prevention of ventilator-associated pneumonia**. *Intensive Care Medicine.* 46(2):368-371. I.F.: 17.679

2. Luyt CE; Bouadma L; Morris AC; Dhanani JA; Kollef M; Lipman J; Martin-Loeches I; Nseir S; Ranzani OT; Roquilly A; Schmidt M; Torres A; Timsit JF. **Pulmonary infections complicating ARDS.** *Intensive Care Medicine.* 46(12):2168-2183. I.F.: 17.679

3. Torres A, Loeches IM, Sligl W, Lee N. **Severe flu management: a point of view.** *Intensive Care Medicine.* 46(2):153-162. I.F.: 17.679

4. Pletz MW, Blasi F, Chalmers JD, Dela Cruz CS, Feldman C, Luna CM, Ramirez JA, Shindo Y, Stolz D, Torres A, Webb B, Welte T, Wunderink R, Aliberti S. **International perspective on the new 2019 ATS/IDSA CAP guideline - a critical appraisal by a global expert panel.** *Chest.* 158(5):1912-1918. I.F.: 8.308

5. Martin-Loeches I, Dickson R, Torres A, Hanberger H, Lipman J, Antonelli M, de Pascale G, Bozza F, Vincent JL, Murthy S, Bauer M, Marshall J, Cilloniz C, Bos LD. **The importance of airway and lung microbiome in the critically ill.** *Critical Care.* 24(1):537. I.F.: 6.407

6. Cho HJ, Heinsar S, Jeong IS, Shekar K, Li Bassi G, Jung JS, Suen JY, Fraser JF. **ECMO use in COVID-19: lessons from past respiratory virus outbreaks-a narrative review.** *Critical Care.* 24(1):301. I.F.: 6.407

7. Cillóniz C, Dominedò C, Pericàs JM, Rodriguez-Hurtado D, Torres A. **Community-acquired pneumonia in critically ill very old patients: a growing problem.** *European Respiratory Review : An Official Journal of The European Respiratory Society.* 29(155):190126. I.F.: 6.220

8. Vallecoccia MS; Dominedò C; Cutuli SL; Martin-Loeches I; Torres A; De Pascale G. **Is ventilated hospital-acquired pneumonia a worse entity than ventilator-associated pneumonia?** *European Respiratory Review : An Official Journal of the European Respiratory Society.* 29(157):200023. I.F.: 6.220

9. Fernández-Barat L; López-Aladid R; Torres A. **Reconsidering ventilator-associated pneumonia from a new dimension of the lung microbiome.** *Ebiomedicine.* 60(102995). I.F.: 5.736

10. Mokhlesi, Babak; Masa, Juan Fernando; Afshar, Majid; Pacheco, Virginia Almadana; Berlowitz, David J; Borel, Jean-Christian; Budweiser, Stephan; Carrillo, Andres; Castro-Anon, Olalla; Ferrer, Miquel; Gagnadoux, Frederic; Golpe, Rafael; Hart, Nicholas; Howard, Mark E; Murphy, Patrick B; Palm, Andreas; de Llano, Luis A Perez; Piper, Amanda J; Pepin, Jean Louis; Priou, Pascaline; Sanchez-Gomez, Jesus F; Soghier, Israa; Kakazu, Maximiliano Tamae; Wilson, Kevin C.

The Effect of Hospital Discharge with Empiric Noninvasive Ventilation on Mortality in Hospitalized Patients with Obesity Hypoventilation Syndrome An Individual Patient Data Meta-Analysis. *Annals of the American Thoracic Society.* 17(5):627-637. I.F.: 4.836

11. Dominedò C, Ceccato A, Torres A. **Ventilator-associated pneumonia: new principles guiding empiric antibiotic therapy.** *Current Opinion In Infectious Diseases.* 33(2):182-188. I.F.: 4.577

12. Martin-Loeches I, Metersky M, Kalil A, Pezzani MD, Torres A. **Strategies for implementation of a multidisplinary approach to the treatment of nosocomial infections in critically ill patients.** *Expert Review of Anti-Infective Therapy.* :1-9. I.F.: 3.767

13. Bastida, Carla; Soy, Dolors; Torres, Antoni. **The safety of antimicrobials for the treatment of community-acquired pneumonia.** *Expert Opinion on Drug Safety.* 19(5):577-587. I.F.: 3.383

14. Chumbita M, Cillóniz C, Puerta-Alcalde P, Moreno-García E, Sanjuan G, Garcia-Pouton N, Soriano A, Torres A, Garcia-Vidal C . **Can Artificial Intelligence Improve the Management of Pneumonia.** *Journal of Clinical Medicine.* 9(1):248. I.F.: 3.303

15. Abu-Raya B, Migliori GB, O'Ryan M, Edwards K, Torres A, Alffenaar JW, Märtson AG, Centis R, D'Ambrosio L, Flanagan K, Hung I, Lauretani F, Leung CC, Leuridan E, Maertens K, Maggio MG, Nadel S, Hens N, Niesters H, Osterhaus A, Pontali E, Principi N, Rossato Silva D, Omer S, Spanevello A, Sverzellati N, Tan T, Torres-Torreti JP, Visca D, Esposito S. **Coronavirus Disease-19: An Interim Evidence Synthesis of the World Association for Infectious Diseases and Immunological Disorders (Waidid).** *Frontiers Of Medicine.* 7:572485. I.F.: 3.297

16. Barbagelata E, Cillóniz C, Dominedò C, Torres A, Nicolini A, Solidoro P. **Gender differences in Community-acquired Pneumonia. Minerva Medica.** 111(2):153-165. I.F.: 3.031

17. Crisafulli E, Manco A, Torres A . **How may we improve clinical outcomes for patients hospitalized with acute exacerbations of chronic obstructive pulmonary disease? A narrative review about possible therapeutic and preventive strategies.** *Expert Review of Ophthalmology.* 14(5):493-500. I.F.: 2.725

18. Cilloniz C, Liapikou A, Torres A . **Advances in molecular diagnostic tests for pneumonia.** *Current Opinion in Pulmonary Medicine.* 26(3):241-248. I.F.: 2.630

19. O' Sullivan S; Torres A; Rodriguez A; Martin-Loeches I. **Influenza management with new therapies.** *Current Opinion in Pulmonary Medicine.* 26(3):215-221. I.F.: 2.630

20. Ferrer M, Torres A. **Noninvasive Ventilation and High-Flow Nasal Therapy Administration in Chronic Obstructive Pulmonary Disease Exacerbations.** *Seminars In Respiratory and Critical Care Medicine.* 41(6):786-797. I.F.: 2.028

21. Crisafulli E, Manco A, Ferrer M, Huerta A, Micheletto C, Girelli D, Clini E, Torres A . **Pneumonic versus Nonpneumonic Exacerbations of Chronic Obstructive Pulmonary Disease**. *Seminars in Respiratory and Critical Care Medicine.* 41(6):817-829. I.F.: 2.028

22. Pablo Espana, Pedro; Uranga, Ane; Cilloniz, Catia; Torres, Antoni. **Q Fever (Coxiella Burnetii).** *Seminars in Respiratory and Critical Care Medicine.* 41(4):509-521. I.F.: 2.028

23. Battaglini D, Robba C, Caiffa S, Ball L, Brunetti I, Loconte M, Giacobbe DR, Vena A, Patroniti N, Bassetti M, Torres A, Rocco PR, Pelosi P . **Chest physiotherapy: An important adjuvant in critically ill mechanically ventilated patients with COVID-19.** *Respiratory Physiology & Neurobiology.* 282(103529). I.F.: 1.591

Letters / I.F.: 58.288

1. Halpin DMG; Faner R; Sibila O; Badia JR; Agusti A. **Do chronic respiratory diseases or their treatment affect the risk of SARS-CoV-2 infection?** *Lancet Respiratory Medicine.* 8(5):436-438. I.F.: 25.094

2. Casanova GS; Amaro R; Soler N; Sánchez M; Badía JR; Barberà JA; Agustí A. **An imported case of e-cigarette or vaping associated lung injury in Barcelona.** *European Respiratory Journal.* 55(2):1902076. I.F.: 12.339

3. Torres A, Cillóniz C . **Are macrolides as effective as fluoroquinolones in Legionella pneumonia?: YES, but...** *Clinical Infectious Diseases.* . I.F.: 8.313

4. Cilloniz C, Torres A . **Reply to Dr.** *Journal of Infectious Diseases.* 222(2):334-335. I.F.: 5.022

5. Bermejo-Martin JF, Almansa R, Menéndez R, Mendez R, Kelvin DJ, Torres A . **Lymphopenic community acquired pneumonia as signature of severe COVID-19 infection**. *Journal Of Infection.* 80(5):e23-e24. I.F.: 4.842

6. See Hoe LE, Suen JY, Li Bassi G, McGiffin DC, Fraser JF . **Hypothermic Ex Vivo Perfusion: Protecting the Donor Heart and the Recipient.** *Asaio Journal.* 66(7):e99. I.F.: 2.678

Editorial / I.F.: 35.122

1. Torres A, Martin-Loeches I. **Invasive Pulmonary Aspergillosis in Ventilator-Associated Pneumonia: The Hidden Enemy?** *American Journal of Respiratory and Critical Care Medicine.* 202(8):1071-1073. I.F.: 17.452

2. Fernández-Barat L, López-Aladid R, Torres A . **The value of serology testing to manage SARS-CoV-2 infections**. *European Respiratory Journal.* 56(2):2002411. I.F.: 12.339

3. Ceccato A, Torres A . **The War against Bad Bugs: Fighting the Resistance.** *Journal of Clinical Medicine.* 9(8):2563. I.F.: 3.303

4. Torres A, Ferrer M. **COPD in the Intensive Care Unit.** *Seminars in Respiratory and Critical Care Medicine.* 41(6):785. I.F.: 2.028

Clinical Guidelines / I.F.: 24.442

1. Ramirez JA, Musher DM, Evans SE, Dela Cruz C, Crothers KA, Hage CA, Aliberti S, Anzueto A, Arancibia F, Arnold F, Azoulay E, Blasi F, Bordon J, Burdette S, Cao B, Cavallazzi R, Chalmers J, Charles P, Chastre J, Claessens YE, Dean N, Duval X, Fartoukh M, Feldman C, File T, Froes F, Furmanek S, Gnoni M, Lopardo G, Luna C, Maruyama T, Menendez R, Metersky M, Mildvan D, Mortensen E, Niederman MS, Pletz M, Rello J, Restrepo MI, Shindo Y, Torres A, Waterer G, Webb B, Welte T, Witzenrath M, Wunderink R . **"Management of Community-Acquired Pneumonia in Immunocompromised**

Adults: A Consensus Statement Regarding Initial Strategies". *Chest.* 158(5):1896-1911. I.F.: 8.308

2. Bai C; Chotirmall SH; Rello J; Alba GA; Ginns LC; Krishnan JA; Rogers R; Bendstrup E; Burgel PR; Chalmers JD; Chua A; Crothers KA; Duggal A; Kim YW; Laffey JG; Luna CM; Niederman MS; Raghu G; Ramirez JA; Riera J; Roca O; Tamae-Kakazu M; Torres A; Watkins RR; Barrecheguren M; Belliato M; Chami HA; Chen R; Cortes-Puentes GA; Delacruz C; Hayes MM; Heunks LMA; Holets SR; Hough CL; Jagpal S; Jeon K; Johkoh T; Lee MM; Liebler J; McElvaney GN. **Updated guidance on the management of COVID-19: From an american thoracic society/european respiratory society coordinated international task force (29 July 2020).** *European Respiratory Review : An Official Journal of the European Respiratory Society.* 29(157):200287. I.F.: 6.220

3. Torres A; Barberán J; Ceccato A; Martin-Loeches I; Ferrer M; Menéndez R; Rigau D. Hospital-Acquired Pneumonia. **Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) Guidelines. 2019 Update.** *Archivos de Bronconeumología.* 56 Suppl 1:11-19. I.F.: 4.957

4. Menéndez R; Cilloniz C; España PP; Almirall J; Uranga A; Méndez R; Rigau D; Torres A. Community-Acquired Pneumonia. **Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) Guidelines. 2020 Update.** *Archivos de Bronconeumología.* 56 Suppl 1:1-10. I.F.: 4.957

Consortium Publications / I.F.: 161.914

1. Chalmers JD, Haworth CS, Metersky ML, Loebinger MR, Blasi F, Sibila O, O'Donnell AE, Sullivan EJ, Mange KC, Fernandez C, Zou J, Daley CL, WILLOW Investigators. **Phase 2 trial of the DPP-1 inhibitor brensocatib in bronchiectasis**. *New England Journal of Medicine.* 383(22):2127-2137. I.F.: 74.699

2. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

3. Guidet B, de Lange DW, Boumendil A, Leaver S, Watson X, Boulanger C, Szczeklik W, Artigas A, Morandi A, Andersen F, Zafeiridis T, Jung C, Moreno R, Walther S, Oeyen S, Schefold JC, Cecconi M, Marsh B, Joannidis M, Nalapko Y, Elhadi M, Fjølner J, Flaatten H, VIP2 study group. **The contribution of frailty, cognition, activity of daily life and comorbidities on outcome in acutely admitted patients over 80 years in European ICUs: the VIP2 study.** *Intensive Care Medicine.* 46(1):57-69. I.F.: 17.679

4. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

5. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

6. Plantinga NL, Wittekamp BHJ, Brun-Buisson C, Bonten MJM, R-GNOSIS ICU study group. **The effects of topical antibiotics on eradication and acquisition of third-generation cephalosporin and carbapenem-resistant Gram-negative bacteria in ICU patients; a post hoc analysis from a multicentre cluster-randomized trial.** *Clinical Microbiology and Infection.* 26(4):485-491. I.F.: 7.117

7. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

8. Villafuerte D, Aliberti S, Soni NJ, Faverio P, Marcos PJ, Wunderink RG, Rodriguez A, Sibila O, Sanz F, Martin-Loeches I, Menzella F, Reyes LF, Jankovic M, Spielmanns M, Restrepo MI, GLIMP Investigators. **Prevalence and risk factors for Enterobacteriaceae in patients hospitalized with community-acquired pneumonia.** *Respirology.* 25(5):543-551. I.F.: 4.880

9. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

GRANTS FOR RESEARCH IN PROGRESS

Cillóniz C, Soler N. **Fenotipos relacionados con la evolución clínica a corto y largo plazo en la neumonía adquirida en la comunidad.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00207
Duration: 01/01/2020-31/12/2022

Ferrer M. **Driving Pressure e Inflamación en el Síndrome de Distress Respiratorio Agudo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00974
Duration: 01/01/2019-31/12/2021

Soler N. **Dinámica del microbioma pulmonar en la agudización neumónica y no neumónica de la EPOC y uso como potencial diana terapéutica: estudio discriminativo con TAC torácica de baja radiación.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00803
Duration: 01/01/2017-30/06/2021

Torres A, Fernández-Barat L. **Identification of epitopes and isolation of IgG anti-COVID-19 to produce monoclonal antibodies for treatment.**
Sponsored by: Generalitat de Catalunya. GENCAT_DGRIS_COVID19
Duration: 01/01/2020-31/12/2020

Torres A. **Fisiopatologia i tractament de les malalties respiratòries.**

Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00787
Duration: 01/01/2017-30/09/2021

Torres A. **Pulmonary and cardiac injury caused by severe pneumococcal pneumonia: appraisal of the benefits of corticosteroids and macrolides.**
Sponsored by: Fundació La Marató de TV3.
Infeccioses_18
Duration: 29/03/2019-28/03/2022

Torres A. **Bacterial lung chassis for treating human lung infectious diseases.**
Sponsored by: Fundació Bancaria "La Caixa".
HealthRes18-00058
Duration: 15/09/2019-14/09/2022

Torres A, Fernández-Barat L. I**mportancia de las biopelículas de Pseudomonas aeruginosa en las agudizaciones en pacientes con bronquiectasias con y sin enfermedad pulmonar obstructiva crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00145
Duration: 01/01/2019-31/12/2021

Torres A. **Academic Partners of COMBACTE.**
Sponsored by: European Commission.
CE_IMI12_8th_2stg
Duration: 01/01/2013-28/02/2021

Torres A. **Combatting Bacterial Resistance in Europe - Molecules Against Gram Negative Infections.**
Sponsored by: European Commission.
CE_IMI13_11th_2stg
Duration: 01/01/2015-31/12/2021

Torres A. **Host-targeted Approaches for the Prevention and the treatment of Hospital-Acquired Pneumonia.**
Sponsored by: European Commission.
CE_H2020-SC1_2019_2s
Duration: 01/01/2020-31/12/2024

Torres A. **Risk factors, personalized prognosis and one-year follow-up of patients admitted to Spanish Intensive Care Units infected by the COVID19 virus: CIBERESUCICOVID.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). COV20/00110
Duration: 01/05/2020-31/12/2021

DOCTORAL THESES

Soy D, Gascon J. **Optimising treatment with benznidazole in adults with chronic Chagas disease: lessons from population pharmacokinetics and safety monitoring.** PhD student: Edelweiss Aldasoro Irastorza

Soy D, Lens S. **Tractament de l'hepatitis C crònica amb agents antivirals directes en pacients majors de 65 anys.**
PhD student: Patricia Amoros Reboredo

Torres A, Ferrer M. **Neumonía Nosocomial Adquirida en la Unidad de Cuidados Intensivos: evaluación de predictores de desenlaces adversos.**
PhD student: Elbio Mariano Esperatti

ANNUAL
SCIENTIFIC REPORT
2020

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM



3

© Raquel Carrasco Romo

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

3.1 **Hepatic oncology (BCLC)**
Jordi Bruix

3.2 **Gastrointestinal and pancreatic oncology**
Antoni Castells

3.3 **Genetic predisposition to gastrointestinal cancer**
Sergi Castellví

3.4 **Neuronal control of metabolism (NeuCoMe)**
Marc Claret

3.5 **Inflammation and liver disease**
Joan Clària

3.6 **Translational control in liver disease and cancer**
Mercedes Fernández Lobato

3.7 **Mitochondrial regulation of cell death and steatohepatitis**
José Carlos Fernández-Checa

3.8 **Gene therapy and cancer**
Cristina Fillat

3.9 **Liver transplantation and graft viability**
Constantino Fondevila

3.10 **Viral toxic and metabolic hepatopathies**
Xavi Forns

3.11 **Regulation of liver microcirculation in cirrhosis and hepatic vascular diseases**
Joan Carles García Pagán

3.12 **Chronic liver diseases molecular mechanisms and clinical consequences**
Pere Ginès

3.13 **Liver vascular biology**
Jordi Gràcia

3.14 **Fetal and perinatal medicine**
Eduard Gratacós

3.15 **Metabolic bone disease**
Núria Guañabens

3.16 **Endocrine disorders: crosstalk between molecular, metabolic and therapeutic determinants**
Felicia Hanzu

3.17 **Translational research group in new therapeutic and diagnostic strategies in liver diseases**
Wladimiro Jiménez

3.18 **Translational research in hepatic oncology**
Josep Maria Llovet

3.19 **Gynecological endocrinology and human reproduction**
Mª Angels Martinez

3.20 **Hepatocellular signaling and cancer**
Albert Morales

3.21 **Pathogenesis and prevention of diabetes**
Anna Novials

3.22 **Inflammatory bowel disease**
Julià Panés

3.23 **Cholestasis**
Albert Parés

3.24 **Protective strategies against hepatic ischemia reperfusion injury**
Carmen Peralta

3.25 **Inherited metabolic diseases**
Antonia Ribes

3.26 **Liver cell plasticity and tissue repair**
Pau Sancho

3.27 **Pathogenesis and treatment of autoimmunity**
Pere Santamaria

3.28 **Translational research in diabetes lipids and obesity**
Josep Vidal

3.1 Hepatic oncology (BCLC)

LOCATION
CEK building, floor 3
HCB building, stair 11, floor 4

KEYWORDS
1. **Hepatocellular carcinoma**
2. **Cholangiocarcinoma**
3. **Rare hepatic tumors**
4. **Biomarkers**
5. **Outcome research**

RELATED DISEASES
1. **Chronic liver disease**

GROUP INVOLVED IN
AGAUR_SGR17: 01465
CIBEREHD
ERN

AWARDS
Top 1% most cited researcher globally
Institution: Clarivate Analytics
Awardee/s: Jordi Bruix

Original publications

TOTAL	16
IF	111,38
Mean IF	6,96
Q1	69%
D1	19%
MA	44%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Jordi Bruix (HCB)
T. 93 227 98 03
jbruix@clinic.cat

RESEARCHERS
Mari Carmen Ayuso (HCB)
Loreto Boix (CIBER)
Mª Alba Díaz (HCB)
Joana Ferrer (HCB)
Alejandro Forner (HCB)
Josep Fuster (HCB)
María Reig (HCB)
Ramon Vilana (HCB)

PRE-DOCTORAL RESEARCHERS
Josep Corominas (FCRB)
Sergio G. Muñoz (FCRB)
Marco Sanduzzi-Zamparelli (FCRB)

TECHNICIANS
Cristina Millan (FCRB)
Esther Samper (FCRB)
Victor Sapena (CIBER)

NURSING STAFF
Marta Campos (CIBER)
Gemma Iserte (HCB)
Neus Llarch (HCB)

ADMINISTRATIVE STAFF
Nuria Pérez Pons (FCRB)

PROBLEM

Liver cancer normally affects patients who already have chronic liver disease. Among this risk population, the development of liver cancer is the leading cause of death. This group studies the epidemiological, molecular, diagnostic and therapeutic aspects of this disease.

In our region, liver cancer represents 10 new cases per 100,000 inhabitants per year whereas in global terms, this type of tumour is the second leading cause of death by cancer.

Depending on the approach area (risk factors, diagnosis, treatment), it is necessary to involve a combination of the diverse specialists who form part of the group (hepatologists, surgeons, radiologists, pathologists, oncologists and nurses) and implement the technologies that fall within their expertise.

APPROACH

The group is developing tools to predict which patients may develop cancer and to improve early detection plans, as well as investigating the mechanisms of action of new treatments and their efficiency in reducing the risk of recurrence after cancer treatment and in increasing the patient's survival rate at advanced stages. All of the above is combined with education designed to empower patients.

The group leads international studies that involve centres from all over the world. This makes it possible to generate evidence, within the contexts of research and real life alike.

IMPACT

The group has established non-invasive diagnostic criteria, but it is necessary to improve their sensitivity to tumours of less than 2 cm in size. Imaging tools must be developed to establish the molecular profile of the tumours and their prognosis, without the need for biopsies. And educational tools are needed to ensure that patients are fully integrated into the entire process.

The group has led national and international studies to evaluate new treatment options and define the best candidates. It is necessary to continue investigating new agents that can reduce the risk of postoperative recurrence and new alternatives for increasing patient survival at advanced stages, by conducting clinical trials.

RESEARCH LINES

- Epidemiology and risk factors for liver cancer
- Diagnosis and staging
- Surgery for liver cancer
- Locoregional therapy
- Adjuvant therapy
- Systemic therapy
- Intrahepatic colangiocarcinoma
- Rare hepatic tumors
- Research in nursing

PUBLICATIONS

Originals / I.F.: 111.377

1. Rodríguez-Tajes S, Pocurull A, Castillo J, Casanova G, Vega L, Lens S, Mariño Z, Londoño MC, Forner A, Torres F, Forns X. **Hepatitis C-related cirrhosis will be a marginal cause of hospital admissions in the near future.** *Journal of Hepatology.* 73(6):1360-1367. I.F.: 20.582

2. Montal R, Sia D, Montironi C, Leow WQ, Esteban-Fabró R, Pinyol R, Torres-Martin M, Bassaganyas L, Moeini A, Peix J, Cabellos L, Maeda M, Villacorta-Martin C, Tabrizian P, Rodriguez-Carunchio L, Castellano G, Sempoux C, Minguez B, Pawlik TM, Labgaa I, Roberts LR, Sole M, Fiel MI, Thung S, Fuster J, Roayaie S, Villanueva A, Schwartz M, Llovet JM. **Molecular classification and therapeutic targets in extrahepatic cholangiocarcinoma.** *Journal Of Hepatology.* 73(2):315-327. I.F.: 20.582

3. Fernández-Varo G, Perramón M, Carvajal S, Oró D, Casals E, Boix L, Oller L, Macías-Muñoz L, Marfà S, Casals G, Morales-Ruiz M, Casado P, Cutillas PR, Bruix J, Navasa M, Fuster J, Garcia-Valdecasas JC, Pavel MC, Puntes V, Jiménez W. **Bespoken nanoceria: A new effective treatment in experimental hepatocellular carcinoma.** *Hepatology.* 72(4):1267-1282. I.F.: 14.679

4. Capozzi N, Ordás I, Fernandez-Clotet A, Castro-Poceiro J, Rodríguez S, Alfaro I, Sapena V, Masamunt MC, Ricart E, Panés J, Rimola J. **Validation of the simplified Magnetic Resonance Index of Activity (sMARIA) without gadolinium-enhanced sequences for Crohn's disease.** *Journal Of Crohns & Colitis.* 14(8):1074-1081. I.F.: 8.658

5. Cucarull B, Tutusaus A, Subías M, Stefanovic M, Hernáez-Alsina T, Boix L, Reig M, García de Frutos P, Marí M, Colell A, Bruix J, Morales A. **Regorafenib Alteration of the BCL-xL/MCL-1 Ratio Provides a Therapeutic Opportunity for BH3-Mimetics in Hepatocellular Carcinoma Models**. *Cancers.* 12(2):332. I.F.: 6.126

6. Díaz-González Á, Sanduzzi-Zamparelli M, da Fonseca LG, Di Costanzo GG, Alves R, Iavarone M, Leal C, Sacco R, Matilla AM, Hernández-Guerra M, Aballay Soteras G, Wörns MA, Pinter M, Varela M, Ladekarl M, Chagas AL, Mínguez B, Arenas JI, Granito A, Sánchez-Torrijos Y, Rojas Á, Rodríguez de Lope C, Alvares-da-Silva MR, Pascual S, Rimassa L, Lledó JL, Huertas C, Sangro B, Giannini EG, Delgado M, Vergara M, Perelló C, Lue A, Sala M, Gallego A, Coll S, Hernáez T, Piñero F, Pereira G, França A, Marín J, Anders M, Mello V, Lozano M, Nault JC, Menéndez J, García Juárez I, Bruix J, Reig M. **International and multicenter real-world study of sorafenib-treated patients with hepatocellular carcinoma under dialysis.** *Liver International.* 40(6):1467-1476. I.F.: 5.175

7. Díaz-González Á; Sapena V; Boix L; Brunet M; Torres F; LLarch N; Samper E; Millán O; Corominas J; Iserte G; Sanduzzi-Zamparelli M; da Fonseca LG; Darnell A; Belmonte E; Forner A; Ayuso C; Bruix J; Reig M. **Pharmacokinetics and pharmacogenetics of sorafenib in patients with hepatocellular carcinoma: Implications for combination trials.** *Liver International.* 40(10):2476-2488. I.F.: 5.175

8. Soto M, Reviejo M, Al-Abdulla R, Romero MR, Macias RIR, Boix L, Bruix J, Serrano MA, Marin JJG. **Relationship between changes in the exon-recognition machinery and SLC22A1 alternative splicing in hepatocellular carcinoma.** *Biochimica et Biophysica Acta-Molecular Basis Of Disease.* 1866(5):165687. I.F.: 4.352

9. Ruiz S; Amor AJ; Pané A; Molina-Andujar A; Montagud-Marrahi E; Ventura-Aguiar P; Ferrer-Fàbrega J; Esmatjes E. **Cardiovascular risk factors and cardiovascular disease in patients with type 1 diabetes and end-stage renal disease candidates for kidney-pancreas transplantation: Trends from 1999 to 2017.** *Diabetes Research and Clinical Practice.* 163:108135. I.F.: 4.234

10. Rimola J; Darnell A; Belmonte E; Sapena V; Caparroz C; Llarch N; Reig M; Forner A; Bruix J; Ayuso C. **Does transient arterial-phase respiratory-motion-related artifact impact on diagnostic performance? An intra-patient comparison of extracellular gadolinium versus gadoxetic acid.** *European Radiology.* 30(12):6694-6701. I.F.: 4.101

11. Rimola J, Forner A, Sapena V, Llarch N, Darnell A, Díaz A, García-Criado A, Bianchi L, Vilana R, Díaz-González Á, Ayuso C, Bruix J, Reig M. **Performance of gadoxetic acid MRI and diffusion-weighted imaging for the diagnosis of early recurrence of hepatocellular carcinoma.** *European Radiology.* 30(1):186-194. I.F.: 4.101

12. Sanduzzi-Zamparelli M, Rimola J, Montironi C, Nunes V, Alves VAF, Sapena V, da Fonseca LG, Forner A, Carrilho FJ, Díaz A, Fuster C, Ferrer J, Fuster J, Ayuso C, Solé M, Bruix J, Reig M, Epithelioid Hemangioendothelioma International Network (EHIN). **Hepatic epithelioid hemangioendothelioma: An international multicenter study.** *Digestive and Liver Disease.* 52(9):1041-1046. I.F.: 3.570

13. Díaz-González Á; Vilana R; Bianchi L; García-Criado Á; Rimola J; Rodríguez de Lope C; Ferrer J; Ayuso C; Da Fonseca L; Reig M; Forner A. **Thermal Ablation for Intrahepatic Cholangiocarcinoma in Cirrhosis: Safety and Efficacy in Non-Surgical Patients.** *Journal of Vascular and Interventional Radiology.* 31(5):710-719. I.F.: 3.037

14. Riquelme F, Muñoz C, Ausania F, Hessheimer AJ, Torres F, Calatayud D, Sandomenico R, García Pérez R, Ferrer J, Fuster J, García-Valdecasas JC, Fondevila C. **Laparoscopic versus open hemihepatectomy: comprehensive comparison of complications and costs at 90 days using a propensity method.** *Updates in Surgery.* 72(4):1041-1051. I.F.: 2.587

15. Ausania F, Al Shwely F, Farguell J, Beltrán J, Calatayud D, Sánchez-Cabús S, Ferrer J, Rull R, Fuster J, García-Valdecasas JC, Martínez-Palli G, Fondevila C. **Factors Associated with Prolonged Recipient Hepatectomy Time During Liver Transplantation: A Single-Centre Experience.** *World Journal of Surgery.* 44(10):3486-3490. I.F.: 2.234

16. Molina V, Ferrer-Fábrega J, Sampson-Dávila J, Díaz A, Ayuso C, Forner A, Fondevila C, García-Valdecasas JC, Bruix J, Fuster J. **Intention-to-treat curative liver resection in patients with "very early" intrahepatic cholangiocarcinoma.** Langenbecks Archives of Surgery. 405(7):967-975. I.F.: 2.184

Review / I.F.: 72.075

1. Banales JM; Marin JJG; Lamarca A; Rodrigues PM; Khan SA; Roberts LR; Cardinale V; Carpino G; Andersen JB; Braconi C; Calvisi DF; Perugorria MJ; Fabris L; Boulter L; Macias RIR; Gaudio E; Alvaro D; Gradilone SA; Strazzabosco M; Marzioni M; Coulouarn C; Fouassier L; Raggi C; Invernizzi P; Mertens JC; Moncsek A; Rizvi S; Heimbach J; Koerkamp BG; Bruix J; Forner A; Bridgewater J; Valle JW; Gores GJ. **Cholangiocarcinoma 2020: the next horizon in mechanisms and management.** *Nature Reviews Gastroenterology & Hepatology.* 17(9):557-588. I.F.: 29.869

2. Sangro, Bruno; Chan, Stephen L; Meyer, Tim; Reig, Maria; El-Khoueiry, Anthony; Galle, Peter R. **Diagnosis and management of toxicities of immune checkpoint inhibitors in hepatocellular carcinoma.** *Journal of Hepatology.* 72(2):320-341. I.F.: 20.582

3. Grothey A, Blay JY, Pavlakis N, Yoshino T, Bruix J. **Evolving role of regorafenib for the treatment of advanced cancers.** *Cancer Treatment Reviews.* 86:101993. I.F.: 8.885

4. Londoño MC; Reig M. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers.* 12(11):1-22. I.F.: 6.126

5. Da Fonseca LG; Reig M; Bruix J. **Tyrosine Kinase Inhibitors and Hepatocellular Carcinoma.** *Clinics in Liver Disease.* 24(4):719-737. I.F.: 4.623

6. Alqahtani S; Sanai F; Alolayan A; Abaalkhail F; Alsuhaibani H; Hassanain M; Alhazzani W; Alsuhaibani A; Algarni A; Forner A; Finn R; Al-Hamoudi W. **Saudi association for the study of liver diseases and transplantation practice guidelines on the diagnosis and management of hepatocellular carcinoma.** *Saudi Journal of Gastroenterology.* 26(7):S1-S40. I.F.: 1.990

Letters / I.F.: 32.667

1. Sapena V, Rios J, Torres F, Mariño Z, Forns X, Bruix J, Reig M. **Reply to: "Time association between hepatitis C therapy and hepatocellular carcinoma emergence in cirrhosis: Relevance of non-characterized nodules - A response".** *Journal of Hepatology.* 72(5):1036-1037. I.F.: 20.582

2. Sanduzzi-Zamparelli M, Sapena V, Bruix J, Reig M. **Letter: are sorafenib-related adverse events associated with prolonged survival? Authors' reply.** *Alimentary Pharmacology & Therapeutics.* 51(1):192. I.F.: 7.515

3. Guarner P; García R; Al Shwely F; Pérez-Serrano C; Rodríguez S; Torroella A; Ferrer J; Fondevila C; Fuster J; García-Valdecasas JC. **Unusual Allogeneic Retrohepatic Vena Cava Graft for Renoportal Anastomosis in Orthotopic Liver Transplantation.** *Liver Transplantation.* 26(8):1056-1059. I.F.: 4.570

Editorial / I.F.: 69.859

1. Ferrer-Fàbrega J; Forner A. **Is downstaging a reliable strategy for expanding criteria for liver transplantation in hepatocellular carcinoma?** *Lancet Oncology.* 21(7):867-869. I.F.: 33.752

2. Calvaruso V; Bruix J. **Towards personalized screening for hepatocellular carcinoma: still not there.** *Journal of Hepatology.* 73(6):1319-1321. I.F.: 20.582

3. Da Fonseca, Leonardo G; Forner, Alejandro. **Increasing alternatives in systemic treatment for hepatocellular carcinoma: Will algorithms be understandable?** *Liver International.* 40(8):1829-1831. I.F.: 5.175

4. Sun J; Aghemo A; Forner A; Valenti L. **COVID-19 and liver disease.** *Liver International.* 40(6):1278-1281. I.F.: 5.175

5. Da Fonseca LG; Forner A. **Adherence and quality are key for a beneficial HCC surveillance.** *Liver International.* 40(4):751-753. I.F.: 5.17

GRANTS FOR RESEARCH IN PROGRESS

Bruix J, Boix L. **La inhibición de miR122 como evento precoz en el desarrollo de carcinoma hepatocelular en pacientes infectados por el virus de la hepatitis C. Papel de miR122 en el sistema inmunitario.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00768
Duration: 01/01/2019-31/12/2021

Bruix J. **Molecular regulation of the progression from hepatic steatosis to cirrhosis and hepatocellular carcinoma: Role and therapeutic potential of CPEB proteins.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_GrupoEstable15
Duration: 01/09/2015-31/12/2020

Díaz-Lorca MA, Colmenero J. **Caracterización molecular e histológicas del daño aloinmune contra el injerto tras el trasplante hepático: identificación de factores predictivos de mal pronóstico y dianas terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01125
Duration: 01/01/2019-31/12/2021

Ferrer-Fàbrega J. **Optimización de los injertos en el trasplante de páncreas: Análisis de los factores histo-morfológicos y funcionales de los órganos descartados en un estudio multicéntrico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00161
Duration: 01/01/2019-31/12/2021

Forner A. **Rendimiento de la RM con ácido gadoxético para el diagnóstico y estadiaje del carcinoma hepatocelular: Correlación radiológica-patológica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00542
Duration: 01/01/2019-31/12/2021

Reig M. **Evaluación clínica propsectiva del perfil genético-inmuno / inflamatorio en el tratamiento del carcinoma hepatocelular con sorafenib para predecir tolerancia y supervivencia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00145
Duration: 23/05/2016-30/11/2020

Reig M. I**mportancia del inflamasoma en la sensibilidad o resistencia a inhibidores tirosina quisana en pacientes con cáncer de hígado.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00358
Duration: 01/01/2019-31/12/2021

3.2 Gastrointestinal and pancreatic oncology

LOCATION
CEK building, floor 4

KEYWORDS
1. **Colorectal cancer**
2. **Pancreatic cancer**
3. **Genetics**
4. **Inherited disorders**

RELATED DISEASES
1. **Colorectal cancer**
2. **Pancreatic cancer**
3. **Gastric cancer**

GROUP INVOLVED IN
AGAUR_SGR17: 01035, 00653
CIBEREHD
CIBERER

Original publications

TOTAL	50
IF	463,40
Mean IF	9,27
Q1	80%
D1	40%
MA	34%

IF = Impact Factor
MA = Main authorship(last or corresponding author)



GROUP LEADER
Antoni Castells (HCB)
T. 93 227 57 03
castells@clinic.cat

RESEARCHERS
Juan Ramon Ayuso (HCB)
Francesc Balaguer (HCB)
Jordi Camps Polo (IDIBAPS)
Henry Nelson Cordova (HCB)
José Ignacio Erizalde (HCB)
Gloria Fernández Esparrach (HCB)
Mª Àngels Ginès (HCB)
Meritxell Gironella (CIBER)
Antonio Maria Lacy (HCB)
Maria Pellisé (HCB)
Esther Sánchez Tilló (IDIBAPS)
Eva Cristina Vaquero (HCB)
Oscar Vidal (HCB)

POST-DOCTORAL RESEARCHERS
Josep Maria Augé (HCB)
Sabela Carballal (HCB)
Claudia Galofre (CIBER)
Maria Marcuello (CIBER)
Liseth Rivero (HCB)
Oriol Sendino (HCB)
Margalida Torrens (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Isis Karina Araujo (HCB)
Maria de los Angeles Daca (IDIBAPS)
Elena Fernández Castañer (IDIBAPS)
Javier Gómez Matas (FCRB)
Gerhard Jung (IDIBAPS)
Sara Lahoz (IDIBAPS)
Oswaldo Ortiz (HCB)
Ariadna Sánchez García (HCB)
Diana Zaffalon (FCRB)

TECHNICIANS
Nereida Aguilar (CIBER)
Manuel Domínguez (FCRB)
Lorena Moreno (HCB-FCRB)
Carolina Parra (CIBER)
Adriana Rodríguez Gonzalo (CIBER)

NURSING STAFF
Mireia Díaz Centeno (HCB)
Rebeca Moreira (FCRB)
Teresa Ocaña (HCB)
Àngels Pozo (HCB)
Anna Serradesanferm (HCB)

ADMINISTRATIVE STAFF
Diana Vargas (HCB)

PROBLEM

Gastrointestinal and pancreatic neoplasms are among the most common cancers in the western world, and among those that cause the highest number of deaths. Paradoxically, some of them, for instance, colorectal cancer, can easily be prevented as they are usually preceded by premalignant lesions that can be removed, thus preventing their progression to cancer.

Meanwhile, in a small but significant number of cases, the tumour is the result of a hereditary disease and the genes responsible for them are known.

APPROACH

Prevention of colorectal cancer considers several approaches, depending on personal and/or family-related factors that condition its development. Establishing screening programmes among the general public is the most cost-effective measure.

In hereditary forms, genetic counselling and performing genetic studies, where appropriate, make it possible to identify individuals who are carriers of mutations. Lastly, advanced endoscopic techniques promote the detection and eventual removal of the first lesions.

IMPACT

Studies performed by the group have made it possible to ascertain the efficacy of diverse colorectal and pancreatic cancer screening strategies and identify biomarkers derived from tumour molecular alterations. It has also established the best approach for the detection of Lynch syndrome, the main form of hereditary colorectal cancer.

Lastly, many clinical studies have contributed to defining the indications and outcomes of different endoscopic and surgical techniques for the diagnosis and treatment of these neoplasms.

RESEARCH LINES

- Colorectal cancer screening and surveillance.

- Genetics and epigenetics of gastrointestinal and pancreatic cancer.

- Physiopathology of colorectal and pancreatic cancer.

- Research and innovation in endoscopy.

- Research and innovation in surgery.

PUBLICATIONS

Originals / I.F.: 463.403

1. Burke CA, Dekker E, Lynch P, Samadder NJ, Balaguer F, Hüneburg R, Burn J, Castells A, Gallinger S, Lim R, Stoffel EM, Gupta S, Henderson A, Kallenberg FG, Kanth P, Roos VH, Ginsberg GG, Sinicrope FA, Strassburg CP, Van Cutsem E, Church J, Lalloo F, Willingham FF, Wise PE, Grady WM, Ford M, Weiss JM, Gryfe R, Rustgi AK, Syngal S, Cohen A. **Eflornithine plus Sulindac for Prevention of Progression in Familial Adenomatous Polyposis.** *New England Journal of Medicine*. 383(11):1028-1039. I.F.: 74.699

2. Bleijenberg AG, IJspeert JE, van Herwaarden YJ, Carballal S, Pellisé M, Jung G, Bisseling TM, Nagtegaal ID, van Leerdam ME, van Lelyveld N, Bessa X, Rodríguez-Moranta F, Bastiaansen B, de Klaver W, Rivero L, Spaander MC, Koornstra JJ, Bujanda L, Balaguer F, Dekker E. **Personalised surveillance for serrated polyposis syndrome: results from a prospective 5-year international cohort study.** *Gut*. 69(1):112-121. I.F.: 19.819

3. Montazeri Z, Li X, Nyiraneza C, Ma X, Timofeeva M, Svinti V, Meng X, He Y, Bo Y, Morgan S, Castellví-Bel S, Ruiz-Ponte C, Fernández-Rozadilla C, Carracedo Á, Castells A, Bishop T, Buchanan D, Jenkins MA, Keku TO, Lindblom A, van Duijnhoven FJB, Wu A, Farrington SM, Dunlop MG, Campbell H, Theodoratou E, Zheng W, Little J. **Systematic meta-analyses, field synopsis and global assessment of the evidence of genetic association studies in colorectal cancer**. *Gut*. 69(8):1460-1471. I.F.: 19.819

4. Van Hattem WA; Shahidi N; Vosko S; Hartley I; Britto K; Sidhu M; Bar-Yishay I; Schoeman S; Tate DJ; Byth K; Hewett DG; Pellisé M; Hourigan LF; Moss A; Tutticci N; Bourke MJ. **Piecemeal cold snare polypectomy versus conventional endoscopic mucosal resection for large sessile serrated lesions: a retrospective comparison across two successive periods.** *Gut*. I.F.: 19.819

5. Rivero-Sánchez L, Arnau-Collell C, Herrero J, Remedios D, Cubiella J, García-Cougil M, Alvarez V, Albéniz E, Calvo P, Gordillo J, Puig I, López-Vicente J, Huerta A, López-Cerón M, Salces I, Peñas B, Parejo S, Rodriguez de Santiago E, Herraiz M, Carretero C, Gimeno-Garcia AZ, Saperas E, Alvarez-Urturi C, Moreira R, Rodriguez de Miguel C, Ocaña T, Moreira L, Carballal S, Sánchez A, Jung G, Castells A, Llach J, Balaguer F, Pellisé M, EndoCAR group from Spanish Gastroenterology Association (AEG) and Spanish Society of Digestive Endoscopy (SEED). **White-light Endoscopy is Adequate for Lynch Syndrome Surveillance in a Randomized and Non-inferiority Study.** *Gastroenterology*. 158(4):895-904.e1. I.F.: 17.373

6. Bonjoch L, Franch-Expósito S, Garre P, Belhadj S, Muñoz J, Arnau-Collell C, Díaz-Gay M, Gratacós-Mulleras A, Raimondi G, Esteban-Jurado C, Soares de Lima Y, Herrera-Pariente C, Cuatrecasas M, Ocaña T, Castells A, Fillat C, Capellá G, Balaguer F, Caldés T, Valle L, Castellví-Bel S. **Germline Mutations in FAF1 Are Associated With Hereditary Colorectal Cancer.** *Gastroenterology*. 159(1):227-240. I.F.: 17.373

7. Duran-Sanchon S, Moreno L, Augé JM, Serra-Burriel M, Cuatrecasas M, Moreira L, Martín A, Serradesanferm A, Pozo À, Costa R, Lacy A, Pellisé M, Lozano JJ, Gironella M, Castells A. **Identification and validation of microRNA profiles in fecal samples for detection of colorectal cancer.** *Gastroenterology*. 158(4):947-957.e4. I.F.: 17.373

8. Colán-Hernández J, Sendino O, Loras C, Pardo A, Gornals JB, Concepción M, Sánchez-Montes C, Murzi M, Andujar X, Velasquez-Rodriguez J, Rodriguez de Miguel C, Fernández-Esparrach G, Ginés A, Guarner-Argente C. **Antibiotic Prophylaxis Is Not Required for Endoscopic Ultrasonography-Guided Fine-Needle Aspiration of Pancreatic Cystic Lesions, Based on a Randomized Trial.** *Gastroenterology*. 158(6):1642-1649.e1. I.F.: 17.373

9. Pohl, Heiko; Grimm, Ian S; Moyer, Matthew T; Hasan, Muhammad K; Pleskow, Douglas; Elmunzer, B Joseph; Khashab, Mouen A; Sanaei, Omid; Al-Kawas, Firas H; Gordon, Stuart R; Mathew, Abraham; Levenick, John M; Aslanian, Harry R; Antaki, Fadi; von Renteln, Daniel; Crockett, Seth D; Rastogi, Amit; Gill, Jeffrey A; Law, Ryan J; Elias, Pooja A; Pellise, Maria; Mackenzie, Todd A; Rex, Douglas K. **Effects of Blended (Yellow) vs Forced Coagulation (Blue) Currents on Adverse Events, Complete Resection, or Polyp Recurrence After Polypectomy in a Large Randomized Trial**. *Gastroenterology*. 159(1):119-128.e2. I.F.: 17.373

10. Antonell A, Tort-Merino A, Ríos J, Balasa M, Borrego-Écija S, Auge JM, Muñoz-García C, Bosch B, Falgàs N, Rami L, Ramos-Campoy O, Blennow K, Zetterberg H, Molinuevo JL, Lladó A, Sánchez-Valle R. **Synaptic, axonal damage and inflammatory cerebrospinal fluid biomarkers in neurodegenerative dementias.** *Alzheimers & Dementia*. 16(2):262-272. I.F.: 17.127

11. Thomas M, Sakoda LC, Hoffmeister M, Rosenthal EA, Lee JK, van Duijnhoven FJB, Platz EA, Wu AH, Dampier CH, de la Chapelle A, Wolk A, Joshi AD, Burnett-Hartman A, Gsur A, Lindblom A, Castells A, Win AK, Namjou B, Van Guelpen B, Tangen CM, He Q, Li CI, Schafmayer C, Joshu CE, Ulrich CM, Bishop DT, Buchanan DD, Schaid D, Drew DA, Muller DC, Duggan D, Crosslin DR, Albanes D, Giovannucci EL, Larson E, Qu F, Mentch F, Giles GG, Hakonarson H, Hampel H, Stanaway IB, Figueiredo JC, Huyghe JR, Minnier J, Chang-Claude J, Hampe J, Harley JB, Visvanathan K, Curtis KR, Offit K, Li L, Le Marchand L, Vodickova L, Gunter MJ, Jenkins MA, Slattery ML, Lemire M, Woods MO, Song M, Murphy N, Lindor NM, Dikilitas O, Pharoah PDP, Campbell PT, Newcomb PA, Milne RL, MacInnis RJ, Castellví-Bel S, Ogino S, Berndt SI, Bézieau S, Thibodeau SN, Gallinger SJ, Zaidi SH, Harrison TA, Keku TO, Hudson TJ, Vymetalkova V, Moreno V, Martín V, Arndt V, Wei WQ, Chung W, Su YR, Hayes RB, White E, Vodicka P, Casey G, Gruber SB, Schoen RE, Chan AT, Potter JD, Brenner H, Jarvik GP, Corley DA, Peters U, Hsu L .

Genome-wide Modeling of Polygenic Risk Score in Colorectal Cancer Risk. *American Journal of Human Genetics.* 107(3):432-444. I.F.: 10.502

12. Bassaganyas L, Pinyol R, Esteban-Fabró R, Torrens L, Torrecilla S, Willoughby CE, Franch-Expósito S, Vila-Casadesús M, Salaverria I, Montal R, Mazzaferro V, Camps J, Sia D, Llovet JM. **Copy number alteration burden differentially impacts immune profiles and molecular features of hepatocellular carcinoma.** *Clinical Cancer Research.* 26(23):6350-6361. I.F.: 10.107

13. Kalisz M, Bernardo E, Beucher A, Maestro MA, del Pozo N, Millán I, Haeberle L, Schlensog M, Safi SA, Knoefel WT, Grau V, de Vas M, Shpargel KB, Vaquero E, Magnuson T, Ortega S, Esposito I, Real FX, Ferrer J. **HNF1A recruits KDM6A to activate differentiated acinar cell programs that suppress pancreatic cancer.** *Embo Journal.* 39(9):e102808. I.F.: 9.889

14. Dominguez-Valentin M, Sampson JR, Seppälä TT, Ten Broeke SW, Plazzer JP, Nakken S, Engel C, Aretz S, Jenkins MA, Sunde L, Bernstein I, Capella G, Balaguer F, Thomas H, Evans DG, Burn J, Greenblatt M, Hovig E, de Vos Tot Nederveen Cappel WH, Sijmons RH, Bertario L, Tibiletti MG, Cavestro GM, Lindblom A, Della Valle A, Lopez-Köstner F, Gluck N, Katz LH, Heinimann K, Vaccaro CA, Büttner R, Görgens H, Holinski-Feder E, Morak M, Holzapfel S, Hüneburg R, Knebel Doeberitz MV, Loeffler M, Rahner N, Schackert HK, Steinke-Lange V, Schmiegel W, Vangala D, Pylvänäinen K, Renkonen-Sinisalo L, Hopper JL, Win AK, Haile RW, Lindor NM, Gallinger S, Le Marchand L, Newcomb PA, Figueiredo JC, Thibodeau SN, Wadt K, Therkildsen C, Okkels H, Ketabi Z, Moreira L, Sánchez A, Serra-Burriel M, Pineda M, Navarro M, Blanco I, Green K, Lalloo F, Crosbie EJ, Hill J, Denton OG, Frayling IM, Rødland EA, Vasen H, Mints M, Neffa F, Esperon P, Alvarez K, Kariv R, Rosner G, Pinero TA, Gonzalez ML, Kalfayan P, Tjandra D, Winship IM, Macrae F, Möslein G, Mecklin JP, Nielsen M, Møller P. **Cancer risks by gene, age, and gender in 6350 carriers of pathogenic mismatch repair variants: findings from the Prospective Lynch Syndrome Database.** *Genetics In Medicine.* 22(1):15-25. I.F.: 8.904

15. Sánchez A; Roos VH; Navarro M; Pineda M; Caballol B; Moreno L; Carballal S; Rodríguez-Alonso L; Ramon Y Cajal T; Llort G; Piñol V; Fernández AL; Salces I; Picó MD; Rivas L; Bujanda L; Garzon M; Pizarro A; Martinez de Castro E; López-Arias MJ; Poves C; Garau C; Rodriguez-Alcalde D; Herraiz M; Alvarez-Urrutia C; Dacal A; Carrillo-Palau M; Cid L; Ponce M; Barreiro-Alonso E; Saperas E; Aguirre E; Romero C; Bastiaansen B; Gonzalez-Acosta M; Morales-Romero B; Ocaña T; Rivero-Sánchez L; Jung G; Bessa X; Cubiella J; Jover R; Rodríguez-Moranta F; Balmaña J; Brunet J; Castells A; Dekker E; Capella G; Serra-Burriel M; Moreira L; Pellise M; Balaguer F. **Quality of colonoscopy is associated with adenoma detection and post-colonoscopy colorectal cancer prevention in Lynch syndrome.** *Clinical Gastroenterology and Hepatology.* S1542-3565(20):31514-7. I.F.: 8.549

16. Spadaccini M, Frazzoni L, Vanella G, East J, Radaelli F, Spada C, Fuccio L, Benamouzig R, Bisschops R, Bretthauer M, Dekker E, Dinis-Ribeiro M, Ferlitsch M, Gralnek I, Jover R, Kaminski MF, Pellisé M, Triantafyllou K, Van Hooft JE, Dumonceau JM, Marmo C, Alfieri S, Chandrasekar VT, Sharma P, Rex DK, Repici A, Hassan C. **Efficacy and Tolerability of High- vs Low-Volume Split-Dose Bowel Cleansing Regimens for Colonoscopy: a Systematic Review and Meta-analysis.** *Clinical Gastroenterology and Hepatology.* 18(7):1454-1465.e14. I.F.: 8.549

17. Thoguluva Chandrasekar V, Aziz M, Patel HK, Sidhu N, Duvvuri A, Dasari C, Kennedy KF, Ashwath A, Spadaccini M, Desai M, Jegadeesan R, Sathyamurthy A, Vennalaganti P, Kohli D, Hassan C, Pellise M, Repici A, Sharma P, Bourke MJ. **Efficacy and Safety of Endoscopic Resection of Sessile Serrated Polyps 10 mm or Larger: A Systematic Review and Meta-Analysis.** *Clinical Gastroenterology and Hepatology.* 18(11):2448-2455.e3. I.F.: 8.549

18. Mangas-Sanjuan C, Santana E, Cubiella J, Rodríguez-Camacho E, Seoane A, Alvarez-Gonzalez MA, Suárez A, Álvarez-García V, González N, Luè A, Cid-Gomez L, Ponce M, Bujanda L, Portillo I, Pellisé M, Díez-Redondo P, Herráiz M, Ono A, Pizarro Á, Zapater P, Jover R, QUALISCOPIA Study Investigators. **Variation in Colonoscopy Performance Measures According to Procedure Indication.** *Clinical Gastroenterology and Hepatology.* 18(5):1216-1223.e2. I.F.: 8.549

19. Picó MD, Castillejo A, Murcia Ó, Giner-Calabuig M, Alustiza M, Sánchez A, Moreira L, Pellise M, Castells A, Carrillo-Palau M, Ramon Y Cajal T, Gisbert-Beamud A, Llort G, Yagüe C, López-Fernández A, Alvarez-Urturi C, Cubiella J, Rivas L, Rodríguez-Alcalde D, Herraiz M, Garau C, Dolz C, Bujanda L, Cid L, Povés C, Garzon M, Salces I, Ponce M, Hernández-Villalba L, Alenda C, Balaguer F, Soto JL, Jover R . **Clinical and Pathological Characterization of Lynch-Like Syndrome.** *Clinical Gastroenterology and Hepatology.* 18(2):368-374.e1. I.F.: 8.549

20. Rivero-Sánchez L, Gavric A, Herrero J, Remedios D, Alvarez V, Albéniz E, Gordillo J, Puig I, López-Vicente J, Huerta A, López-Cerón M, Salces I, Peñas B, Parejo S, Rodriguez E, Herraiz M, Carretero C, Gimeno-Garcia AZ, Saperas E, Alvarez C, Arnau-Collell C, Ortiz O, Sánchez A, Jung G, Balaguer F, Pellisé M. **The "diagnose and leave in" strategy for diminutive rectosigmoid polyps in Lynch syndrome: a post hoc analysis from a randomized controlled trial.** *Endoscopy.* I.F.: 7.341

21. Ortiz O, Rex DK, Ian G, Moyer M, Hasan MK, Pleskow D, Elmunzer JB, Khashab MA, Sanaei O, Al-Kawas F, Gordon SR, Mathew A, Levenick J, Aslanian H, Antaki F, von Renteln D, Crockett S, Rastogi A, Gill J, Law RJ, Wallace MB, Elias P, MacKenzie TA, Pohl H, Pellisé M. **Factors associated with complete clip closure after endoscopic mucosal resection of large colorectal polyps.** *Endoscopy.* I.F.: 7.341

22. Franch-Expósito S, Bassaganyas L, Vila-Casadesús M, Hernández-Illán E, Esteban-Fabró R, Díaz-Gay M, Lozano JJ, Castells A, Llovet JM, Castellví-Bel S, Camps J. **CNApp, a tool for the quantification of copy number alterations and integrative analysis revealing clinical implications.** *Elife.* 9:e50267. I.F.: 7.080

23. Albéniz E, Gimeno-García AZ, Fraile M, Ibáñez B, Guarner-Argente C, Alonso-Aguirre P, Álvarez MA, Gargallo CJ, Pellisé M, Ramos Zabala F, Herreros de Tejada A, Nogales Ó, Martínez-Ares D, Múgica F, de la Peña J, Espinós J, Huerta A, Álvarez A, Gonzalez-Santiago JM, Navajas F, Martínez-Cara JG, Redondo-Cerezo E, Merlo Mas J, Sábado F, Rivero L, Saperas E, Soto S, Rodríguez-Sánchez J, López-Roses L, Rodríguez-Téllez M, Rullán Iriarte M, Elosua González A, Pardeiro R, Valdivielso Cortázar E, Concepción-Martín M, Huelin Álvarez P, Colán Hernández J, Cobian J, Santiago J, Jiménez A, Remedios D, López-Viedma B, García O,

Martínez-Alcalá F, Pérez-Roldán F, Carbó J, Enguita M. **Clinical validation of risk scoring systems to predict risk of delayed bleeding after EMR of large colorectal lesions.** *Gastrointestinal Endoscopy.* 91(4):868-878.e3. I.F.: 6.890

24. González-Suárez B, Pagés M, Araujo IK, Romero C, Rodríguez de Miguel C, Ayuso JR, Pozo À, Vila-Casadesús M, Serradesanferm A, Ginès À, Fernández-Esparrach G, Pellisé M, López-Cerón M, Flores D, Córdova H, Sendino O, Grau J, Llach J, Serra-Burriel M, Cárdenas A, Balaguer F, Castells A. **Colon capsule endoscopy versus CT colonography in FIT-positive colorectal cancer screening subjects: a prospective randomised trial-the VICOCA study.** *Bmc Medicine.* 18(1):255. I.F.: 6.782

25. Sánchez-Izquierdo N; Perlaza P; Pagès M; Buxó E; Rios J; Rubello D; Colletti P; Mayoral M; Casanueva S; Fernández-Esparrach G; Ginés A; Fuster D. **Assessment of Response to Neoadjuvant Chemoradiotherapy by 18F-FDG PET/CT in Patients With Locally Advanced Esophagogastric Junction Adenocarcinoma.** *Clinical Nuclear Medicine.* 45(1):38-43. I.F.: 6.622

26. Golubicki M, Bonjoch L, Acuña-Ochoa JG, Díaz-Gay M, Muñoz J, Cuatrecasas M, Ocaña T, Iseas S, Mendez G, Cisterna D, Schubert SA, Nielsen M, van Wezel T, Goldberg Y, Pikarsky E, Robbio J, Roca E, Castells A, Balaguer F, Antelo M, Castellví-Bel S. **Germline biallelic MCM8 variants are associated with early-onset Lynch-like syndrome.** *Jci Insight.* 5(18):e140698. I.F.: 6.205

27. Llach J, Moreno L, Sánchez A, Herrera-Pariente C, Ocaña T, Cuatrecasas M, Rivero-Sánchez L, Moreira R, Díaz M, Jung G, Pellisé M, Castells A, Balaguer F, Carballal S, Moreira L. **Genetic Counseling for Hereditary Gastric and Pancreatic Cancer in High-Risk Gastrointestinal Cancer Clinics: An Effective Strategy**. *Cancers.* 12(9):2386. I.F.: 6.126

28. Cuatrecasas M; Gorostiaga I; Riera C; Saperas E; Llort G; Costa I; Matias-Guiu X; Carrato C; Navarro M; Pineda M; Dueñas N; Brunet J; Marco V; Trias I; Busteros JI; Mateu G; Balaguer F; Fernández-Figueras MT; Esteller M; Musulén E. **Complete loss of epcam immunoexpression identifies epcam deletion carriers in msh2negative colorectal neoplasia.** *Cancers.* 12(10):2803. I.F.: 6.126

29. Galofré C, Gönül Geyik Ö, Asensio E, Wangsa D, Hirsch D, Parra C, Saez J, Mollà M, Yüce Z, Castells A, Ried T, Camps J. **Tetraploidy-Associated Genetic Heterogeneity Confers Chemo-Radiotherapy Resistance to Colorectal Cancer Cells.** *Cancers.* 12(5):1118. I.F.: 6.126

30. Picó MD, Sánchez-Heras AB, Castillejo A, Giner-Calabuig M, Alustiza M, Sánchez A, Moreira L, Pellise M, Castells A, Llort G, Yagüe C, Ramon Y Cajal T, Gisbert-Beamud A, Cubiella J, Rivas L, Herraiz M, Garau C, Salces I, Carrillo-Palau M, Bujanda L, López-Fernández A, Alvarez-Urturi C, López MJ, Alenda C, Zapater P, Lacueva FJ, Balaguer F, Soto JL, Murcia Ó, Jover R. **Risk of Cancer in Family Members of Patients with Lynch-Like Syndrome.** *Cancers.* 12(8):2225. I.F.: 6.126

31. Vila-Navarro E, Fernandez-Castañer E, Rovira-Rigau M, Raimondi G, Vila-Casadesus M, Lozano JJ, Soubeyran P, Iovanna J, Castells A, Fillat C, Gironella M. **MiR-93 is related to poor prognosis in pancreatic cancer and promotes tumor progression by targeting microtubule dynamics.** *Oncogenesis.* 9(5):43. I.F.: 6.119

32. Toma C, Díaz-Gay M, Franch-Expósito S, Arnau-Collell C, Overs B, Muñoz J, Bonjoch L, Soares de Lima Y, Ocaña T, Cuatrecasas M, Castells A, Bujanda L, Balaguer F, Cubiella J, Caldés T, Fullerton JM, Castellví-Bel S. **Using linkage studies combined with whole-exome sequencing to identify novel candidate genes for familial colorectal cancer.** *International Journal of Cancer.* 146(6):1568-1577. I.F.: 5.145

33. Jimeno M, Domingo A, Salas I, Sánchez MR, González C, Salas C, Paúles MJ, Sanjuán X, Carballal S, Quintanilla I, Molist G, Cuatrecasas M, Pellisé M. **Pathologist Experience and Concordance in the Diagnosis of Dysplasia in Long-standing Inflammatory Bowel Disease.** *American Journal of Surgical Pathology.* 44(7):955-961. I.F.: 4.958

34. Arnau-Collell C, Soares de Lima Y, Díaz-Gay M, Muñoz J, Carballal S, Bonjoch L, Moreira L, Lozano JJ, Ocaña T, Cuatrecasas M, Díaz de Bustamante A, Castells A, Capellà G, Bujanda L, Cubiella J, Rodríguez-Alcalde D, Balaguer F, Ruiz-Ponte C, Valle L, Moreno V, Castellvi-Bel S. **Colorectal cancer genetic variants are also associated with serrated polyposis syndrome susceptibility.** *Journal of Medical Genetics.* 57(10):677-682. I.F.: 4.943

35. González-Acosta M, Marín F, Puliafito B, Bonifaci N, Fernández A, Navarro M, Salvador H, Balaguer F, Iglesias S, Velasco A, Grau Garces E, Moreno V, Gonzalez-Granado LI, Guerra-García P, Ayala R, Florkin B, Kratz C, Ripperger T, Rosenbaum T, Janusz-kiewicz-Lewandowska D, Azizi AA, Ragab I, Nathrath M, Pander HJ, Lobitz S, Suerink M, Dahan K, Imschweiler T, Demirsoy U, Brunet J, Lázaro C, Rueda D, Wimmer K, Capellá G, Pineda M. **High-sensitivity microsatellite instability assessment for the detection of mismatch repair defects in normal tissue of biallelic germline mismatch repair mutation carriers.** *Journal of Medical Genetics.* 57(4):269-273. I.F.: 4.943

36. Ruiz-Bañobre J, Roy R, Alustiza Fernández M, Murcia Ó, Jover R, Pera M, Balaguer F, López-López R, Goel A. **Clinical Significance of a MicroRNA Signature for the Identification and Predicting Prognosis in Colorectal Cancers with Mucinous Differentiation.** *Carcinogenesis.* 41(11):1498-1506. I.F.: 4.603

37. Falgàs N, Ruiz-Peris M, Pérez-Millan A, Sala-Llonch R, Antonell A, Balasa M, Borrego-Écija S, Ramos-Campoy O, Augé JM, Castellví M, Tort-Merino A, Olives J, Fernández-Villullas G, Blennow K, Zetterberg H, Bargalló N, Lladó A, Sánchez-Valle R. **Contribution of CSF biomarkers to early-onset Alzheimer's disease and frontotemporal dementia neuroimaging signatures.** *Human Brain Mapping.* 41(8):2004-2013. I.F.: 4.421

38. Galofré C; Asensio E; Ubach M; Torres IM; Quintanilla I; Castells A; Camps J. **Centrosome reduction in newly-generated tetraploid cancer cells obtained by separase depletion.** *Scientific Reports.* 10(1):9152. I.F.: 3.998

39. Fabrellas N, Moreira R, Carol M, Cervera M, de Prada G, Perez M, Vazquez E, Sola M, Sancho R, Juanola A, Pose E, Solé C, Graupera I, Solà E, Kamath PS, Ginès P. **Psychological Burden of Hepatic Encephalopathy on Patients and Caregivers.** *Clinical and Translational Gastroenterology.* 11(4):e00159. I.F.: 3.968

40. Krishnan A; Teixeira-Pinto A; Lim WH; Howard K; Chapman JR; Castells A; Roger SD; Bourke MJ; Macaskill P; Williams G; Lok CE; Diekmann F; Cross N; Sen S; Allen RDM; Chadban SJ; Pollock CA; Turner R; Tong A; Yang JYH; Williams N; Au E; Kieu A; James L;

Francis A; Wong G; Craig JC. **Health-Related Quality of Life in People Across the Spectrum of CKD.** *Kidney Int Rep.* 5(12):2264-2274. I.F.: 3.336

41. De Lacy FB; Roodbeen SX; Ríos J; Van Laarhoven J; Otero-Piñeiro A; Bravo R; Visser T; Van Poppel R; Valverde S; Hompes R; Sietses C; Castells A; Bemelman WA; Tanis PJ; Lacy AM. **Three-year outcome after transanal versus laparoscopic total mesorectal excision in locally advanced rectal cancer: A multicenter comparative analysis.** *Bmc Cancer.* 20(1):677. I.F.: 3.150

42. De Lacy FB; Taurà P; Arroyave MC; Trépanier JS; Ríos J; Bravo R; Ibarzabal A; Pena R; Deulofeu R; Lacy AM. **Impact of pneumoperitoneum on intra-abdominal microcirculation blood flow: an experimental randomized controlled study of two insufflator models during transanal total mesorectal excision: An experimental randomized multi-arm trial with parallel treatment design.** *Surgical Endoscopy and other Interventional Techniques.* 34(10):4494-4503. I.F.: 3.149

43. García-Rodríguez A; Bernal J; Sánchez F; Córdova H; Garcés Durán R; Rodríguez de Miguel C; Fernández-Esparrach G. Polyp fingerprint: automatic recognition of colorectal polyps' unique features. **Surgical Endoscopy and other Interventional Techniques.** 34(4):1887-1889. I.F.: 3.149

44. Malagón M, Ramió-Pujol S, Serrano M, Amoedo J, Oliver L, Bahí A, Miquel-Cusachs JO, Ramirez M, Queralt-Moles X, Gilabert P, Saló J, Guardiola J, Piñol V, Serra-Pagès M, Castells A, Aldeguer X, Garcia-Gil LJ. **New fecal bacterial signature for colorectal cancer screening reduces the fecal immunochemical test false-positive rate in a screening population.** *Plos One.* 15(12):e0243158. I.F.: 2.740

45. Delgado-Guillena PG, Morales-Alvarado VJ, Elosua-González A, Murcia Pomares O, Pérez-Aisa A, Córdova H, Alcedo J, Calvet X, Fernández-Esparrach G. **Gastroenterologists' attitudes on the detection and management of gastric premalignant conditions: results of a nationwide survey in Spain**. *European Journal of Cancer Prevention.* I.F.: 2.413

46. Valdes del Pino, Yacqueline; Giordano, Antonio; Escapa, Miriam; Ricart, Elena; Ordas, Ingrid; Rodriguez, Sonia; Rimola, Jordi; Fernandez-Esparrach, Gloria; Gines, Angels; Llach, Josep; Panes, Julia; Gonzalez-Suarez, Begona. **Is endoscopic treatment of small bowel strictures effective and safe in patients with Crohn's disease?** *Revista Española de Enfermedades Digestivas.* 112(4):284-289. I.F.: 2.196

47. Moreno, Pablo; de la Quintana Basarrate, Aitor; Musholt, Thomas J; Paunovic, Ivan; Puccini, Marco; Vidal, Oscar; Ortega, Joaquin; Kraimps, Jean-Louis; European Study Grp Metastatic Adre. **Laparoscopy versus open adrenalectomy in patients with solid tumor metastases: results of a multicenter European study.** *Gland Surgery.* 9(2):S159-S165. I.F.: 2.190

48. Bleijenberg AGC; IJspeert JEG; Rodríguez-Alcalde D; Carballal S; Visser MR; Pellise M; Koornstra JJ; Rana SA; Latchford A; Balaguer F; Dekker E. **The (ir)relevance of the abandoned criterion II for the diagnosis of serrated polyposis syndrome: a retrospective cohort study.** *Familial Cancer.* 19(2):153-160. I.F.: 1.760

49. Alcaraz Serrat JA; Córdova H; Moreira L; Pocurull A; Ureña R; Delgado-Guillena PG; Garcés-Durán R; Sendino O; García-Rodríguez A; González-Suárez B; Araujo IK; Ginès À; Llach J; Fernández-Esparrach G. **Evaluation of long-term adherence to oesophagogastroduodenoscopy quality indicators.** *Gastroenterología y Hepatología.* 43(10):589-597. I.F.: 1.581

50. Sendino O; Loras C; Mata A; Momblán D; Andujar X; Cruz M; Cárdenas A; Marquez I; Uchima H; Cordova H; de Lacy AM; Espinós J. **Safety and efficacy of endoscopic vacuum therapy for the treatment of perforations and anastomotic leaks of the upper gastrointestinal tract.** *Gastroenterología y Hepatología.* 43(8):431-438. I.F.: 1.581

Review / I.F.: 47.329

1. Jung G, Hernández-Illán E, Moreira L, Balaguer F, Goel A. **Epigenetics of colorectal cancer: biomarker and therapeutic potential.** *Nature Reviews Gastroenterology & Hepatology.* 17(2):111-130. I.F.: 29.869

2. Jung G, Benítez-Ribas D, Sánchez A, Balaguer F. **Current Treatments of Metastatic Colorectal Cancer with Immune Checkpoint Inhibitors-2020 Update.** *Journal of Clinical Medicine.* 9(11):3520. I.F.: 3.303

3. Villegas-Tovar, E; Jimenez-Lillo, J; Jimenez-Valerio, V; Diaz-Giron-Gidi, A; Faes-Petersen, R; Otero-Pineiro, A; De Lacy, F B; Martinez-Portilla, R J; Lacy, A M. **Performance of Indocyanine green for sentinel lymph node mapping and lymph node metastasis in colorectal cancer: a diagnostic test accuracy meta-analysis.** *Surgical Endoscopy and Other Interventional Techniques.* 34(3):1035-1047. I.F.: 3.149

4. Llach, Joan; Carballal, Sabela; Moreira, Leticia. **Familial Pancreatic Cancer: Current Perspectives**. *Cancer Management and Research.* 12:743-758. I.F.: 2.886

5. Trepanier, Jean-Sebastien; Borja de Lacy, F; Lacy, Antonio M. **Transanal Total Mesorectal Excision: Description of the Technique.** *Clinics in Colon and Rectal Surgery*. 33(3):144-149. I.F.: 1.798

6. Sanchez-Montes, Cristina; Bernal, Jorge; Garcia-Rodriguez, Ana; Cordova, Henry; Fernandez-Esparrach, Gloria. **Review of computational methods for the detection and classification of polyps in colonoscopy imaging.** *Gastroenterología y Hepatología* 43(4):222-232. I.F.: 1.581

7. Sánchez-Montes C, García-Rodríguez A, Córdova H, Pellisé M, Fernández-Esparrach G. **Advanced endoscopy technologies to improve the detection and characterisation of colorrectal polyps.** *Gastroenterología y Hepatología* 43(1):46-56. I.F.: 1.581

8. Cristina Sánchez Montes; Jorge Bernal; Ana García Rodríguez; Henry Córdova; Glòria Fernández Esparrach. **Revisión de métodos computacionales de detección y clasificación de pólipos en imagen de colonoscopia.** *Gastroenterología y Hepatología.* 43(4):222-232. I.F.: 1.581

9. Cristina Sánchez Montes; Ana García Rodríguez; Henry Córdova; María Pellisé; Glòria Fernández Esparrach. **Tecnologías de endoscopia avanzada para mejorar la detección y caracterización de los pólipos colorrectales.** *Gastroenterología y Hepatología.* 43(1):46-56. I.F.: 1.581

Letters / I.F.: 27.759

1. Hessheimer AJ, Morales X, Ginestá C, Turrado V, Borin A, Ausania F, Bravo R, Fondevila C, Lacy AM. **Where have all the appendicitis gone? Patterns of urgent**

surgical admissions during the COVID19 pandemic. *British Journal of Surgery.* 107(11):e545-e546. I.F.: 5.676

2. Lacy, A M; De Lacy, F B; Balibrea, J M. **Considerations for transanal total mesorectal excision (TaTME) use during the COVID-19 pandemic.** *British Journal of Surgery.* 107(7):e203. I.F.: 5.676

3. Etcheverry-Rufino F, Lucero C, López-Cerón M, Aleñar-Gelabert Y, Fernández I, Ugarte A, Bargalló ME, Goetz M, Veloza L, Bombí JA, Pellisé M, Leal L, Plana M, Climent N, García F. **Local barrier dysfunction identified by confocal laser endomicroscopy predicts bacterial translocation in HIV infection.** *AIDS.* 34(2):328-331. I.F.: 4.534

4. Morales X; Turrado V; de Lacy B; Hessheimer A; Fondevila C; de Lacy AM. **Experience of an emergency surgery department during the pandemic caused by SARS-CoV-2 infection.** *Emergencias.* 32(6):435-436. I.F.: 3.173

5. González-Abós C; de Lacy FB; Lacy AM. **Fluorescent-guided surgery with quantitative indocyanine green assessment - a video vignette.** *Colorectal Disease.* 22(10):1466. I.F.: 2.769

6. Otero-Pineiro, A; Bravo, R; Besa, A; Pena, R; De Lacy, F B; Lacy, A M. **Robotic right hemicolectomy with D3 lymphadenectomy, complete mesocolon excision and intracorporeal anastomosis - a video vignette.** *Colorectal Disease.* 22(11):1809-1810. I.F.: 2.769

7. Castells A. **COVID-19: a pandemic of values.** *Gastroenterología y Hepatología.* 43(6):329-330. I.F.: 1.581

8. Uchima H; Alvarez-Gonzalez MA; Colan-Hernandez J; Rivero-Sánchez L; Barquero D; Gornals JB; Loras C. **Endoscopy activity in a covid-19 high-risk area (Barcelona): Moving forward (or backwards) according to the necessary resources available.** *Gastroenterología y Hepatología.* 43(8):482-484. I.F.: 1.581

Editorial / I.F.: 43.817

1. Dekker E, Bleijenberg A, Balaguer F, Dutch-Spanish-British Serrated Polyposis Syndrome collaboration. **Update on the World Health Organization Criteria for Diagnosis of Serrated Polyposis Syndrome.** *Gastroenterology.* 158(6):1520-1523. I.F.: 17.373

2. Pellisé M. **The COVID-19 pandemic and colorectal cancer prevention: God tempers the wind to the shorn lamb.** *Endoscopy.* 52(10):877-878. I.F.: 7.341

3. Ginès À. **Novel design fine-needle biopsy needles are ready to take over the supremacy of fine-needle aspiration needles for sampling of solid pancreatic masses.** *Endoscopy.* 52(6):427-428. I.F.: 7.341

4. Ginès À, Fernández-Esparrach G, Pellisé M, Sendino O, Balaguer F, Llach J, González-Suárez B, Saló S. **Critical importance of early introduction of prevention measures for SARS-CoV-2 infection in endoscopy units.** *Gastrointestinal Endoscopy.* 92(4):936-937. I.F.: 6.890

5. Perea, Jose; Balaguer, Francesc. **Deciphering the increasing incidence, special characteristics and possible aetiology of early onset colorectal cancer: A European perspective within an international effort.** *United European Gastroenterology Journal.* 8(2):131-132. I.F.: 3.549

6. Vidal Ó; Saavedra-Perez D. **Remote-access thyroid surgery: Controversies.** *Cirugía Española.* 98(1):1-3. I.F.: 1.323

Case Reports / I.F.: 6.89

1. Anker JP, Córdova H, Guerrero JA, Fernández-Esparrach G, Cuatrecasas M . **Colonic perforation after piecemeal mucosectomy diagnosed by confocal microscopy.** *Gastrointestinal Endoscopy.* 92(4):971-973. I.F.: 6.890

Clinical Guidelines / I.F.: 18.459

1. Gralnek IM, Hassan C, Beilenhoff U, Antonelli G, Ebigbo A, Pellisè M, Arvanitakis M, Bhandari P, Bisschops R, Van Hooft JE, Kaminski MF, Triantafyllou K, Webster G, Pohl H, Dunkley I, Fehrke B, Gazic M, Gjergek T, Maasen S, Waagenes W, de Pater M, Ponchon T, Siersema PD, Messmann H, Dinis-Ribeiro M. **ESGE and ESGENA Position Statement on gastrointestinal endoscopy and the COVID-19 pandemic.** *Endoscopy.* 52(6):483-490. I.F.: 7.341

2. Hassan C, Antonelli G, Dumonceau JM, Regula J, Bretthauer M, Chaussade S, Dekker E, Ferlitsch M, Gimeno-Garcia A, Jover R, Kalager M, Pellisé M, Pox C, Ricciardiello L, Rutter M, Helsingen LM, Bleijenberg A, Senore C, van Hooft JE, Dinis-Ribeiro M, Quintero E. **Post-polypectomy colonoscopy surveillance: European Society of Gastrointestinal Endoscopy (ESGE) Guideline - Update 2020.** *Endoscopy.* 52(8):687-700. I.F.: 7.341

3. Crespo, Javier; Andrade, Raul; Alberca de las Parras, Fernando; Balaguer, Francesc; Barreiro-de Acosta, Manuel; Bujanda, Luis; Gutierrez, Ana; Jorquera, Francisco; Iglesias-Garcia, Julio; Sanchez-Yague, Andres; Luis Calleja, Jose. **Resumption of activity in gastroenterology departments. Recommendations by SEPD, AEEH, GETECCU and AEG.** *Revista Española de Enfermedades Digestivas.* 112(5):397-410. I.F.: 2.196

4. Crespo J, Andrade R, Alberca de Las Parras F, Balaguer F, Barreiro-de Acosta M, Bujanda L, Gutiérrez A, Jorquera F, Iglesias-García J, Sánchez-Yagüe A, Calleja JL. Resumption of activity in gastroenterology departments. **Recommendations by SEPD, AEEH, GETECCU and AEG.** *Gastroenterología y Hepatología.* 43(6):332-347. I.F.: 1.581

Consortium Publications / I.F.: 5.676

1. COVIDSurg Collaborative. **Delaying surgery for patients with a previous SARS-CoV-2 infection.** *British Journal of Surgery.* 107(12):e601-e602. I.F.: 5.676

GRANTS FOR RESEARCH IN PROGRESS

Balaguer F. **Análisis del defecto de campo mediado por metilación aberrante del ADN en el síndrome de poliposis serrada.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00766
Duration: 01/01/2017-31/12/2020

Balaguer F. **Vacunas con células dendríticas para la prevención del cáncer: neopéptidos derivados de la vía de inestabilidad de microsatélites para inmunoterapia en el síndrome de Lynch.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01867
Duration: 01/01/2020-31/12/2022

Balaguer F. **Identificación de neoantígenos para desarrollar una inmunoterapia eficaz para la prevención del cáncer en el síndrome de Lynch.**
Sponsored by: Asociación Española de Gastro Enterología. AEG_BECAGRUPOONCO_01
Duration: 01/04/2018-31/12/-

Balaguer F. **Development of microRNA Biomarkers For Noninvasive Detection of Colorectal Cancer.**
Sponsored by: National Institutes of Health. INT_NIH_R01CA184792-05
Duration: 01/07/2019-30/06/2021

Camps-Polo J. **Genòmica traslacional del càncer colorectal.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01035
Duration: 01/01/2017-30/09/2021

Camps-Polo J, Cuatrecasas M. **Nuevas estrategias para la estratificación del riesgo de recidiva en pacientes con cáncer de colon en estadio II: Integración de perfiles genómicos y carga tumoral ganglionar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01304
Duration: 01/01/2018-31/12/2021

Camps-Polo J. **Identificación de una firma inmunogénica asociada a la respuesta al tratamiento neoadyuvante del cáncer de recto localizado.**
Sponsored by: Grupo Español Multidisciplinar en Cáncer Digestivo. GEMCAD_18_001
Duration: 10/05/2019-09/05/2021

Castells A. **Grup de recerca en Oncologia Gastrointestinal i Pancreàtica.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_00653
Duration: 01/01/2017-30/09/2021

Fernández-Esparrach G, Cordova-Guevara H. **Validación clínica del primer sistema in-vivo de predicción histológica automática de los pólopis de colon integrando la visión del endoscopista con la visión por computador (HISINVIA).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00894
Duration: 01/01/2018-31/12/2021

Fernández-Esparrach G. **Validación preclínica de un dispositivo de endoscopia basado en microondas (MiWendo) para el diagnóstico de neoplasias colorrectales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_DTS17/00090
Duration: 01/01/2018-31/12/2020

Pellisé M. **Improving the management of T1 colorectal cancer.**
Sponsored by: Fundació la Marató de TV3. Cancer_19
Duration: 20/07/2020-19/07/2023

Pellisé M**. Endoscopia versus cirugía para el tratamiento de los cánceres colorectales pT1: Estudio de cohortes de base poblacional - EpiT1.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01050
Duration: 01/01/2020-31/12/2022

Pellisé M. **Utilidad de la Imagen de Color Vinculada (Linked Color Imaging; LCI) en la vigilancia del Síndrome de Poliposis Serrada: Ensayo clínico Aleatorizado, Controlado, Paralelo y Multicéntrico.**
Sponsored by: Fundación Sociedad Española de Endoscopia Digestiva. FSEED_18_001
Duration: 21/12/2018-31/12/-

Rivero-Sánchez L. **Usefulness of Linked Color Imaging for surveillance of Serrated Polyposis Syndrome: A Randomized, Controlled and Parallel Trial.**
Sponsored by: European Society of Gastrointestinal Endoscopy. INT_ESGE_GA_2018
Duration: 01/06/2020-14/06/2022

Sánchez-Tillo E. **La ligasa E3 de ubiquitina GRAIL/RNF128 en los subtipos de cáncer de colon con mutaciones en KRAS, BRAF y APC.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00244
Duration: 01/01/2019-31/12/2021

Sendino O. **Ensayo prospectivo multicéntrico aleatorizado de uso de stents Vs terapia de vacío endoscópica en el tratamiento de dehiscencia de sutura anastomótica en el tracto digestivo superior.**
Sponsored by: Fundación Sociedad Española de Endoscopia Digestiva. FSEED_19_001
Duration: 19/12/2019-18/12/2021

Vaquero EC. **Intervención farmacológica sobre el patrón fibroinflamatorio asociado al desarrollo de cáncer de páncreas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00842
Duration: 01/01/2019-31/12/2021

Vaquero EC. **Farmacotipificación de pacientes con cáncer de páncreas mediante organoides autogénicos.**
Sponsored by: Fundación de investigación medica mutua madrileña. FundMM_AP172132019
Duration: 30/09/2019-29/09/2022

Vaquero EC. **Intervención farmacológica sobre el patrón fibroinflamatorio asociado al desarrollo de cáncer de páncreas.**
Sponsored by: Asociación Española de Pancreatología. AESPANC_19_002
Duration: 25/11/2019-24/11/2021

DOCTORAL THESES

Gironella M, Closa D. **MicroRNAs (miRNAs) circulantes en modelos de patología digestiva: cáncer colorrectal y pancreatitis aguda.**
PhD student: Maria Marcuello Fernandez

Pellise M, Balaguer F. **Optimización de la endoscopia en el diagnóstico y vigilancia de la neoplasia colorrectal.**
PhD student: Liseth Rivero Sanchez

Camps J. **Centrosome dynamics, chromosome instability and treatment response after whole-genome doubling in colorectal cáncer.**
PhD student: Claudia Galofré Loscos

3.3 Genetic predisposition to gastrointestinal cancer

LOCATION
CEK building, floor 4

KEYWORDS
1. **Gastrointestinal cancer**
2. **Hereditary predisposition**
3. **Genetic association studies**
4. **Next generation sequencing**
5. **Gene editing**
6. **Intestinal organoids**

RELATED DISEASES
1. **Colorectal cancer**
2. **Gastric cancer**
3. **Serrated polyposis syndrome**

GROUP INVOLVED IN
AGAUR_SGR17: 00021
CIBEREHD

Original publications

TOTAL	19
IF	265,45
Mean IF	13,97
Q1	95%
D1	63%
MA	32%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Sergi Castellví-Bel (IDIBAPS)
T. 93 227 54 00 (Ext.: 4183/2915)
sbel@clinic.cat

RESEARCHERS
Leticia Moreira (HCB)

POST-DOCTORAL RESEARCHERS
Laia Bonjoch (FCRB)

PRE-DOCTORAL RESEARCHERS
Coral Arnau Collell (CIBER)
Cristina Herrera Pariente (CIBER)
Yasmin Soares (IDIBAPS)

TECHNICIANS
Jenifer Muñoz (CIBER)

PROBLEM

Cancer is the second leading cause of death worldwide. Gastrointestinal neoplasms, such as colorectal cancer and gastric cancer, are common tumours. An important number of these cancers are due to alterations of genes, which will be transmitted down generation after generation within the same family.

It is necessary to determine what these genes are, how they work, and whether their alteration predisposes people to cancer. This will improve knowledge of these diseases, permit the identification of people at risk and enable strategies to be designed for personalised prevention and treatment.

APPROACH

The group works to identify alterations of the human genome that are relevant to hereditary predisposition towards suffering gastrointestinal neoplasms.

To determine them, we use genetic association studies, in which the group compares the genomes of patients and those of healthy controls, along with mass sequencing studies to decode the genome.

To verify the effect of genetic alterations, it uses molecular and cellular biology tools such as gene editing using the CRISPR system and the growth of organoids, three-dimensional structures that allow it to recreate gastrointestinal tissue in the laboratory.

IMPACT

The group's research identifies new genes and genetic variants involved in hereditary predisposition to gastrointestinal cancer. It has been able to identify new variants thanks to the results obtained in genetic association studies and in international collaboration.

Sequencing studies have identified significant candidates, and the group is applying functional studies to corroborate their implications for predisposition towards cancer. The group wants to use these new genetic variants to improve the clinical management of patients and to develop customised follow-up and treatment.

RESEARCH LINES

- Clinical relevance of new hereditary genes for gastrointestinal cancer.

- Genetic association studies in colorectal cancer and advanced adenomas.

- New hereditary genes for colorectal cancer.

- New hereditary genes for gastric cancer.

- State-of-the-art functional studies of candidate genes.

PUBLICATIONS

Originals / I.F.: 265.447

1. Ellinghaus D, Degenhardt F, Bujanda L, Buti M, Albillos A, Invernizzi P, Fernández J, Prati D, Baselli G, Asselta R, Grimsrud MM, Milani C, Aziz F, Kässens J, May S, Wendorff M, Wienbrandt L, Uellendahl-Werth F, Zheng T, Yi X, de Pablo R, Chercoles AG, Palom A, Garcia-Fernandez AE, Rodriguez-Frias F, Zanella A, Bandera A, Protti A, Aghemo A, Lleo A, Biondi A, Caballero-Garralda A, Gori A, Tanck A, Carreras Nolla A, Latiano A, Fracanzani AL, Peschuck A, Julià A, Pesenti A, Voza A, Jiménez D, Mateos B, Nafria Jimenez B, Quereda C, Paccapelo C, Gassner C, Angelini C, Cea C, Solier A, Pestaña D, Muñiz-Diaz E, Sandoval E, Paraboschi EM, Navas E, García Sánchez F, Ceriotti F, Martinelli-Boneschi F, Peyvandi F, Blasi F, Téllez L, Blanco-Grau A, Hemmrich-Stanisak G, Grasselli G, Costantino G, Cardamone G, Foti G, Aneli S, Kurihara H, ElAbd H, My I, Galván-Femenia I, Martín J, Erdmann J, Ferrusquía-Acosta J, Garcia-Etxebarria K, Izquierdo-Sanchez L, Bettini LR, Sumoy L, Terranova L, Moreira L, Santoro L, Scudeller L, Mesonero F, Roade L, Rühlemann MC, Schaefer M, Carrabba M, Riveiro-Barciela M, Figuera Basso ME, Valsecchi MG, Hernandez-Tejero M, Acosta-Herrera M, D'Angiò M, Baldini M, Cazzaniga M, Schulzky M, Cecconi M, Wittig M, Ciccarelli M, Rodríguez-Gandía M, Bocciolone M, Miozzo M, Montano N, Braun N, Sacchi N, Martínez N, Özer O, Palmieri O, Faverio P, Preatoni P, Bonfanti P, Omodei P, Tentorio P, Castro P, Rodrigues PM, Blandino Ortiz A, de Cid R, Ferrer R, Gualtierotti R, Nieto R, Goerg S, Badalamenti S, Marsal S, Matullo G, Pelusi S, Juzenas S, Aliberti S, Monzani V, Moreno V, Wesse T, Lenz TL, Pumarola T, Rimoldi V, Bosari S, Albrecht W, Peter W, Romero-Gómez M, D'Amato M, Duga S, Banales JM, Hov JR, Folseraas T, Valenti L, Franke A, Karlsen TH Severe Covid-19 GWAS Group. **Genomewide Association Study of Severe Covid-19 with Respiratory Failure.** *New England Journal of Medicine.* 383(16):1522-1534. I.F.: 74.699

2. Montazeri Z, Li X, Nyiraneza C, Ma X, Timofeeva M, Svinti V, Meng X, He Y, Bo Y, Morgan S, Castellví-Bel S, Ruiz-Ponte C, Fernández-Rozadilla C, Carracedo Á, Castells A, Bishop T, Buchanan D, Jenkins MA, Keku TO, Lindblom A, van Duijnhoven FJB, Wu A, Farrington SM, Dunlop MG, Campbell H, Theodoratou E, Zheng W, Little J. **Systematic meta-analyses, field synopsis and global assessment of the evidence of genetic association studies in colorectal cancer.** *Gut.* 69(8):1460-1471. I.F.: 19.819

3. Rivero-Sánchez L, Arnau-Collell C, Herrero J, Remedios D, Cubiella J, García-Cougil M, Alvarez V, Albéniz E, Calvo P, Gordillo J, Puig I, López-Vicente J, Huerta A, López-Cerón M, Salces I, Peñas B, Parejo S, Rodriguez de Santiago E, Herraiz M, Carretero C, Gimeno-Garcia AZ, Saperas E, Alvarez-Urturi C, Moreira R, Rodriguez de Miguel C, Ocaña T, Moreira L, Carballal S, Sánchez A, Jung G, Castells A, Llach J, Balaguer F, Pellisé M, EndoCAR group from Spanish Gastroenterology Association (AEG) and Spanish Society of Digestive Endoscopy (SEED). **White-light Endoscopy is Adequate for Lynch Syndrome Surveillance in a Randomized and Non-inferiority Study**. *Gastroenterology.* 158(4):895-904.e1. I.F.: 17.373

4. Bonjoch L, Franch-Expósito S, Garre P, Belhadj S, Muñoz J, Arnau-Collell C, Díaz-Gay M, Gratacós-Mulleras A, Raimondi G, Esteban-Jurado C, Soares de Lima Y, Herrera-Pariente C, Cuatrecasas M, Ocaña T, Castells A, Fillat C, Capellá G, Balaguer F, Caldés T, Valle L, Castellví-Bel S. **Germline Mutations in FAF1 Are Associated With Hereditary Colorectal Cancer.** *Gastroenterology.* 159(1):227-240. I.F.: 17.373

5. Duran-Sanchon S, Moreno L, Augé JM, Serra-Burriel M, Cuatrecasas M, Moreira L, Martín A, Serradesanferm A, Pozo À, Costa R, Lacy A, Pellisé M, Lozano JJ, Gironella M, Castells A. **Identification and validation of microRNA profiles in fecal samples for detection of colorectal cancer.** *Gastroenterology.* 158(4):947-957.e4. I.F.: 17.373

6. Archambault AN, Su YR, Jeon J, Thomas M, Lin Y, Conti DV, Win AK, Sakoda LC, Lansdorp-Vogelaar I, Peterse EFP, Zauber AG, Duggan D, Holowatyj AN, Huyghe JR, Brenner H, Cotterchio M, Bézieau S, Schmit SL, Edlund CK, Southey MC, MacInnis RJ, Campbell PT, Chang-Claude J, Slattery ML, Chan AT, Joshi AD, Song M, Cao Y, Woods MO, White E, Weinstein SJ, Ulrich CM, Hoffmeister M, Bien SA, Harrison TA, Hampe J, Li CI, Schafmayer C, Offit K, Pharoah PD, Moreno V, Lindblom A, Wolk A, Wu AH, Li L, Gunter MJ, Gsur A, Keku TO, Pearlman R, Bishop DT, Castellví-Bel S, Moreira L, Vodicka P, Kampman E, Giles GG, Albanes D, Baron JA, Berndt SI, Brezina S, Buch S, Buchanan DD, Trichopoulou A, Severi G, Chirlaque MD, Sánchez MJ, Palli D, Kühn T, Murphy N, Cross AJ, Burnett-Hartman AN, Chanock SJ, de la Chapelle A, Easton DF, Elliott F, English DR, Feskens EJM, FitzGerald LM, Goodman PJ, Hopper JL, Hudson TJ, Hunter DJ, Jacobs EJ, Joshu CE, Küry S, Markowitz SD, Milne RL, Platz EA, Rennert G, Rennert HS, Schumacher FR, Sandler RS, Seminara D, Tangen CM, Thibodeau SN, Toland AE, van Duijnhoven FJB, Visvanathan K, Vodickova L, Potter JD, Männistö S, Weigl K, Figueiredo J, Martín V, Larsson SC, Parfrey PS, Huang WY, Lenz HJ, Castelao JE, Gago-Dominguez M, Muñoz-Garzón V, Mancao C, Haiman CA, Wilkens LR, Siegel E, Barry E, Younghusband B, Van Guelpen B, Harlid S, Zeleniuch-Jacquotte A, Liang PS, Du M, Casey G, Lindor NM, Le Marchand L, Gallinger SJ, Jenkins MA, Newcomb PA, Gruber SB, Schoen RE, Hampel H, Corley DA, Hsu L, Peters U, Hayes RB. **Cumulative Burden of Colorectal Cancer-Associated Genetic Variants Is More Strongly Associated With Early-Onset vs Late-Onset Cancer.** *Gastroenterology.* 158(5):1274-1286.e12. I.F.: 17.373

7. Murphy N, Carreras-Torres R, Song M, Chan AT, Martin RM, Papadimitriou N, Dimou N, Tsilidis KK, Banbury B, Bradbury KE, Besevic J, Rinaldi S, Riboli E, Cross AJ, Travis RC, Agnoli C, Albanes D, Berndt SI, Bézieau S, Bishop DT, Brenner H, Buchanan DD, Onland-Moret NC, Burnett-Hartman A, Campbell PT, Casey G, Castellví-Bel S, Chang-Claude J, Chirlaque MD, de la Chapelle A, English D, Figueiredo JC, Gallinger SJ, Giles GG, Gruber SB, Gsur A, Hampe J, Hampel H, Harrison TA, Hoffmeister M, Hsu L, Huang WY, Huyghe JR, Jenkins MA, Keku TO, Kühn T, Kweon SS, Le Marchand L, Li CI, Li L, Lindblom A, Martín V, Milne RL, Moreno V, Newcomb PA, Offit K, Ogino S, Ose J, Perduca V, Phipps AI, Platz EA, Potter JD, Qu C, Rennert G, Sakoda LC, Schafmayer C, Schoen RE, Slattery ML, Tangen CM, Ulrich CM, van Duijnhoven FJB, Van Guelpen B, Visvanathan K, Vodicka P, Vodickova L, Vymetalkova V, Wang H, White E, Wolk A, Woods MO, Wu AH, Zheng W, Peters U, Gunter MJ. **Circulating Levels of Insulin-like Growth Factor 1 and Insulin-like Growth Factor Binding Protein 3 Associate With Risk of Colorectal Cancer Based on Serologic and Mendelian Randomization Analyses.** *Gastroenterology.* 158(5):1300-1312.e20. I.F.: 17.373

8. Papadimitriou N., Dimou N., Tsilidis K.K., Banbury B., Martin R.M., Lewis S.J., Kazmi N., Robinson T.M., Albanes D., Aleksandrova K.,

Berndt S.I., Timothy Bishop D., Brenner H., Buchanan D.D., Bueno-de-Mesquita B., Campbell P.T., Castellví-Bel S., Chan A.T., Chang-Claude J., Ellingjord-Dale M., Figueiredo J.C., Gallinger S.J., Giles G.G., Giovannucci E., Gruber S.B., Gsur A., Hampe J., Hampel H., Harlid S., Harrison T.A., Hoffmeister M., Hopper J.L., Hsu L., María Huerta J., Huyghe J.R., Jenkins M.A., Keku T.O., Kühn T., La Vecchia C., Le Marchand L., Papadimitriou N., Dimou N., Tsilidis K.K., Banbury B., Martin R.M., Lewis S.J., Kazmi N., Robinson T.M., Albanes D., Aleksandrova K., Berndt S.I., Timothy Bishop D., Brenner H., Buchanan D.D., Bueno-de-Mesquita B., Campbell P.T., Castellví-Bel S., Chan A.T., Chang-Claude J., Ellingjord-Dale M., Figueiredo J.C., Gallinger S.J., Giles G.G., Giovannucci E., Gruber S.B., Gsur A., Hampe J., Hampel H., Harlid S., Harrison T.A., Hoffmeister M., Hopper J.L., Hsu L., María Huerta J., Huyghe J.R., Jenkins M.A., Keku T.O., Kühn T., La Vecchia C., Le Marchand L., Papadimitriou N., Dimou N. **Physical activity and risks of breast and colorectal cancer: a Mendelian randomisation analysis.** *Nature Communications.* 11(1):597. I.F.: 12.121

9. Thomas M, Sakoda LC, Hoffmeister M, Rosenthal EA, Lee JK, van Duijnhoven FJB, Platz EA, Wu AH, Dampier CH, de la Chapelle A, Wolk A, Joshi AD, Burnett-Hartman A, Gsur A, Lindblom A, Castells A, Win AK, Namjou B, Van Guelpen B, Tangen CM, He Q, Li CI, Schafmayer C, Joshu CE, Ulrich CM, Bishop DT, Buchanan DD, Schaid D, Drew DA, Muller DC, Duggan D, Crosslin DR, Albanes D, Giovannucci EL, Larson E, Qu F, Mentch F, Giles GG, Hakonarson H, Hampel H, Stanaway IB, Figueiredo JC, Huyghe JR, Minnier J, Chang-Claude J, Hampe J, Harley JB, Visvanathan K, Curtis KR, Offit K, Li L, Le Marchand L, Vodickova L, Gunter MJ, Jenkins MA, Slattery ML, Lemire M, Woods MO, Song M, Murphy N, Lindor NM, Dikilitas O, Pharoah PDP, Campbell PT, Newcomb PA, Milne RL, MacInnis RJ, Castellví-Bel S, Ogino S, Berndt SI, Bézieau S, Thibodeau SN, Gallinger SJ, Zaidi SH, Harrison TA, Keku TO, Hudson TJ, Vymetalkova V, Moreno V, Martín V, Arndt V, Wei WQ, Chung W, Su YR, Hayes RB, White E, Vodicka P, Casey G, Gruber SB, Schoen RE, Chan AT, Potter JD, Brenner H, Jarvik GP, Corley DA, Peters U, Hsu L. **Genome-wide Modeling of Polygenic Risk Score in Colorectal Cancer Risk**. *American Journal of Human Genetics.* 107(3):432-444. I.F.: 10.502

10. Dominguez-Valentin M, Sampson JR, Seppälä TT, Ten Broeke SW, Plazzer JP, Nakken S, Engel C, Aretz S, Jenkins MA, Sunde L, Bernstein I, Capella G, Balaguer F, Thomas H, Evans DG, Burn J, Greenblatt M, Hovig E, de Vos Tot Nederveen Cappel WH, Sijmons RH, Bertario L, Tibiletti MG, Cavestro GM, Lindblom A, Della Valle A, Lopez-Köstner F, Gluck N, Katz LH, Heinimann K, Vaccaro CA, Büttner R, Görgens H, Holinski-Feder E, Morak M, Holzapfel S, Hüneburg R, Knebel Doeberitz MV, Loeffler M, Rahner N, Schackert HK, Steinke-Lange V, Schmiegel W, Vangala D, Pylvänäinen K, Renkonen-Sinisalo L, Hopper JL, Win AK, Haile RW, Lindor NM, Gallinger S, Le Marchand L, Newcomb PA, Figueiredo JC, Thibodeau SN, Wadt K, Therkildsen C, Okkels H, Ketabi Z, Moreira L, Sánchez A, Serra-Burriel M, Pineda M, Navarro M, Blanco I, Green K, Lalloo F, Crosbie EJ, Hill J, Denton OG, Frayling IM, Rødland EA, Vasen H, Mints M, Neffa F, Esperon P, Alvarez K, Kariv R, Rosner G, Pinero TA, Gonzalez ML, Kalfayan P, Tjandra D, Winship IM, Macrae F, Möslein G, Mecklin JP, Nielsen M, Møller P. **Cancer risks by gene, age, and gender in 6350 carriers of pathogenic mismatch repair variants: findings from the Prospective Lynch Syndrome Database**. *Genetics in Medicine.* 22(1):15-25. I.F.: 8.904

11. Picó MD, Castillejo A, Murcia Ó, Giner-Calabuig M, Alustiza M, Sánchez A, Moreira L, Pellise M, Castells A, Carrillo-Palau M, Ramon Y Cajal T, Gisbert-Beamud A, Llort G, Yagüe C, López-Fernández A, Alvarez-Urturi C, Cubiella J, Rivas L, Rodríguez-Alcalde D, Herraiz M, Garau C, Dolz C, Bujanda L, Cid L, Povés C, Garzon M, Salces I, Ponce M, Hernández-Villalba L, Alenda C, Balaguer F, Soto JL, Jover R. **Clinical and Pathological Characterization of Lynch-Like Syndrome.** *Clinical Gastroenterology and Hepatology*. 18(2):368-374.e1. I.F.: 8.549

12. Franch-Expósito S, Bassaganyas L, Vila-Casadesús M, Hernández-Illán E, Esteban-Fabró R, Díaz-Gay M, Lozano JJ, Castells A, Llovet JM, Castellví-Bel S, Camps J. **CNApp, a tool for the quantification of copy number alterations and integrative analysis revealing clinical implications.** *Elife*. 9:e50267. I.F.: 7.080

13. Bull CJ, Bell JA, Murphy N, Sanderson E, Davey Smith G, Timpson NJ, Banbury BL, Albanes D, Berndt SI, Bézieau S, Bishop DT, Brenner H, Buchanan DD, Burnett-Hartman A, Casey G, Castellví-Bel S, Chan AT, Chang-Claude J, Cross AJ, de la Chapelle A, Figueiredo JC, Gallinger SJ, Gapstur SM, Giles GG, Gruber SB, Gsur A, Hampe J, Hampel H, Harrison TA, Hoffmeister M, Hsu L, Huang WY, Huyghe JR, Jenkins MA, Joshu CE, Keku TO, Kühn T, Kweon SS, Le Marchand L, Li CI, Li L, Lindblom A, Martín V, May AM, Milne RL, Moreno V, Newcomb PA, Offit K, Ogino S, Phipps AI, Platz EA, Potter JD, Qu C, Quirós JR, Rennert G, Riboli E, Sakoda LC, Schafmayer C, Schoen RE, Slattery ML, Tangen CM, Tsilidis KK, Ulrich CM, van Duijnhoven FJB, van Guelpen B, Visvanathan K, Vodicka P, Vodickova L, Wang H, White E, Wolk A, Woods MO, Wu AH, Campbell PT, Zheng W, Peters U, Vincent EE, Gunter MJ. **Adiposity, metabolites, and colorectal cancer risk: Mendelian randomization study**. *Bmc Medicine.* 18(1):396. I.F.: 6.782

14. Golubicki M, Bonjoch L, Acuña-Ochoa JG, Díaz-Gay M, Muñoz J, Cuatrecasas M, Ocaña T, Iseas S, Mendez G, Cisterna D, Schubert SA, Nielsen M, van Wezel T, Goldberg Y, Pikarsky E, Robbio J, Roca E, Castells A, Balaguer F, Antelo M, Castellví-Bel S. **Germline biallelic MCM8 variants are associated with early-onset Lynch-like syndrome.** *JCI Insight.* 5(18):e140698. I.F.: 6.205

15. Llach J, Moreno L, Sánchez A, Herrera-Pariente C, Ocaña T, Cuatrecasas M, Rivero-Sánchez L, Moreira R, Díaz M, Jung G, Pellisé M, Castells A, Balaguer F, Carballal S, Moreira L. **Genetic Counseling for Hereditary Gastric and Pancreatic Cancer in High-Risk Gastrointestinal Cancer Clinics: An Effective Strategy.** *Cancers*. 12(9):2386. I.F.: 6.126

16. Picó MD, Sánchez-Heras AB, Castillejo A, Giner-Calabuig M, Alustiza M, Sánchez A, Moreira L, Pellise M, Castells A, Llort G, Yagüe C, Ramon Y Cajal T, Gisbert-Beamud A, Cubiella J, Rivas L, Herraiz M, Garau C, Salces I, Carrillo-Palau M, Bujanda L, López-Fernández A, Alvarez-Urturi C, López MJ, Alenda C, Zapater P, Lacueva FJ, Balaguer F, Soto JL, Murcia Ó, Jover R. **Risk of Cancer in Family Members of Patients with Lynch-Like Syndrome**. *Cancers*. 12(8):2225. I.F.: 6.126

17. Toma C, Díaz-Gay M, Franch-Expósito S, Arnau-Collell C, Overs B, Muñoz J, Bonjoch L, Soares de Lima Y, Ocaña T, Cuatrecasas M, Castells A, Bujanda L, Balaguer F, Cubiella J, Caldés T, Fullerton JM, Castellví-Bel S . **Using linkage studies combined with whole-exome sequencing to identify novel candidate genes for familial colorectal cancer**. *International Journal of Cancer.* 146(6):1568-1577. I.F.: 5.145

18. Arnau-Collell C, Soares de Lima Y, Díaz-Gay M, Muñoz J, Carballal S, Bonjoch L, Moreira L, Lozano JJ, Ocaña T, Cuatrecasas M, Díaz de Bustamante A, Castells A, Capellà G, Bujanda L, Cubiella J, Rodríguez-Alcalde D, Balaguer F, Ruiz-Ponte C, Valle L, Moreno V, Castellvi-Bel S. **Colorectal cancer genetic variants are also associated with serrated polyposis syndrome susceptibility**. *Journal of Medical Genetics*. 57(10):677-682. I.F.: 4.943

19. Alcaraz Serrat JA; Córdova H; Moreira L; Pocurull A; Ureña R; Delgado-Guillena PG; Garcés-Durán R; Sendino O; García-Rodríguez A; González-Suárez B; Araujo IK; Ginès À; Llach J; Fernández-Esparrach G. **Evaluation of long-term adherence to oesophagogastroduodenoscopy quality indicators.** *Gastroenterología y Hepatología*. 43(10):589-597. I.F.: 1.581

Review / I.F.: 34.951

1. Jung G, Hernández-Illán E, Moreira L, Balaguer F, Goel A. **Epigenetics of colorectal cancer: biomarker and therapeutic potential.** *Nature Reviews Gastroenterology & Hepatology*. 17(2):111-130. I.F.: 29.869

2. Llach, Joan; Carballal, Sabela; Moreira, Leticia. **Familial Pancreatic Cancer: Current Perspectives.** *Cancer Management and Research*. 12:743-758. I.F.: 2.886

3. Duran-Sanchon, Saray; Herrera-Pariente, Cristina; Moreira, Leticia. **New non-invasive biomarkers for colorectal cancer screening.** *Revista Española de Enfermedades Digestivas*. 112(8):642-648. I.F.: 2.196

Letters / I.F.: 2.141

1. Rakislova N, Cuatrecasas M, Molina A, Rodrigo M, Moreira L, Laguna J, Rodríguez M, Pérez FM, Carlos Laguna J, Merino A. **Signet ring cell carcinocythaemia in an advanced gastric carcinoma**. *International Journal of Laboratory Hematology*. 42(5):e231-e233. I.F.: 2.141

GRANTS FOR RESEARCH IN PROGRESS

Castellví-Bel S. **Caracterización funcional de variantes en nuevos genes candidatos en la predisposición germinal al cáncer colorrectal y el síndrome de poliposis serrada (FUNCTION4GENE).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00878
Duration: 01/01/2018-30/06/2022

Castellví-Bel S. **Identifying biomarkers through translational research for prevention and stratification of colorectal cáncer.**
Sponsored by: European Commission. CE_H2020-COST17sept
Duration: 01/11/2018-30/04/2022

3.4 Neuronal control of metabolism (NeuCoMe)

LOCATION
CEK building, floor 5

KEYWORDS
1. **Hypothalamus**
2. **Neurons**
3. **Mitochondria**
4. **Metabolism**

RELATED DISEASES
1. **Obesity**
2. **Diabetes**

GROUP INVOLVED IN
CIBERdem

Original publications

TOTAL	4
IF	55,98
Mean IF	14,00
Q1	75%
D1	75%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Marc Claret (IDIBAPS)
T. 93 227 54 00 (Ext.: 4552)
mclaret@clinic.cat

RESEARCHERS
Arnaud Obri (IDIBAPS)

ASSISTANT RESEARCHERS
Alicia García Gómez-Valadés (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Iñigo Chivite (IDIBAPS)
Elena Eyre (IDIBAPS)
Roberta Haddad-Tóvolli (IDIBAPS)
Macarena Pozo (IDIBAPS)
Sara Ramírez Flores (IDIBAPS)
Míriam Toledo (IDIBAPS)

TECHNICIANS
Maria Milà (IDIBAPS)

PROBLEM

Humans are the result of evolution within an environment of scarcity, where physical activity and caloric restriction were common. But today's lifestyles, characterised by sedentarism and a dietary excess of fats and carbohydrates, have caused an epidemic of diabetes and obesity.

Unfortunately, non-invasive therapeutic tools are scarce and inefficient. Therefore, it is essential to understand the mechanisms that regulate metabolism and body weight in order to design safe and powerful drugs.

APPROACH

The central nervous system controls many physiological functions, including appetite and body weight.

The group aims to understand the molecular mechanisms through which specific neuronal circuits, and especially hypothalamic ones, regulate food intake, body weight and metabolism. It also investigates the relationship between food and emotional behavior.

IMPACT

The group has established that maintaining the shape of the mitochondria (the part of the cells responsible for providing energy), and therefore their function, within a specific population of neurons, is essential to respond adequately to certain hormones and nutrients. Whenever there are defects in these processes, diabetes and obesity appear.

It is currently investigating, from various perspectives, the role played by mitochondria with respect to appetite and body weight in different neuronal populations. It is also developing paradigms to study in depth the relationships between appetite, cognitive function and emotions.

RESEARCH LINES

- Cell-type specific epigenetics and obesity.

- Eating patterns during pregnancy and hypothalamic programming.

- Endothelial cells: new players in metabolic disorders.

- Feeding behavior and emotions.

- The multifaceted mitochondria: obesity, diabetes and beyond.

PUBLICATIONS

Originals / I.F.: 55.984

1. Figueiredo AM, Villacampa P, Diéguez-Hurtado R, José Lozano J, Kobialka P, Cortazar AR, Martinez-Romero A, Angulo-Urarte A, Franco CA, Claret M, Aransay AM, Adams RH, Carracedo A, Graupera M. **PI3Kβ-Regulated Pericyte Maturation Governs Vascular Remodeling.** *Circulation*. 142(7):688-704. I.F.: 23.603

2. Herkenne S; Ek O; Zamberlan M; Pellattiero A; Chergova M; Chivite I; Novotná E; Rigoni G; Fonseca TB; Samardzic D; Agnellini A; Bean C; Di Benedetto G; Tiso N; Argenton F; Viola A; Soriano ME; Giacomello M; Ziviani E; Sales G; Claret M; Graupera M; Scorrano L. **Developmental and Tumor Angiogenesis Requires the Mitochondria-Shaping Protein Opa1.** *Cell Metabolism.* 31(5):987-1003.e8. I.F.: 21.567

3. Haddad-Tóvolli R; Altirriba J; Obri A; Sánchez EE; Chivite I; Milà-Guasch M; Ramírez S; Gómez-Valadés AG; Pozo M; Burguet J; Velloso LA; Claret M. **Pro-opiomelanocortin (POMC) neuron translatome signatures underlying obesogenic gestational malprogramming in mice.** *Molecular Metabolism.* 36:100963. I.F.: 6.448

4. Marín-Aguilera M, Jiménez N, Reig Ò, Montalbo R, Verma AK, Castellano G, Mengual L, Victoria I, Pereira MV, Milà-Guasch M, García-Recio S, Benítez-Ribas D, Cabezón R, González A, Juan M, Prat A, Mellado B . **Androgen Receptor and Its Splicing Variant 7 Expression in Peripheral Blood Mononuclear Cells and in Circulating Tumor Cells in Metastatic Castration-Resistant Prostate Cancer.** *Cells.* 9(1):203. I.F.: 4.366

Review / I.F.: 4.96

1. Obri A; Serra D; Herrero L; Mera P. **The role of epigenetics in the development of obesity.** *Biochemical Pharmacology.* 177:113973. I.F.: 4.960

GRANTS FOR RESEARCH IN PROGRESS

Claret M. **Hypothalamic control of gut function and microbiota composition: implications for energy balance regulation.**
Sponsored by: Fundació Bancaria "La Caixa".
HealthRes18-00100
Duration: 01/11/2019-31/10/2022

Claret M. **Neuronas POMC: en la interfaz entre la detección de energía y el comportamiento altruista?**
Sponsored by: Ministerio de Economía y Competitividad.
MINECO_BFU2015-72486-EXP
Duration: 01/05/2017-30/04/2020

Claret M. **Investigando las firmas epigenéticas de neuronas POMC en el contexto de la obesidad.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-108175RB-I00
Duration: 01/06/2020-31/05/2023

Claret M. **Decoding mitochondrial nutrient-sensing programs in POMC neurons as key determinants of metabolic health.**
Sponsored by: European Commission.
CE_H2020-ERC-2016_Co
Duration: 01/04/2017-31/03/2022

Claret M. **Mitochondrial fusion in endothelial cells: impact on systemic energy and glucose homeostasis.**
Sponsored by: European Foundation for the Study of Diabetes. INT_EFSD/NOVO_17_01
Duration: 15/02/2018-31/03/2021

DOCTORAL THESES

Claret M. **Endothelial Mitofusin2 deficiency improves systemic metabolic health and delays age-associated decline.**
PhD student: Iñigo Chivite Araiz

3.5 Inflammation and liver disease

LOCATION
CEK building, floor 3

KEYWORDS
1. **Inflammation**
2. **Innate immune cells**
3. **Lipid mediators**
4. **Omics technologies**

RELATED DISEASES
1. **Chronic liver diseases**
2. **Acute on chronic liver failure**
3. **Systemic inflammation**
4. **Organ failure**

GROUP INVOLVED IN
AGAUR_SGR17: 01449

Original publications

TOTAL	13
IF	177,34
Mean IF	13,64
Q1	92%
D1	62%
MA	31%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Joan Clària (HCB)
T. 93 227 54 00 (Ext.: 4784)
jclaria@clinic.cat

EMERITUS
Vicente Arroyo (HCB)

ASSISTANT RESEARCHERS
Esther Titos (HCB)

POST-DOCTORAL RESEARCHERS
José Alcarraz (HCB)
Roger Flores (FCRB)
Cristina López Vicario (FCRB)
Naira Rico (HCB)
Ingrid Wei Zhang (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Mireia Casulleras (FCRB)
Marta Duran (FCRB)

TECHNICIANS
Maria Aguilar (FCRB)
Bryan Javier Contreras (IDIBAPS)
Albert Salvatella (FCRB)
Maria Belén Sánchez Rodríguez (FCRB)

PROBLEM

Chronic liver disease is, among all non-transmissible diseases, the most prevalent in our environment. This is becoming increasingly evident with the growing prevalence of liver disorders associated with the global obesity pandemic.

Within this context, tissue inflammation plays a key role in the early stages of the disease whereas systemic inflammation driving to extra-hepatic organ failures is of utmost importance in the most advanced phases, in this case associated with a high mortality rate.

APPROACH

The group is interested in the study of the molecular and cellular mechanisms of the inflammatory response in liver diseases, especially in the study of the so-called lipid inflammatory mediators.

Within these, we pay special attention to the recently identified pro-resolving lipid mediators, endogenous molecules with intrinsic ability to temper inflammation.

IMPACT

The group has identified new lipid mediators derived from polyunsaturated fatty acids that slow the activation of the innate immune system and promote the resolution of inflammation. One of its great challenges is to transfer these results to the prevention and treatment of liver complications.

RESEARCH LINES

- Cellular mechanisms of inflammation in chronic liver disease.

- Genetic determinants of inflammation in chronic liver disease.

- Molecular mechanisms of inflammation in chronic liver disease.

PUBLICATIONS

Originals / I.F.: 177.34

1. López-Vicario C, Checa A, Urdangarin A, Aguilar F, Alcaraz-Quiles J, Caraceni P, Amorós A, Pavesi M, Gómez-Cabrero D, Trebicka J, Oettl K, Moreau R, Planell N, Arroyo V, Wheelock CE, Clària J. **Targeted lipidomics reveals extensive changes in circulating lipid mediators in patients with acutely decompensated cirrhosis**. *Journal of Hepatology*. 73(4):817-828. I.F.: 20.582

2. Trebicka J, Fernandez J, Papp M, Caraceni P, Laleman W, Gambino C, Giovo I, Uschner FE, Jimenez C, Mookerjee R, Gustot T, Albillos A, Bañares R, Janicko M, Steib C, Reiberger T, Acevedo J, Gatti P, Bernal W, Zeuzem S, Zipprich A, Piano S, Berg T, Bruns T, Bendtsen

F, Coenraad M, Merli M, Stauber R, Zoller H, Ramos JP, Solè C, Soriano G, de Gottardi A, Gronbaek H, Saliba F, Trautwein C, Özdogan OC, Francque S, Ryder S, Nahon P, Romero-Gomez M, Van Vlierberghe H, Francoz C, Manns M, Garcia E, Tufoni M, Amoros A, Pavesi M, Sanchez C, Curto A, Pitarch C, Putignano A, Moreno E, Shawcross D, Aguilar F, Clària J, Ponzo P, Jansen C, Vitalis Z, Zaccherini G, Balogh B, Vargas V, Montagnese S, Alessandria C, Bernardi M, Ginès P, Jalan R, Moreau R, Angeli P, Arroyo V, PREDICT STUDY group of the EASL-CLIF Consortium. **The PREDICT study uncovers three clinical courses in acutely decompensated cirrhosis with distinct pathophysiology.** *Journal of Hepatology.* 73(4):842-854. I.F.: 20.582

3. Trieb M; Rainer F; Stadlbauer V; Douschan P; Horvath A; Binder L; Trakaki A; Knuplez E; Scharnagl H; Stojakovic T; Heinemann Á; Mandorfer M; Paternostro R; Reiberger T; Pitarch C; Amorós A; Gerbes A; Caraceni P; Alessandria C; Moreau R; Clària J; Marsche G; Stauber RE. **HDL-related biomarkers are robust predictors of survival in patients with chronic liver failure.** *Journal of Hepatology.* 73(1):113-120. I.F.: 20.582

4. Moreau R, Clària J, Aguilar F, Fenaille F, Lozano JJ, Junot C, Colsch B, Caraceni P, Trebicka J, Pavesi M, Alessandria C, Nevens F, Saliba F, Welzel TM, Albillos A, Gustot T, Fernández J, Moreno C, Baldassarre M, Zaccherini G, Piano S, Montagnese S, Vargas V, Genescà J, Solà E, Bernal W, Butin N, Hautbergue T, Cholet S, Castelli F, Jansen C, Steib C, Campion D, Mookerjee R, Rodríguez-Gandía M, Soriano G, Durand F, Benten D, Bañares R, Stauber RE, Gronbaek H, Coenraad MJ, Ginès P, Gerbes A, Jalan R, Bernardi M, Arroyo V, Angeli P, CANONIC Study Investigators of the EASL Clif Consortium, Grifols Chair, European Foundation for the Study of Chronic Liver Failure (EF Clif). **Blood metabolomics uncovers inflammation-associated mitochondrial dysfunction as a potential mechanism underlying ACLF.** *Journal of Hepatology.* 72(4):688-701. I.F.: 20.582

5. Trebicka J, Fernandez J, Papp M, Caraceni P, Laleman W, Gambino C, Giovo I, Uschner FE, Jansen C, Jimenez C, Mookerjee R, Gustot T, Albillos A, Bañares R, Jarcuska P, Steib C, Reiberger T, Acevedo J, Gatti P, Shawcross DL, Zeuzem S, Zipprich A, Piano S, Berg T, Bruns T, Danielsen KV, Coenraad M, Merli M, Stauber R, Zoller H, Ramos JP, Solé C, Soriano G, de Gottardi A, Gronbaek H, Saliba F, Trautwein C, Kani HT, Francque S, Ryder S, Nahon P, Romero-Gomez M, Van Vlierberghe H, Francoz C, Manns M, Garcia-Lopez E, Tufoni M, Amoros A, Pavesi M, Sanchez C, Praktiknjo M, Curto A, Pitarch C, Putignano A, Moreno E, Bernal W, Aguilar F, Clària J, Ponzo P, Vitalis Z, Zaccherini G, Balogh B, Gerbes A, Vargas V, Alessandria C, Bernardi M, Ginès P, Moreau R, Angeli P, Jalan R, Arroyo V, PREDICT STUDY group of the EASL-CLIF CONSORTIUM. **PREDICT identifies precipitating events associated with the clinical course of acutely decompensated cirrhosis.** *Journal of Hepatology.* S0168-8278(20):33772-7. I.F.: 20.582

6. Zaccherini G, Aguilar F, Caraceni P, Clària J, Lozano JJ, Fenaille F, Castelli F, Junot C, Curto A, Formentin C, Weiss E, Bernardi M, Jalan R, Angeli P, Moreau R, Arroyo V. **Assessing the role of amino acids in systemic inflammation and organ failure in patients with ACLF.** *Journal of Hepatology.* S0168-8278(20):33821-6. I.F.: 20.582

7. Casulleras M, Flores-Costa R, Duran-Güell M, Alcaraz-Quiles J, Sanz S, Titos E, López-Vicario C, Fernández J, Horrillo R, Costa M, de la Grange P, Moreau R, Arroyo V, Clària J. **Albumin internalizes and inhibits endosomal TLR signaling in leukocytes from patients with decompensated cirrhosis.** *Science Translational Medicine.* 12(566):eaax5135. I.F.: 16.304

8. Flores-Costa R, Duran-Güell M, Casulleras M, López-Vicario C, Alcaraz-Quiles J, Diaz A, Lozano JJ, Titos E, Hall K, Sarno R, Masferrer JL, Clària J. **Stimulation of soluble guanylate cyclase exerts antiinflammatory actions in the liver through a VASP/NF-κB/NLRP3 inflammasome circuit.** *Proceedings of the National Academy of Sciences of the United States of America.* 117(45):28263-28274. I.F.: 9.412

9. Fernández J, Angeli P, Trebicka J, Merli M, Gustot T, Alessandria C, Aagaard NK, de Gottardi A, Welzel TM, Gerbes A, Soriano G, Vargas V, Albillos A, Salerno F, Durand F, Bañares R, Stauber R, Prado V, Arteaga M, Hernández-Tejero M, Aziz F, Morando F, Jansen C, Lattanzi B, Moreno C, Campion D, Gronbaek H, Garcia R, Sánchez C, García E, Amorós A, Pavesi M, Clària J, Moreau R, Arroyo V . **Efficacy of Albumin Treatment for Patients with Cirrhosis and Infections Unrelated to Spontaneous Bacterial Peritonitis.** *Clinical Gastroenterology and Hepatology.* 18(4):963-973. I.F.: 8.549

10. Schaapman JJ; Amoros À; van der Reijden JJ; Laleman W; Zeuzem S; Bañares R; Jalan R; Arroyo V; Clària J; Verspaget HW; Coenraad MJ. **Genetic variants of innate immunity receptors are associated with mortality in cirrhotic patients with bacterial infection.** *Liver International.* 40(3):646-653. I.F.: 5.175

11. Pal, Anandita; Al-Shaer, Abrar E; Guesdon, William; Torres, Maria J; Armstrong, Michael; Quinn, Kevin; Davis, Traci; Reisdorph, Nichole; Neufer, P Darrell; Spangenburg, Espen E; Carroll, Ian; Bazine, Richard P; Halade, Ganesh, V; Clària, Joan; Shaikh, Saame Raza. **Resolvin E1 derived from eicosapentaenoic acid prevents hyperinsulinemia and hyperglycemia in a host genetic manner.** *Faseb Journal.* 34(8):10640-10656. I.F.: 4.966

12. Brouwers H, Jónasdóttir HS, Kuipers ME, Kwekkeboom JC, Auger JL, Gonzalez-Torres M, López-Vicario C, Clària J, Freysdottir J, Hardardottir I, Garrido-Mesa J, Norling LV, Perretti M, Huizinga TWJ, Kloppenburg M, Toes REM, Binstadt B, Giera M, Ioan-Facsinay A. **Anti-Inflammatory and Proresolving Effects of the Omega-6 Polyunsaturated Fatty Acid Adrenic Acid.** *Journal of Immunology.* 205(10):2840-2849. I.F.: 4.886

13. Leineweber, Can G; Pietzner, Anne; Zhang, Ingrid W; Blessin, Usha B; Rothe, Michael; Schott, Eckart; Schebb, Nils H; Weylandt, Karsten H. **Assessment of the Effect of Sorafenib on Omega-6 and Omega-3 Epoxyeicosanoid Formation in Patients with Hepatocellular Carcinoma.** *International Journal of Molecular Sciences.* 21(5):1875. I.F.: 4.556

Review / I.F.: 28.551

1. Bernardi M, Angeli P, Clària J, Moreau R, Gines P, Jalan R, Caraceni P, Fernandez J, Gerbes AL, O'Brien AJ, Trebicka J, Thevenot T, Arroyo V. **Albumin in decompensated cirrhosis: new concepts and perspectives.** *Gut.* 69(6):1127-1138. I.F.: 19.819

2. Casulleras M, Zhang IW, López-Vicario C, Clària J. **Leukocytes, Systemic Inflammation and Immunopathology in Acute-on-Chronic Liver Failure**. *Cells.* 9(12):2632. I.F.: 4.366

3. Nielsen MC; Hvidbjerg Gantzel R; Clària J; Trebicka J; Møller HJ; Grønbæk H. **Macrophage Activation Markers, CD163 and CD206, in Acute-on-Chronic Liver Failure.** *Cells*. 9(5):1175. I.F.: 4.366

Letters / I.F.: 40.401

1. Schwarzkopf KM, Eberle L, Uschner FE, Klein S, Schierwagen R, Mücke MM, Schaefer L, Clària J, Zeuzem S, Hintermann E, Christen U, Lange CM, Trebicka J, Welsch C. **Interleukin-22 in acute-on-chronic liver failure: A matter of ineffective levels, receptor dysregulation or defective signalling?** *Journal of Hepatology*. 73(4):980-982. I.F.: 20.582

2. Praktiknjo M, Schierwagen R, Monteiro S, Ortiz C, Uschner FE, Jansen C, Clària J, Trebicka J. **Hepatic inflammasome activation as origin of Interleukin-1α and Interleukin-1β in liver cirrhosis.** *Gut*. I.F.: 19.819

Case Reports / I.F.: 7.414

1. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Clària J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine*. 48(12):e1350-e1355. I.F.: 7.414

GRANTS FOR RESEARCH IN PROGRESS

Clària J. **Investigació hepàtica: recerca bàsica i experimental.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01449
Duration: 01/01/2017-30/09/2021

Clària J. **Mecanismos responsables de una respuesta inflamatoria inadecuada y de fallo orgánico múltiple en pacientes con enfermedad hepática avanzada: Papel de los mediadores lipídicos.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-105240RB-I00
Duration: 01/06/2020-31/05/2023

Clària J, Ginés P. **MICROBiome-based biomarkers to PREDICT decompensation of liver cirrhosis and treatment response.**
Sponsored by: European Commission.
CE_H2020-SC1_18_1s
Duration: 01/01/2019-31/03/2025

Clària J. **Decompensated cirrhosis: identification of new combinatorial therapies based on system approaches.**
Sponsored by: European Commission.
CE_H2020-SC1_2019_2s
Duration: 01/04/2020-30/09/2025

Titos E. **Pan-European Network in Lipidomics and EpiLipidomics.**
Sponsored by: European Commission.
COST_ACTION_CA19105
Duration: 01/12/2020-01/12/2024

DOCTORAL THESES

Claria J. **Effects of soluble guanylate cyclase stimulators on cgmp signaling pathway and the inflammation-fibrosis axis in nonalcoholic steatohepatitis.**
PhD student: Roger Flores Costa

3.6 Translational control in liver disease and cancer

LOCATION
CEK building, floor 4

KEYWORDS
1. **Liver cancer**
2. **Translational control**
3. **Fibrosis**
4. **Steatosis**
5. **Obesity**

RELATED DISEASES
1. **Liver cirrhosis**
2. **Liver steatosis**
3. **Liver cancer**

GROUP INVOLVED IN
CIBEREHD

Original publications

TOTAL	1
IF	17,37
Mean IF	17,37
Q1	100%
D1	100%
MA	100%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Mercedes Fernández Lobato (IDIBAPS)
T. 606 958 606
mercefernandez@ub.edu
mlobato@clinic.cat

ASSISTANT RESEARCHERS
Marc Mejias (CIBER)
Salvador Naranjo Suárez (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Javier Gallego (CIBER)

PRE-DOCTORAL RESEARCHERS
Alexandra Balvey (IDIBAPS)
Nuria Pell (IDIBAPS)
Marta Ramírez (IDIBAPS)

PROBLEM

Chronic liver diseases, including liver steatosis, cirrhosis and cancer, affect millions of human beings and are leading causes of death and liver transplantation worldwide. They are therefore grave public health problems and consequently a field of considerable pharmaceutical interest. Worryingly, the incidence of liver disease is dramatically rising due to the global epidemics of obesity/overweight that has become a major socioeconomic challenge, affecting both adults and children.

In our group, we aim to dissect the mechanisms underpinning chronic liver disease and the link obesity-liver disease, with a particular interests in unraveling how dysregulated posttranscriptional reprogramming (leading to aberrant protein expression) facilitates disease progression and aggravation. The ultimate goal is to identify novel therapeutic targets that help design new and more effective treatments.

APPROACH

We use a combination of mouse models and cell-based models (human and mouse), knockout mice, high-throughput genomic approaches, and basic molecular and cellular biology.

IMPACT

Our group has made key contributions to the understanding of chronic liver disease:

- Posttranscriptional reprogramming of metabolism is a driver of hepatic stellate cell activation in liver fibrosis (Gastroenterology 2020).

- Adaptive translational response to ER stress mediated by CPEB4 counteracts hepatic steatosis (Nature Cell Biology 2017).

- Targeted siRNA therapeutics are novel treatment tools for liver disease (Scientific Reports 2017).

- Vascular stem cells mediate a new mechanism responsible for formation of abnormal vessels in chronic liver disease (Gut 2017).

- CPEB proteins are critical for pathologic angiogenesis in chronic liver disease (Gastroenterology 2016).

- Endogenous angiogenesis inhibitors have potent antiangiogenic and antifibrogenic therapeutic activity in chronic liver disease (Gut 2015; Hepatology 2014).

- Angiogenesis is a critical hallmark of chronic liver disease with therapeutic potential (Gastroenterology 2004; Journal Hepatology 2005; Journal Hepatology 2006; Gut 2007; Hepatology 2007; Journal Hepatology 2009; Hepatology 2009; Journal of Hepatology 2010; among others).

RESEARCH LINES

- Which is the role of translational control of gene expression in liver disease and cancer?

- What intrinsic (cell autonomous) mechanisms regulate the function of liver cells and their interplay with the local microenvironment or niche, and how are they deregulated during liver disease and cancer?

- What is the significance and underlying mechanisms linking obesity with liver disease and cancer?

- How does deregulation of pathways that control angiogenesis contribute to progression of liver disease and cancer?

PUBLICATIONS

Originals / I.F.: 17.373

1. Mejias M, Gallego J, Naranjo-Suarez S, Ramirez M, Pell N, Manzano A, Suñer C, Bartrons R, Mendez R, Fernandez M. **CPEB4 Increases Expression of PFKFB3 to Induce Glycolysis and Activate Mouse and Human Hepatic Stellate Cells, Promoting Liver Fibrosis.** *Gastroenterology.* 159(1):273-288. I.F.: 17.373

Review / I.F.: 4.556

1. Torres S; Abdullah Z; Brol MJ; Hellerbrand C; Fernandez M; Fiorotto R; Klein S; Königshofer P; Liedtke C; Lotersztajn S; Nevzorova YA; Schierwagen R; Reiberger T; Uschner FE; Tacke F; Weiskirchen R; Trebicka J. **Recent advances in practical methods for liver cell biology: A short overview.** *International Journal of Molecular Sciences.* 21(6):2027. I.F.: 4.556

GRANTS FOR RESEARCH IN PROGRESS

Fernández-Lobato M. **Metabolic reprogramming in obesity-driven liver cancer: mechanisms, functions and therapeutic opportunities.**
Sponsored by: Fundació la Marató de TV3. Cancer_19
Duration: 20/07/2020-19/07/2023

Fernández-Lobato M. **Molecular regulation of the progression from hepatic steatosis to cirrhosis and hepatocellular carcinoma: Role and therapeutic potential of CPEB proteins.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_GrupoEstable15
Duration: 01/09/2015-31/12/2020

Fernández-Lobato M. **Papel y potencial terapéutico de la respuesta a proteinas desplegadas en el cáncer de hígado asociado a la obesidad.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2017-87988-R
Duration: 01/01/2018-30/06/2021

DOCTORAL THESES

Fernández-Lobato. **MCPEB4-driven adipocyte reprogramming is required for adipogenesis and pathological inflammation in obesity-driven liver cancer: mechanisms, functions and therapeutic opportunities.**
PhD student: Núria Pell Vidal

Fernández-Lobato M. **Role and therapeutic potential of CPEB4 in the development and progression of liver disease under obesity.**
PhD student: Marta Ramírez Pedraza

3.7 Mitochondrial regulation of cell death and steatohepatitis

LOCATION
CEK building, floor 4

KEYWORDS
1. **Cholesterol/sphingolipids**
2. **Mitochondrial death**
3. **Oxidative stress**
4. **Alcoholic and non-alcoholic steatohepatitis (ASH/NASH)**
5. **Lipid therapies**

RELATED DISEASES
1. **Alcoholic (ASH) and non alcoholic steatohepatitis (NASH)**
2. **Hepatocellular carcinoma (HCC)**
3. **Lysosomal storage diseases (LSD)**
4. **Alzheimer disease**

GROUP INVOLVED IN
AGAUR_SGR17: 00225, 01112
CIBEREHD
REDES DE INVESTIGACIÓN

Original publications

TOTAL	10
IF	77,38
Mean IF	7,74
Q1	70%
D1	30%
MA	10%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
José Carlos Fernández-Checa
(IIBB-CSIC)
T. 93 227 57 09
josecarlos.fernandezcheca@iibb.csic.es

RESEARCHERS
Joan Caballeria (HCB)
Carmen García Ruiz (IIBB-CSIC)
Anna Moles (IIBB-CSIC)
Pilar Navarro (IIBB-CSIC)

ASSISTANT RESEARCHERS
Laura Conde (CIBER)

POST-DOCTORAL RESEARCHERS
Sandra Torres (IIBB-CSIC)

PRE-DOCTORAL RESEARCHERS
Naroa Insausti (IIBB-CSIC)
Paula Segalés (IIBB-CSIC)
Estel Solsona (IIBB-CSIC)

TECHNICIANS
Susana Núñez (CIBER)

COLLABORATORS
Óscar Santamaría (IIBB-CSIC)
María Fernández Fernández (IIBB-CSIC)
María Muñoz (IIBB-CSIC)
Paloma Ruíz Blázquez (IIBB-CSIC)

PROBLEM

The group focuses on the study of the role of lipids, such as cholesterol, in regulating the function of the organelles that supply energy to cells, i.e., the mitochondria.
Good mitochondrial function is essential for cell survival. That is why the laboratory investigates how variations in mitochondrial function affect the development of liver diseases, such as steatohepatitis and its progression towards liver cancer, and neurodegenerative diseases such as Alzheimer's.

Better knowledge of the biological mechanisms that control these diseases will allow the team to design better and more specific drugs.

APPROACH

The laboratory uses mice to investigate the cellular and molecular bases related to the progression of liver disease and Alzheimer's disease. And it applies therapeutic interventions to improve the final outcome of the disorder.
It is equipped with genetically modified mice that allow it to study what role different proteins play in specific liver cells. In addition, through an innovative mouse model with a liver repopulated with human cells, it can corroborate its results within a scenario that is more similar to that of the patient.

IMPACT

The group's research explores the knowledge of the biological mechanisms that modulate mitochondrial function and how this modulation affects the progression of liver diseases and Alzheimer's disease.

One of the group's most important discoveries has been how mitochondrial cholesterol influences the development of diseases of the liver and neuronal function. The various lines of research in the laboratory will allow it to better understand the biology of these conditions, in order to design new drugs or to reuse existing ones for treatment.

RESEARCH LINES

- Contribution of sphingolipids and cholesterol in acute liver failure.

- ER stress-mitochondrial cholesterol axis in obesity-associated insulin resistance and comorbidities.

- Lysosomal proteases role during tissue remodeling and regeneration in liver and kidney injury.

- Mechanisms responsible for cholesterol transport to the mitochondria and role in NASH, hepatocellular carcinoma and Alzheimer's disease.

- Mitochondrial cholesterol and glycosphingolipids in liver fibrosis. Reciprocal regulation between HIF1a and StARD1 in steatohepatitis and hepatocellular carcinoma.

- Sphingolipid and mitochondrial oxidative-stress regulation of cell death.

- Translational research in nonalcoholic steatohepatitis (NASH): development of NASH in a humanized mouse model to identify potential targets in human NASH.

PUBLICATIONS

Originals / I.F.: 77.38

1. Ampuero J, Aller R, Gallego-Durán R, Crespo J, Calleja JL, García-Monzón C, Gómez-Camarero J, Caballería J, Lo Iacono O, Ibañez L, García-Samaniego J, Albillos A, Francés R, Fernández-Rodríguez C, Diago M, Soriano G, Andrade RJ, Latorre R, Jorquera F, Morillas RM, Escudero D, Estévez P, Guerra MH, Augustín S, Banales JM, Aspichueta P, Benlloch S, Rosales JM, Salmerón J, Turnes J, Romero Gómez M, HEPAmet Registry. **Significant fibrosis predicts new-onset diabetes mellitus and arterial hypertension in patients with NASH.** *Journal of Hepatology*. 73(1):17-25. I.F.: 20.582

2. Massey V, Parrish A, Argemi J, Moreno M, Mello A, García-Rocha M, Altamirano J, Odena G, Dubuquoy L, Louvet A, Martinez C, Adrover A, Affò S, Morales-Ibanez O, Sancho-Bru P, Millán C, Alvarado-Tapias E, Morales-Arraez D, Caballería J, Mann J, Cao S, Sun Z, Shah V, Cameron A, Mathurin P, Snider N, Villanueva C, Morgan TR, Guinovart J, Vadigepalli R, Bataller R. **Integrated Multiomics Reveals Glucose Use Reprogramming and Identifies a Novel Hexokinase in Alcoholic Hepatitis**. *Gastroenterology*. 160(5):1725-1740.e2. I.F.: 17.373

3. Ampuero, Javier; Pais, Raluca; Aller, Rocio; Gallego-Duran, Rocio; Crespo, Javier; Garcia-Monzon, Carmelo; Boursier, Jerome; Vilar, Eduardo; Petta, Salvatore; Zheng, Ming-Hua; Escudero, Desamparados; Luis Calleja, Jose; Aspichueta, Patricia; Diago, Moises; Miguel Rosales, Jose; Caballeria, Joan; Gomez-Camarero, Judith; Lo Iacono, Oreste; Benlloch, Salvador; Albillos, Agustin; Turnes, Juan; Banales, Jesus M; Ratziu, Vlad; Romero-Gomez, Manuel; Agustin, Salvador; Jorquera, Francisco; Frances, Ruben; Garcia-Samaniego, Javier; Salmeron, Javier; Fernandez-Rodriguez, Conrado; Estevez, Pamela; Andrade, Raul; Soriano, German; Fernandez-Bermejo, Miguel; Arias Loste, Maria Teresa; Siguenza, Rebeca; Giannetti, Aurora; del Pozo Maroto, Elvira; HEPAmet Registry. **Development and Validation of Hepamet Fibrosis Scoring System-A Simple, Noninvasive Test to Identify Patients With Nonalcoholic Fatty Liver Disease With Advanced Fibrosis.** *Clinical Gastroenterology and Hepatology*. 18(1):216-225.e5. I.F.: 8.549

4. Kaminsky-Kolesnikov Y; Rauchbach E; Abu-Halaka D; Hahn M; García-Ruiz C; Fernandez-Checa JC; Madar Z; Tirosh O. **Cholesterol Induces Nrf-2-and HIF-1 α-Dependent Hepatocyte Proliferation and Liver Regeneration to Ameliorate Bile Acid Toxicity in Mouse Models of NASH and Fibrosis.** *Oxidative Medicine and Cellular Longevity*. 5393761. I.F.: 5.076

5. Juárez-Flores DL; Ezquerra M; Gonzàlez-Casacuberta Ï; Ormazabal A; Morén C; Tolosa E; Fucho R; Guitart-Mampel M; Casado M; Valldeoriola F; de la Torre-Lara J; Muñoz E; Tobías E; Compta Y; García-García FJ; García-Ruiz C; Fernandez-Checa JC; Martí MJ; Grau JM; Cardellach F; Artuch R; Fernández-Santiago R; Garrabou G. **Disrupted mitochondrial and metabolic plasticity underlie comorbidity between age-related and degenerative disorders as parkinson disease and type 2 diabetes mellitus.** *Antioxidants*. 9(11):1063. I.F.: 5.014

6. Arenas, Fabian; Castro, Fernanda; Nunez, Susana; Gay, Gemma; Garcia-Ruiz, Carmen; Fernandez-Checa, Jose C. **STARD1 and NPC1 expression as pathological markers associated with astrogliosis in post-mortem brains from patients with Alzheimer's disease and Down syndrome.** *Aging-Us*. 12(1):571-592. I.F.: 4.831

7. Guerrero PE; Miró L; Wong BS; Massaguer A; Martínez-Bosch N; Llorens Rd; Navarro P; Konstantopoulos K; Llop E; Peracaula R. **Knockdown of α2,3-Sialyltransferases Impairs Pancreatic Cancer Cell Migration, Invasion and E-selectin-Dependent Adhesion.** *International Journal of Molecular Sciences*. 21(17):1-24. I.F.: 4.556

8. Zanieri F; Levi A; Montefusco D; Longato L; De Chiara F; Frenguelli L; Omenetti S; Andreola F; Luong TV; Massey V; Caballeria J; Fondevila C; Shanmugavelandy SS; Fox T; Mazza G; Argemi J; Bataller R; Cowart LA; Kester M; Pinzani M; Rombouts K. **Exogenous Liposomal Ceramide-C6 Ameliorates Lipidomic Profile, Energy Homeostasis, and Anti-Oxidant Systems in NASH.** *Cells*. 9(5):1237. I.F.: 4.366

9. Chen J, Argemi J, Odena G, Xu MJ, Cai Y, Massey V, Parrish A, Vadigepalli R, Altamirano J, Cabezas J, Gines P, Caballeria J, Snider N, Sancho-Bru P, Akira S, Rusyn I, Gao B, Bataller R. **Hepatic lipocalin 2 promotes liver fibrosis and portal hypertension**. *Scientific Reports*. 10(1):15558. I.F.: 3.998

10. Palma E, Riva A, Moreno C, Odena G, Mudan S, Manyakin N, Miquel R, Degré D, Trepo E, Sancho-Bru P, Altamirano J, Caballeria J, Zamalloa A, Menon K, Heaton N, Williams R, Bataller R, Chokshi S. **Perturbations in mitochondrial dynamics are closely involved in the progression of Alcoholic Liver Disease.** *Alcoholism-Clinical and Experimental Research*. 44(4):856-865. I.F.: 3.035

Review / I.F.: 29.645

1. Garcia-Ruiz C; de la Rosa LC; Ribas V; Fernandez-Checa JC. **Mitochondrial cholesterol and cancer.** *Seminars in Cancer Biology*. S1044-579X(20):30172-3. I.F.: 11.090

2. Navarro P; Martínez-Bosch N; Blidner AG; Rabinovich GA. **Impact of Galectins in Resistance to Anticancer Therapies.** *Clinical Cancer Research*. 26(23):6086-6101. I.F.: 10.107

3. Manero-Ruperez, Noemi; Martinez-Bosch, Neus; Barranco, Luis E; Visa, Laura; Navarro, Pilar. **The Galectin Family as Molecular Targets: Hopes for Defeating Pancreatic Cancer**. *Cells*. 9(3):689. I.F.: 4.366

4. Insausti-Urkia N; Solsona-Vilarrasa E; Garcia-Ruiz C; Fernandez-Checa JC. **Sphingomyelinases and liver diseases.** *Biomolecules*. 10(11):1-25. I.F.: 4.082

Editorial / I.F.: 4.225

1. Eid N; Menon MB; Thomes P; Zeng T; Raimundo N; Fernandez-Checa JC; Wang L; Ito Y; Otsuki Y; Adeghate E. **Editorial: Autophagy and related transcription factors in liver and gut diseases.** *Frontiers in Pharmacology*. 10:1610. I.F.: 4.225

GRANTS FOR RESEARCH IN PROGRESS

Fernández-Checa JC. **STARD1 and SAB in human alcoholic liver disease: validation in a murine model with humanized liver.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
MCIU_PID2019-111669RB
Duration: 01/09/2020-31/08/2023

Fernández-Checa JC. **Metabolic Diseases and Cancer.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
MCIU_RED2018-102799-T
Duration: 01/01/2020-31/12/2021

Fernández-Checa JC. **Zonal distribution of the SARS CoV-2 receptor ACE2 and its partner TMPRSS2 in chronic liver disease.**
Sponsored by: Spanish Association for the Study of the Liver. AEEH_COVID2020
Duration: 01/09/2020 -31/8/2021

Fernández-Checa JC. **Therapeutic Potential of SAMe in NPC Disease.**
Sponsored by: Together Strong NPC Foundation-USA. TSNPC2020
Duration: 31/12/2020 -30/12/2021

3.8 Gene therapy and cancer

LOCATION
CEK building, floor 2

KEYWORDS
1. **Cancer**
2. **Oncolytic adenovirus**
3. **Organoids**
4. **Gene therapy**

RELATED DISEASES
1. **Pancreatic cancer**
2. **Glutaric aciduria**

GROUP INVOLVED IN
AGAUR_SGR17: 00861
CIBERER

Original publications

TOTAL	9
IF	60,17
Mean IF	6,69
Q1	67%
D1	33%
MA	33%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Cristina Fillat (IDIBAPS)
T. 93 227 54 00 (Ext.: 4579)
cfillat@clinic.cat

RESEARCHERS
Fabio Ausania (HCB)

POST-DOCTORAL RESEARCHERS
Andrea Arcas García (IDIBAPS)
Sabrina Gea (CIBER)

PRE-DOCTORAL RESEARCHERS
Anna Mateu (IDIBAPS)
Marc Otero (IDIBAPS)
Silvia Pascual Sabater (IDIBAPS)

ADMINISTRATIVE STAFF
Ricardo Attilio Cipollina (IDIBAPS)

PROBLEM

Changes in the genome of cells often cause disorders such as cancer or hereditary genetic diseases. A precise knowledge of these changes and their impact on pathophysiology helps us to better understand these diseases.

In addition, a knowledge of genetic alterations is very valuable for therapeutics, because it enables innovative, often sophisticated but highly specific therapies that seek maximum efficacy to be developed.

APPROACH

The group studies the molecular and cellular bases of pancreatic cancer, taking advantage of this knowledge to design new therapies based on the use of oncolytic adenoviruses.

These viruses are capable of replicating, amplifying and disintegrating cancer cells selectively and activating a response from the immune system to attack the tumour.
The group also investigates new therapeutic strategies based on gene therapy and/or gene editing, for the treatment of hereditary metabolic diseases.

IMPACT

Pancreatic cancer is a disease with a very poor prognosis: five years after diagnosis, only 7% of patients have survived. The research the group conducts allows it to advance in its knowledge of this tumour, in order to design and test new treatments to improve its progress.

In recent years, advances in gene therapy have provided new treatments for diseases that to date were incurable. In this sense, the group believes that the new gene therapy designs that it is developing will contribute towards responding to some of the hereditary metabolic diseases.

RESEARCH LINES

- Oncolytic virotherapies against pancreatic cancer.

- Preclinical gene therapy/genome editing studies for metabolic rare diseases.

- Understanding pancreatic carcinogenesis.

PUBLICATIONS

Originals / I.F.: 60.171

1. Bonjoch L, Franch-Expósito S, Garre P, Belhadj S, Muñoz J, Arnau-Collell C, Díaz-Gay M, Gratacós-Mulleras A, Raimondi G, Esteban-Jurado C, Soares de Lima Y, Herrera-Pariente C, Cuatrecasas M, Ocaña T, Castells A, Fillat C, Capellá G, Balaguer F, Caldés T, Valle L, Castellví-Bel S. **Germline Mutations in FAF1 Are Associated With Hereditary Colorectal Cancer.** *Gastroenterology*. 159(1):227-240. I.F.: 17.373

2. Ikemori R, Gabasa M, Duch P, Vizoso M, Bragado P, Arshakyan M, Luis IC, Marín A,

Morán S, Castro M, Fuster G, Gea-Sorli S, Jauset T, Soucek L, Montuenga LM, Esteller M, Monsó E, Peinado VI, Gascon P, Fillat C, Hilberg F, Reguart N, Alcaraz J. **Epigenetic SMAD3 repression in tumor-associated fibroblasts impairs fibrosis and response to the antifibrotic drug nintedanib in lung squamous cell carcinoma.** *Cancer Research.* 80(2):276-290. I.F.: 9.727

3. Brugada-Vilà P; Cascante A; Lázaro MÁ; Castells-Sala C; Fornaguera C; Rovira-Rigau M; Albertazzi L; Borros S; Fillat C. **Oligopeptide-modified poly(beta-amino ester)s-coated AdNuPARmE1A: Boosting the efficacy of intravenously administered therapeutic adenoviruses.** *Theranostics.* 10(6):2744-2758. I.F.: 8.579

4. Vila-Navarro E, Fernandez-Castañer E, Rovira-Rigau M, Raimondi G, Vila-Casadesus M, Lozano JJ, Soubeyran P, Iovanna J, Castells A, Fillat C, Gironella M. **MiR-93 is related to poor prognosis in pancreatic cancer and promotes tumor progression by targeting microtubule dynamics.** *Oncogenesis.* 9(5):43. I.F.: 6.119

5. Raimondi G; Mato-Berciano A; Pascual-Sabater S; Rovira-Rigau M; Cuatrecasas M; Fondevila C; Sánchez-Cabús S; Begthel H; Boj SF; Clevers H; Fillat C. **Patient-derived pancreatic tumour organoids identify therapeutic responses to oncolytic adenoviruses.** *Ebiomedicine.* 56:102786. I.F.: 5.736

6. Farrera-Sal M, de Sostoa J, Nuñez-Manchón E, Moreno R, Fillat C, Bazan-Peregrino M, Alemany R. **Arming Oncolytic Adenoviruses: Effect of Insertion Site and Splice Acceptor on Transgene Expression and Viral Fitness.** *International Journal of Molecular Sciences.* 21(14):5158. I.F.: 4.556

7. Murillo-Cuesta S; Artuch R; Asensio F; de la Villa P; Dierssen M; Enríquez JA; Fillat C; Fourcade S; Ibáñez B; Montoliu L; Oliver E; Pujol A; Salido E; Vallejo M; Varela-Nieto I. **The Value of Mouse Models of Rare Diseases: A Spanish Experience.** *Frontiers in Genetics.* 11:583932. I.F.: 3.260

8. Riquelme F, Muñoz C, Ausania F, Hessheimer AJ, Torres F, Calatayud D, Sandomenico R, García Pérez R, Ferrer J, Fuster J, García-Valdecasas JC, Fondevila C. **Laparoscopic versus open hemihepatectomy: comprehensive comparison of complications and costs at 90 days using a propensity method.** *Updates in Surgery.* 72(4):1041-1051. I.F.: 2.587

9. Ausania F, Al Shwely F, Farguell J, Beltrán J, Calatayud D, Sánchez-Cabús S, Ferrer J, Rull R, Fuster J, García-Valdecasas JC, Martínez-Palli G, Fondevila C. **Factors Associated with Prolonged Recipient Hepatectomy Time During Liver Transplantation: A Single-Centre Experience.** *World Journal of Surgery.* 44(10):3486-3490. I.F.: 2.234

Review / I.F.: 12.252

1. Boni J, Rubio-Perez C, López-Bigas N, Fillat C, de la Luna S. **The DYRK Family of Kinases in Cancer: Molecular Functions and Therapeutic Opportunities.** *Cancers.* 12(8):2106. I.F.: 6.126

2. Farrera-Sal M., Fillat C., Alemany R. **Effect of transgene location, transcriptional control elements and transgene features in armed oncolytic adenoviruses.** *Cancers.* 12(4):1034. I.F.: 6.126

Letters / I.F.: 5.676

1. Hessheimer AJ, Morales X, Ginestá C, Turrado V, Borin A, Ausania F, Bravo R, Fondevila C, Lacy AM. **Where have all the appendicitis gone? patterns of urgent surgical admissions during the COVID19 pandemic.** *British Journal of Surgery.* 107(11):e545-e546. I.F.: 5.676

GRANTS FOR RESEARCH IN PROGRESS

Fillat C. **DYRK1A inhibition to remodel tumor stroma and sensitize immune checkpoint blockade therapies in pancreatic cancer.**
Sponsored by: Fundació la Marató de TV3.
Cancer_19
Duration: 30/07/2020-29/07/2023

Fillat C. **Adenovirus oncolíticos protegidos frente anticuerpos neutralizantes y optimizados para la expresión de transgenes y reprogramación del estroma de tumores pancreáticos.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_-BIO2017-89754-C2-2-R
Duration: 01/01/2018-30/09/2021

Fillat C. **Adeno-associated viral gene therapy with AAV9-GCDH to correct glutaric aciduria type I in Gcdh -/- mice.**
Sponsored by: Fundación Ramón Areces.
CIVP19S8539
Duration: 03/04/2019-02/04/2022

Fillat C, Ausania F, Vaquero EC. **Farmacotipificación de pacientes con cáncer de páncreas mediante organoides autogénicos.**
Sponsored by: Fundación Mutua Madrileña.
Duration: 30/09/2019-29/09/2022

Fillat C. **Immunological incompatibility as a basis for cancer curing and vaccination.**
Sponsored by: European Commission.
CE_H2020-FETOPN19-2
Duration: 01/10/2020-30/09/2023

DOCTORAL THESES

Fillat C. **Broadening adenoviral oncolysis in PDAC: Interrogation of patient-derived organoids for personalized virotherapy and modulation of miRNA content to boost adenoviral potency.**
PhD student: Giulia Raimondi

Fillat C. **Adaptación del uso de codones de transgenes terapéuticos, un nuevo concepto en el diseño de adenovirus oncolíticos armados.**
PhD student: Estela Nuñez-Manchón

3.9 Liver transplantation and graft viability

LOCATION
CEK building, floor 3

KEYWORDS
1. **Liver transplantation**
2. **Graft viability**
3. **Immunosuppression**
4. **Allograft tolerance**
5. **Hepatic ischemia-reperfusion injury**

RELATED DISEASES
1. **Liver metastasis from colorectal cancer**
2. **Cholangiocarcinoma**
3. **Hepatocellular carcinoma**
4. **Biliary complications**
5. **Portal hypertension and abdominal vascular diseases**
6. **Thrombosis and haemostasis**
7. **Neoplasia de novo and cardiovascular complications**

GROUP INVOLVED IN
AGAUR_SGR17: 00517
CIBEREHD

AWARDS

Premio Nacional de Cirugía 2020. Premio 2020 al mejor trabajo de cirugía publicado durante el año 2019 en una revista nacional o extranjera
Institution: Asociación Española de Cirujanos.
Awardee/s: Amelia Judith Hessheimer

Accésit del Premio Nacional de Cirugía 2020. Premio 2020 al mejor trabajo de cirugía publicado durante el año 2019 en una revista nacional o extranjera
Institution: Asociación Española de Cirujanos.
Awardee/s: Amelia Judith Hessheimer

Premi extraordinari de Doctorat del curs acadèmic 2018-2019
Institution. Facultat de Farmàcia i Ciència de l'Alimentació (UB).
Awardee/s: Arnau Paniselló Roselló

Original publications

TOTAL	33
IF	161,14
Mean IF	4,88
Q1	70%
D1	36%
MA	33%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Constantino Fondevila (HCB)
T. 93 227 57 53 (Ext.: 4406)
cfondevila@ub.edu

RESEARCHERS
Annabel Blasi (HCB)
Mercedes Brunet (HCB)
Andrés Cárdenas (HCB)
Jordi Felix Colmenero (HCB)
Gonzalo Crespo (HCB)
Emma Folch (IIBB-CSIC)
Juan Carlos García-Valdecasas (HCB)
Olga Millán (CIBER)
Miquel A. Navasa (HCB)
Joan Roselló (IIBB-CSIC)

ASSISTANT RESEARCHERS
Yiliam Fundora (HCB)

POST-DOCTORAL RESEARCHERS
Amelia Judith Hessheimer (HCB)
Arnau Panisello Roselló (IIBB-CSIC)

PRE-DOCTORAL RESEARCHERS
Maryury Andrea Calvo (HCB)
Jordi Vengohechea (IDIBAPS)

TECHNICIANS
Javier Muñoz Luque (CIBER)

ADMINISTRATIVE STAFF
Sílvia Fernández García (FCRB)

PROBLEM

Liver transplantation is the only treatment available for end-stage liver disease and some forms of liver tumors. The success of liver transplantation hinges in the short term on having an adequate supply of good-quality livers to transplant and in the long(er) term on preventing allograft rejection while simultaneously minimizing the risk for chronic diseases due to the use of immunosupression.

APPROACH

This group focuses on optimizing the number of organs available for transplantation by improving techniques of procurement and preservation as well as improving the survival and quality of life of transplanted patients. In order to achieve these aims, this group has lines of research in basic science/experimental research, translational/pre-clinical models, and clinical investigation.

This is a multidisciplinary group comprised of surgeons, hepatologists, anesthesiologists, immunologists, and biologists, with the common goal of improving scientific understanding and above all the lives of the patients we come into contact with each day.

IMPACT

Being an interdisciplinary research group give us a key vision to continue advancing into liver transplantation process research.

In relation to ischemia and graft preservation, important contributions have been made in terms of the preservation solution used to maintain the grafts after its procurement and related to the development of advanced forms of in-situ and ex-situ liver perfusion, allowing recover and transplant safely suboptimal livers, such as the ones from donors that suffer cardiac arrest.

The group has also established which patients have operational tolerance, i.e., those who require no immunosuppression, and it has defined immunosuppression status markers to help personalize the administration of immunosuppressant drugs. Another area of research has aimed to identify the cardiovascular risk factors that significantly impact on the prognosis after liver transplantations, which makes necessary to personalize immunosuppression.

Furthermore, in relation to hemostasis and coagulation, we have defined some independent risk factors for post-transplant venous thrombotic events that facilitates the management of these serious complications depending on the associated risk factors.

Biliary complicatios represents the most important source of morbidity after liver transplantation. Our group has been focused on optimizing the diagnosis and management

of these detrimental complications that importantly affect the quality of life of liver transplant patients. Thus, we have been able to refine our guidelines to determine the best optimal strategy for our patients.

RESEARCH LINES

- Ischemia-reperfusion injury and expanding criteria for liver graft acceptance.

- Endoscopic management of biliary complications following liver transplantation.

- Expanding indications for liver transplantation in relation to pre-existing portal vein thrombosis and portal hypertension.

- Expanding indications for transplantation for malignant tumors – hilar cholangiocarcinoma and colorectal cancer liver metastases.

- Alloimmune response, complications associated with immunosupression, and operational tolerance.

- Prevention and treatment of cardiovascular risk factors following liver transplantation.

PUBLICATIONS

Originals / I.F.: 161.142

1. Blasi A, Patel VC, Adelmeijer J, Azarian S, Hernandez Tejero M, Calvo A, Fernández J, Bernal W, Lisman T. **Mixed fibrinolytic phenotypes in decompensated cirrhosis and ACLF with hypofibrinolysis in those with complications and poor survival.** *Hepatology*. 71(4):1381-1390. I.F.: 14.679

2. Fernández-Varo G, Perramón M, Carvajal S, Oró D, Casals E, Boix L, Oller L, Macías-Muñoz L, Marfà S, Casals G, Morales-Ruiz M, Casado P, Cutillas PR, Bruix J, Navasa M, Fuster J, Garcia-Valdecasas JC, Pavel MC, Puntes V, Jiménez W. **Bespoken nanoceria: A new effective treatment in experimental hepatocellular carcinoma.** *Hepatology*. 72(4):1267-1282. I.F.: 14.679

3. Ramírez-Maldonado E; Gordo SL; Pueyo EM; Sánchez-García A; Mayol S; González S; Elvira J; Memba R; Fondevila C; Jorba R. **Immediate Oral Refeeding in Patients With Mild and Moderate Acute Pancreatitis: A Multicenter, Randomized Controlled Trial (PADI trial).** *Annals of Surgery*. I.F.: 10.130

4. Pommergaard HC; Rostved AA; Adam R; Salizzoni M; Bravo MAG; Cherqui D; De Simone P; Houssel-Debry P; Mazzaferro V; Soubrane O; García-Valdecasas JC; Prous JF; Pinna AD; O'Grady J; Karam V; Duvoux C; Thygesen LC. **Mortality after Transplantation for Hepatocellular Carcinoma: A Study from the European Liver Transplant Registry.** *Liver Cancer*. 9(4):455-467 I.F.: 9.720

5. González-Suárez B, Pagés M, Araujo IK, Romero C, Rodríguez de Miguel C, Ayuso JR, Pozo À, Vila-Casadesús M, Serradesanferm A, Ginès À, Fernández-Esparrach G, Pellisé M, López-Cerón M, Flores D, Córdova H, Sendino O, Grau J, Llach J, Serra-Burriel M, Cárdenas A, Balaguer F, Castells A. **Colon capsule endoscopy versus CT colonography in FIT-positive colorectal cancer screening subjects: a prospective randomised trial-the VICOCA study.** *Bmc Medicine*. 18(1):255. I.F.: 6.782

6. Raimondi G; Mato-Berciano A; Pascual-Sabater S; Rovira-Rigau M; Cuatrecasas M; Fondevila C; Sánchez-Cabús S; Begthel H; Boj SF; Clevers H; Fillat C. **Patient-derived pancreatic tumour organoids identify therapeutic responses to oncolytic adenoviruses.** *Ebiomedicine*. 56:102786. I.F.: 5.736

7. Bastida C, Hernández-Tejero M, Aziz F, Espinosa C, Sanz M, Brunet M, López E, Fernández J, Soy D. **Meropenem population pharmacokinetics in patients with decompensated cirrhosis and severe infections.** *Journal of Antimicrobial Chemotherapy*. 75(12):3619-3624. I.F.: 5.439

8. Millán O, Ruiz P, Fortuna V, Navasa M, Brunet M. **Nuclear factor of activated T cells as potential pharmacodynamic biomarker for the risk of acute and subclinical rejection in de novo liver recipients**. *Liver International*. 40(4):931-946. I.F.: 5.175

9. Díaz-González Á; Sapena V; Boix L; Brunet M; Torres F; LLarch N; Samper E; Millán O; Corominas J; Iserte G; Sanduzzi-Zamparelli M; da Fonseca LG; Darnell A; Belmonte E; Forner A; Ayuso C; Bruix J; Reig M. **Pharmacokinetics and pharmacogenetics of sorafenib in patients with hepatocellular carcinoma: Implications for combination trials.** *Liver International*. 40(10):2476-2488. I.F.: 5.175

10. Germani G, Zeni N, Zanetto A, Adam R, Karam V, Belli LS, O'Grady J, Mirza D, Klempnauer J, Cherqui D, Pratschke J, Jamieson N, Salizzoni M, Hidalgo E, Lerut J, Paul A, Garcia-Valdecasas JC, Rodríguez FSJ, Villa E, Burra P, European Liver, Intestine Transplant Association (ELITA). **Influence of donor and recipient gender on liver transplantation outcomes in Europe.** *Liver International*. 40(8):1961-1971. I.F.: 5.175

11. Piñeiro GJ, Rovira J, Montagud-Marrahí E, Torregrosa JV, Ríos J, Cucchiari D, Ugalde-Altamirano J, Ventura-Aguiar P, Gelpi R, Palou E, Colmenero J, Navasa M, Diekmann F, Esforzado N. **Kidney graft outcomes in high immunological risk simultaneous liver-kidney transplants**. *Liver Transplantation*. 26(4):517-527. I.F.: 4.570

12. Klein, Leah Maria; Chang, Johannes; Gu, Wenyi; Manekeller, Steffen; Jansen, Christian; Lingohr, Philipp; Praktiknjo, Michael; Kalf, Joerg C; Schulz, Martin; Spengler, Ulrich; Strassburg, Christian; Cardenas, Andres; Arroyo, Vicente; Trebicka, Jonel. **The Development and Outcome of Acute-on-Chronic Liver Failure After Surgical Interventions.** *Liver Transplantation*. 26(2):227-237. I.F.: 4.570

13. Ruiz P, Millán O, Ríos J, Díaz A, Sastre L, Colmenero J, Crespo G, Brunet M, Navasa M. **MicroRNAs 155-5p, 122-5p and 181a-5p identify patients with graft dysfunction due to T-cell mediated rejection after liver transplantation.** *Liver Transplantation*. 26(10):1275-1286. I.F.: 4.570

14. Lissing M, Nowak G, Adam R, Karam V, Boyd A, Gouya L, Meersseman W, Melum E, Ołdakowska-Jedynak U, Reiter FP, Colmenero J, Sanchez R, Herden U, Langendonk J, Ventura P, Isoniemi H, Boillot O, Braun F, Perrodin S, Mowlem E, Wahlin S, European Liver and Intestine Transplant Association. **Liver Transplantation for Acute Intermittent Porphyria**. *Liver Transplantation*. I.F.: 4.570

15. Panisello Rosello A, Teixeira da Silva R, Castro C, G Bardallo R, Calvo M, Folch-Puy E, Carbonell T, Palmeira C, Roselló Catafau J, Adam R. **Polyethylene Glycol 35 as a Perfusate Additive for Mitochondrial and Glycocalyx Protection in HOPE Liver Preservation.** *International Journal of Molecular Sciences*. 21(16):5703. I.F.: 4.556

16. Ferrero-Andrés A; Panisello-Roselló A; Serafín A; Roselló-Catafau J; Folch-Puy E. **Polyethylene glycol 35 (PEG35) protects against inflammation in experimental acute necrotizing pancreatitis and associated lung injury.** *International Journal of Molecular Sciences.* 21(3):917. I.F.: 4.556

17. Sastre L, García R, Gándara JG, Ruiz P, Lombardo J, Colmenero J, Navasa M, Crespo G. **Incidence, predictors and impact on survival of long-term cardiovascular events after liver transplantation.** *Transplantation.* 104(2):317-325. I.F.: 4.546

18. Mauro E, Crespo G, Martinez-Garmendia A, Gutierrez-Acevedo MN, Diaz JM, Saidman J, Bermudez C, Ortiz-Patron J, Garcia-Olveira L, Zalazar F, Narvaez A, Spina JC, Orta R, Savluk L, Piano S, Marciano S, Gadano A . **Cystatin C and Sarcopenia Predict Acute on Chronic Liver Failure Development and Mortality in Patients on the Liver Transplant Waiting List.** *Transplantation.* 104(7):e188-e198. I.F.: 4.546

19. Zanieri F; Levi A; Montefusco D; Longato L; De Chiara F; Frenguelli L; Omenetti S; Andreola F; Luong TV; Massey V; Caballeria J; Fondevila C; Shanmugavelandy SS; Fox T; Mazza G; Argemi J; Bataller R; Cowart LA; Kester M; Pinzani M; Rombouts K. **Exogenous Liposomal Ceramide-C6 Ameliorates Lipidomic Profile, Energy Homeostasis, and Anti-Oxidant Systems in NASH.** *Cells.* 9(5):1237. I.F.: 4.366

20. Blasi A, von Meijenfeldt FA, Adelmeijer J, Calvo A, Ibañez C, Perdomo J, Reverter JC, Lisman T. **In vitro hypercoagulability and ongoing in vivo activation of coagulation and fibrinolysis in COVID-19 patients on anticoagulation.** *Journal of Thrombosis and Haemostasis.* 18(10):2646-2653. I.F.: 4.157

21. Ferrero-Andrés A; Panisello-Roselló A; Roselló-Catafau J; Folch-Puy E. **Polyethylene glycol 35 ameliorates pancreatic inflammatory response in cerulein-induced acute pancreatitis in rats.** *World Journal of Gastroenterology.* 26(39):5970-5982. I.F.: 3.665

22. Jaramillo, Sebastian; Montane-Muntane, Mar; Gambus, Pedro L; Capitan, David; Navarro-Ripoll, Ricard; Blasi, Annabel. **Perioperative blood loss: estimation of blood volume loss or haemoglobin mass loss?** *Blood Transfusion.* 18(1):20-29. I.F.: 3.662

23. Ferrero-Andrés A, Closa D, Roselló-Catafau J, Folch-Puy E. **Polyethylene Glycol 35 (PEG35) Modulates Exosomal Uptake and Function**. *Polymers.* 12(12):3044. I.F.: 3.426

24. López-Lazcano AI, Gual A, Colmenero J, Caballería E, Lligoña A, Navasa M, Crespo G, López E, López-Pelayo H. **Active Smoking Before Liver Transplantation in Patients with Alcohol Use Disorder: Risk Factors and Outcomes.** *Journal of Clinical Medicine.* 9(9):2710. I.F.: 3.303

25. Hessheimer AJ, Gastaca M, Miñambres E, Colmenero J, Fondevila C, in representation of the SETH Working Group on DCD. **Donation after circulatory death liver transplantation: consensus statements from the spanish liver transplantation society.** *Transplant International.* 33(8):902-916. I.F.: 3.177

26. Polak WG; Fondevila C; Karam V; Adam R; Baumann U; Germani G; Nadalin S; Taimr P; Toso C; Troisi RI; Zieniewicz K; Belli LS; Duvoux C. **Impact of COVID-19 on liver transplantation in Europe: Alert from an early survey of European Liver and Intestine Transplantation Association (ELITA) and European Liver Transplant Registry (ELTR).** *Transplant International.* 33(10):1244-1252. I.F.: 3.177

27. Riquelme F, Muñoz C, Ausania F, Hessheimer AJ, Torres F, Calatayud D, Sandomenico R, García Pérez R, Ferrer J, Fuster J, García-Valdecasas JC, Fondevila C. **Laparoscopic versus open hemihepatectomy: comprehensive comparison of complications and costs at 90 days using a propensity method.** *Updates in Surgery.* 72(4):1041-1051. I.F.: 2.587

28. Ausania F, Al Shwely F, Farguell J, Beltrán J, Calatayud D, Sánchez-Cabús S, Ferrer J, Rull R, Fuster J, García-Valdecasas JC, Martínez-Palli G, Fondevila C. **Factors Associated with Prolonged Recipient Hepatectomy Time During Liver Transplantation: A Single-Centre Experience.** *World Journal of Surgery.* 44(10):3486-3490. I.F.: 2.234

29. Molina V, Ferrer-Fábrega J, Sampson-Dávila J, Díaz A, Ayuso C, Forner A, Fondevila C, García-Valdecasas JC, Bruix J, Fuster J. **Intention-to-treat curative liver resection in patients with "very early" intrahepatic cholangiocarcinoma.** *Langenbecks Archives of Surgery.* 405(7):967-975. I.F.: 2.184

30. Lemaitre F, Vethe NT, D'Avolio A, Tron C, Robertsen I, De Winter B, Denicolo A, Koch BCP, Venkataramanan R, Van Gelder T, Brunet M, Bergan S, Hesselink DA, Wallemacq P. **Measuring Intracellular Concentrations of Calcineurin Inhibitors: Expert Consensus from the International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT) Expert Panel.** *Therapeutic Drug Monitoring.* 42(5):665-670. I.F.: 2.073

31. Delgado-Oliver E, Vidal-Sicart S, Martínez D, Squarcia M, Mora M, Hanzu FA, Halperin I, Fuster D, Fondevila C, Vidal-Perez Ó. **Applicability of sentinel lymph node biopsy in papillary thyroid cancer.** *Quarterly Journal of Nuclear Medicine and Molecular Imaging.* 64(4):400-405. I.F.: 1.795

32. Llovet LP, Sciarrone S, Rodríguez-Tajes S, Montironi C, Mescoli C, Rugge M, Crespo G, Burra P, Forns X, Diaz A, Londoño MC. **Ductular reaction and hepatocyte ballooning identify patients with fibrosing cholestatic hepatitits after liver transplantation.** *Gastroenterología y Hepatología.* 43(1):14-21. I.F.: 1.581

33. Sendino O; Loras C; Mata A; Momblán D; Andujar X; Cruz M; Cárdenas A; Marquez I; Uchima H; Cordova H; de Lacy AM; Espinós J. **Safety and efficacy of endoscopic vacuum therapy for the treatment of perforations and anastomotic leaks of the upper gastrointestinal tract.** *Gastroenterología y Hepatología.*43(8):431-438. I.F.: 1.581

Review / I.F.: 21.38

1. Cullaro G, Sharma R, Trebicka J, Cárdenas A, Verna EC. **Precipitants of Acute-on-Chronic Liver Failure: An Opportunity for Preventative Measures to Improve Outcomes.** *Liver Transplantation.* 26(2):283-293. I.F.: 4.570

2. Ferrero-Andres, Ana; Panisello-Rosello, Arnau; Rosello-Catafau, Joan; Folch-Puy, Emma. **NLRP3 Inflammasome-Mediated Inflammation in Acute Pancreatitis.** *International Journal of Molecular Sciences.* 21(15):5386. I.F.: 4.556

3. Chadha R, De Martin E, Kabacam G, Kirchner V, Kalisvaart M, Goldaracena N, Tanaka T, Spiro M, Sapisochin G, Vinaixa C, Hessheimer A, Campos Varela I, Rammohan A, Yoon YI, Victor D, Scalera I, Chan A, Bhangui P.

Proceedings of the 25th Annual Congress of the International Liver Transplantation Society. *Transplantation.* 104(8):1560-1565. I.F.: 4.546

4. Coll E; Miñambres E; Sánchez-Fructuoso A; Fondevila C; Campo-Cañaveral de la Cruz JL; Domínguez-Gil B. **Uncontrolled Donation After Circulatory Death: A Unique Opportunity.** *Transplantation.* 104(8):1542-1552. I.F.: 4.546

5. Vionnet J; Sempoux C; Pascual M; Sánchez-Fueyo A; Colmenero J. **Donor-specific antibodies in liver transplantation.** *Gastroenterología y Hepatología.* 43(1):34-45. I.F.: 1.581

6. Forns X; Navasa M. **Liver transplant immunosuppression during the covid-19 pandemic.** *Gastroenterología y Hepatología.* 43(8):457-463. I.F.: 1.581

Letters / I.F.: 62.034

1. Belli, Luca S; Duvoux, Christophe; Karam, Vincent; Adam, Rene; Cuervas-Mons, Valentin; Pasulo, Luisa; Loinaz, Carmelo; Invernizzi, Federica; Patrono, Damiano; Bhoori, Sherrie; Ciccarelli, Olga; Morelli, Maria Cristina; Castells, Lluis; Lopez-Lopez, Victor; Conti, Sara; Fondevila, Costantino; Polak, Wojchiech. **COVID-19 in liver transplant recipients: preliminary data from the ELITA/ELTR registry.** *Lancet Gastroenterology & Hepatology.* 5(8):724-725. I.F.: 14.789

2. Rodríguez-Perálvarez M, Salcedo M, Pons JA, Colmenero J, Spanish Society of Liver Transplantation (SETH). **Letter: unknown denominator and misleading conclusions in COVID-19.** *Alimentary Pharmacology & Therapeutics.* 52(7):1241-1242. I.F.: 7.515

3. Panisello-Rosello A; Roselló-Catafau J. **HOPE (hypothermic oxygenated perfusion) strategies in the era of dynamic liver graft preservation**. *Ebiomedicine.* 61:103071. I.F.: 5.736

4. Hessheimer AJ, Morales X, Ginestá C, Turrado V, Borin A, Ausania F, Bravo R, Fondevila C, Lacy AM. **Where have all the appendicitis gone? patterns of urgent surgical admissions during the COVID19 pandemic.** *British Journal of Surgery.* 107(11):e545-e546. I.F.: 5.676

5. Sierra F, Cárdenas A . **Re: Fouad Y, et al. The NAFLD-MAFLD debate: Eminence versus evidence. Liver Int. 2020 Nov 21. doi: 10.1111/liv.14739.** *Liver International.* I.F.: 5.175

6. Guarner P; García R; Al Shwely F; Pérez-Serrano C; Rodríguez S; Torroella A; Ferrer J; Fondevila C; Fuster J; García-Valdecasas JC. **Unusual Allogeneic Retrohepatic Vena Cava Graft for Renoportal Anastomosis in Orthotopic Liver Transplantation.** *Liver Transplantation.* 26(8):1056-1059. I.F.: 4.570

7. Panisello-Rosello, Arnau; Castro Benitez, Carlos; Lopez, Alexandre; Teixeira da Silva, Rui; Rosello-Catafau, Joan; Adam, Rene. **Glycocalyx as a Useful Marker of Endothelial Injury in Liver Transplantation: The Role of Preservation Solution.** *Transplantation.* 104(12):E356-E357. I.F.: 4.546

8. Sabate A, Blasi A, Caballero M. **Thromboelastometry-based algorithms and the need for transfusion during liver transplantation.** *European Journal of Anaesthesiology.* 37(6):518-519. I.F.: 4.500

9. Rodríguez-Perálvarez M, Salcedo M, Colmenero J, Pons JA, on behalf the Spanish Society of Liver Transplantation (SETH). **Increased incidence of Covid-19 among liver transplant patients in Europe.** *Transplant International.* 33(12):1823-1824. I.F.: 3.177

10. Polak WG; Fondevila C; Karam V; Adam R; Belli LS; Duvoux C; for European Liver; Intestine Transplant Association (ELITA); the COVID-19 ELITA Study Group. **Reply to Rodriguez-Peralvarez et al.** *Transplant International.* 33(12):1825-1826. I.F.: 3.177

11. Morales, Xavier; Turrado, Victor; de Lacy, Borja; Hessheimer, Amelia; Fondevila, Constantino; de Lacy, Antonio M. **Experience of an emergency surgery department during the pandemic caused by SARS-CoV-2 infection.** *Emergencias.* 32(6):435-436. I.F.: 3.173

Editorial / I.F.: 20.807

1. Cardenas, Andres; Abraldes, Juan G. **Classifying varices in cirrhosis: Who's got the best look?** *Liver International.* 40(4):754-755. I.F.: 5.175

2. Panisello-Roselló A; Roselló-Catafau J; Adam R. **New Insights in Molecular Mechanisms and Pathophysiology of Ischemia-Reperfusion Injury 2.** *International Journal of Molecular Sciences.* 22(1):28. I.F.: 4.556

3. Hessheimer AJ, Fondevila C. **Posttransplantation HCC surveillance: impact on outcome or byproduct of biology?** *Transplantation.* 104(10):1997-1998. I.F.: 4.546

4. Law R, Cardenas A. **Hemostatic Powder for Gastrointestinal Bleeding: Time to believe the hype or more false hope?** *Digestive and Liver Disease.* 52(7):702-703. I.F.: 3.570

5. Basssegoda O, Cardenas A . **Readmission after TIPS: an up-to-date landscape.** *Gastroenterology Report.* 8(2):83-84. I.F.: 2.960

Case Reports / I.F.: 2.034

1. Kurilova I; Pompa V; Guerrero R; Tapias MA; Calatayud MD; Fondevila C; González JA; Duch J; Gomez FM. **90Y-Radioembolization After Failed Portal Vein Embolization for Colorectal Liver Metastases: A Case Report.** *Cardiovascular and Interventional Radiology.* 43(8):1232-1236. I.F.: 2.034

Clinical Guidelines / I.F.: 1.581

1. Fernández I, Pascasio JM, Colmenero J, en nombre del grupo de trabajo para el VII consenso de la SETH, Autores participantes en el grupo de trabajo en representación de sus respectivos programas de trasplante hepático. **Prophylaxis and treatment in liver transplantation. VII Consensus Document of the Spanish Society of Liver Transplantation.** *Gastroenterología y Hepatología.* 43(3):169-177. I.F.: 1.581

Consortium Publications / I.F.: 73.474

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

2. Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, Miró JM, GAMES Investigators. **A Contemporary Picture of Enterococcal Endocarditis.** *Journal of the American College of Cardiology.* 75(5):482-494. I.F.: 20.589

3. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

4. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

5. Londoño MC; Reig M; RETOINMUNO Multidisciplinary Group. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers.* 12(11):1-22. I.F.: 6.126

GRANTS FOR RESEARCH IN PROGRESS

Blasi A, Reverter JC. **Desarrollo de un modelo mecanístico computacional de complejidad reducida de la hemostasia portal a partir de parámetros en sangre periférica, y evaluación de su capacidad predictiva de aparición de trombosis portal en la cirrosis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00076
Duration: 01/01/2020-31/12/2022

Brunet M, Millán O. **Análisis de la expresión de un panel de miRNAs y Quimiocinas como biomarcadores pronóstico precoces del riesgo de rechazo mediado por células T y subclínico post-trasplante hepático.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00378
Duration: 01/01/2020-31/12/2022

Cárdenas A. **Nuevas estrategias para identificar dianas terapéuticas de la fibrosis de la estenosis de la anastomosis biliar en receptores de trasplante hepático.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00752
Duration: 01/01/2020-31/12/2022

Colmenero J, Díaz-Lorca MA. **Caracterización molecular e histológicas del daño aloinmune contra el injerto tras el trasplante hepático: identificación de factores predictivos de mal pronóstico y dianas terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01125
Duration: 01/01/2019-31/12/2021

Crespo G. **Caracterización del papel de la respuesta inmunológica en la progresión de la cirrosis hepática mediante inmunología de sistemas: evaluación de nuevas estrategias terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00727
Duration: 01/01/2019-31/12/2021

Fondevila C, García-Pagána JC. **Hemodinàmica hepàtica i hipertensió portal.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_00517
Duration: 01/01/2017-30/09/2021

Fondevila C. **Evaluación de la regeneración hepatocelular tras hepatectomía mayor en un modelo clínico y otro experimental. Utilidad del tratamiento con somatostanina y debutamina en un modelo porcino de cirugía hepática extrema.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/01092
Duration: 01/01/2016-30/11/2020

Fondevila C, Hessheimer AJ. **Precondicionamiento portal en injertos hepáticos pequeños mediante perfusión normotérmica ex situ en un modelo porcino.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00894
Duration: 01/01/2019-31/12/2021

García-Valdecasas JC. **Evaluation of the feasibilty of normothermic regional perfusion followed by ex-vivo normothermic machine perfusion in Type II DCD (Donation after Cardiac Death) Liver Transplants.**
Sponsored by: Fundació la Caixa. LCF/PR/G-N15/10280001
Duration: 01/05/2016-30/04/2020

DOCTORAL THESES

Navasa M, Crespo G. **Papel de los micrornas y virus torque teno como biomarcadores del estado de inmunosupresión en trasplante hepático.**
PhD student: Pablo Ruiz Colominas

Fondevila C, García-Valdecasas JC. **Evaluación de la regeneración hepatocelular tras hepatectomía extrema y utilidad del tratamiento con somatostatina en un modelo porcino experimental.**
PhD student: Lilia Georgina Martinez de la Maza

3.10 Viral, toxic and metabolic hepatopathies

LOCATION
CEK building, floor 4

KEYWORDS
1. **Hepatitis C virus**
2. **Direct-acting antivirals (DAA)**
3. **Hepatitis B virus**
4. **Antiviral immune responses**
5. **Wilson's disease**
6. **Drug-induced Liver Injury (DILI)**

RELATED DISEASES
1. **Hepatitis B & D**
2. **Hepatitis C**
3. **Hepatitis A & E**
4. **Wilson's disease**

GROUP INVOLVED IN
AGAUR_SGR17: 01753
CIBEREHD

AWARDS
Rising Star
Institution: United European Gastroenterology (UEG) and Sociedad Española Patología Digestiva (SEPD)
Awardee/s: Sabela Lens

Original publications

TOTAL	19
IF	139,13
Mean IF	7,32
Q1	68%
D1	37%
MA	58%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Xavier Forns (HCB)
T. 93 227 54 99
xforns@clinic.cat

RESEARCHERS
Josep Costa (HCB)
Sabela Lens (HCB)
María Carlota Londoño (HCB)
Zoe Mariño (HCB)
Sofía Pérez del Pulgar (CIBER)

ASSISTANT RESEARCHERS
Georgios Koutsoudakis (FCRB)

POST-DOCTORAL RESEARCHERS
Ester Garcia Pras (CIBER)

PRE-DOCTORAL RESEARCHERS
Mireia García López (IDIBAPS)
Sergio Rodríguez Tajes (HCB)

TECHNICIANS
Thais Leonel (CIBER)

NURSING STAFF
Concepció Bartres (HCB)
Anna Miralpeix (FCRB-IDIBAPS)

PROBLEM

Viral hepatitis, mainly hepatitis C and B, is the main cause of cirrhosis, hepatocellular carcinoma and liver-related mortality worldwide. In the case of hepatitis B virus infection (HBV, with or without HDV), there is no curative treatment, so conducting research in this area is a challenge.

Apart from diseases caused by viruses, liver toxicity due to drugs is an increasing problem in our society and requires special attention.

Finally, metabolic diseases caused by copper (Wilson disease) or iron (hemochromatosis) accumulation are rare disorders that develop into cirrhosis if they are not diagnosed and treated early.

APPROACH

In the field of viral hepatitis, advances in the knowledge of the interactions between the virus and the immune responses are key to understanding the natural history of the disease and the development of new therapeutic targets.

In the case of metabolic and toxic liver disease, epidemiological studies and the search for factors (genetic or environmental) that are involved in diseases' outcomes are expanding fields.

IMPACT

The group has made significant contributions to the study of the impact of curing hepatitis C, especially on the treatment (with direct acting antivirals) in patients with advanced liver diseases and associated extrahepatic manifestations.

In the future, studies aimed at analyzing immunological factors involved in the evolution of hepatitis (particularly hepatitis B) and to identify patients at the greatest risk of complications will be crucial.

RESEARCH LINES

- Interplay between HBV, HDV and host factors: impact on liver disease progression.

- Molecular mechanisms and clinical relevance of the persistence of cccDNA in chronic HBV infection.

- Natural history of chronic HBV infection in different clinical situations.

- Clinical, virological and immunological predictors of response after antiviral treatment interruption in chronic hepatitis B.

- Strategies of hepatitis C microelimination in our geographical area, focused in People Who Inject Drugs (PWID).

- Brain metabolic and functional connectivity dysfunction in patients with chronic hepatitis C and reversibility after viral eradication with direct acting antivirals.

- Clinical impact of HCV eradication in patients with advanced liver disease.

- Clinical and biological characterization of patients with Wilson's disease.

PUBLICATIONS

Originals / I.F.: 139.129

1. Lens S, Baiges A, Alvarado-Tapias E, LLop E, Martinez J, Fortea JI, Ibáñez-Samaniego L, Mariño Z, Rodríguez-Tajes S, Gallego A, Bañares R, Puente Á, Albillos A, Calleja JL, Torras X, Hernández-Gea V, Bosch J, Villanueva C, García-Pagán JC, Forns X. **Clinical outcome and hemodynamic changes following HCV eradication with oral antiviral therapy in patients with clinically significant portal hypertension.** *Journal of Hepatology.* 73(6):1415-1424. I.F.: 20.582

2. Rodríguez-Tajes S, Pocurull A, Castillo J, Casanova G, Vega L, Lens S, Mariño Z, Londoño MC, Forner A, Torres F, Forns X. **Hepatitis C-related cirrhosis will be a marginal cause of hospital admissions in the near future.** *Journal of Hepatology.* 73(6):1360-1367. I.F.: 20.582

3. Pons M, Rodríguez-Tajes S, Esteban JI, Mariño Z, Vargas V, Lens S, Buti M, Augustin S, Forns X, Mínguez B, Genescà J. **Non-invasive prediction of liver related events in HCV compensated advanced chronic liver disease patients after oral antivirals**. *Journal of Hepatology.* 72(3):472-480. I.F.: 20.582

4. Pallett LJ, Burton AR, Amin OE, Rodriguez-Tajes S, Patel AA, Zakeri N, Jeffery-Smith A, Swadling L, Schmidt NM, Baiges A, Gander A, Yu D, Nasralla D, Froghi F, Iype S, Davidson BR, Thorburn D, Yona S, Forns X, Maini MK. **Longevity and replenishment of human liver-resident memory T cells and mononuclear phagocytes.** *Journal of Experimental Medicine.* 217(9):e20200050. I.F.: 11.743

5. Sastre L, To-Figueras J, Lens S, Rodriguez-Tajes S, Bartres C, Aguilera P, Badenas C, Oliva R, Pocurull A, Forns X, Mariño Z. **Resolution of subclinical porphyria cutanea tarda after hepatitis C eradication with direct-acting anti-virals.** *Alimentary Pharmacology & Therapeutics.* 51(10):968-973. I.F.: 7.515

6. Palom A; Rodríguez-Tajes S; Navascués C; García-Samaniego J; Riveiro-Barciela M; Lens S; Rodríguez M; Esteban R; Buti M. **Long-term clinical outcomes in patients with chronic hepatitis delta: the role of persistent viraemia.** *Alimentary Pharmacology & Therapeutics.* 51(1):158-166. I.F.: 7.515

7. Mastoridis S, Londoño MC, Kurt A, Kodela E, Crespo E, Mason J, Bestard O, Martínez-Llordella M, Sánchez-Fueyo A. **Impact of donor extracellular vesicle release on recipient cell "cross-dressing" following clinical liver and kidney transplantation.** *American Journal of Transplantation.* I.F.: 7.338

8. Puigvehí M, Londoño MC, Torras X, Lorente S, Vergara M, Morillas RM, Masnou H, Serrano T, Miquel M, Gallego A, Lens S, Carrión JA. **Impact of sustained virological response with DAAs on gastroesophageal varices and Baveno criteria in HCV-cirrhotic patients**. *Journal of Gastroenterology.* 55(2):205-216. I.F.: 6.132

9. Llovet, Laura-Patricia; Gratacos-Gines, Jordi; Ortiz, Oswaldo; Rodriguez-Tajes, Sergio; Lens, Sabela; Reverter, Enric; Ruiz-Ortiz, Estibaliz; Costa, Josep; Vinas, Odette; Forns, Xavier; Pares, Albert; Londono, Maria-Carlota. **Higher seroprevalence of hepatitis E virus in autoimmune hepatitis: Role of false-positive antibodies.** *Liver International.* 40(3):558-564. I.F.: 5.175

10. Mariño Z, Rodríguez-Tajes S, Bartrés C, Nácar L, Lens S, Navinés R, Cavero M, Londoño MC, Sastre L, Pocurull A, Dafieno A, Martín-Santos R, Forns X. **Improvement of sexuality after hepatitis C cure with direct acting antivirals.** *Liver International.* 40(12):2972-2977. I.F.: 5.175

11. Perpinan, Elena; Perez-Del-Pulgar, Sofia; Londono, Maria-Carlota; Marino, Zoe; Bartres, Concepcion; Gonzalez, Patricia; Garcia-Lopez, Mireia; Pose, Elisa; Lens, Sabela; Maini, Mala K; Forns, Xavier; Koutsoudakis, George. **Cirrhosis Hampers Early and Rapid Normalization of Natural Killer Cell Phenotype and Function in Hepatitis C Patients Undergoing Interferon-Free Therapy.** *Frontiers in Immunology.* 11:129. I.F.: 5.085

12. Chen Q, Perales C, Soria ME, García-Cehic D, Gregori J, Rodríguez-Frías F, Buti M, Crespo J, Calleja JL, Tabernero D, Vila M, Lázaro F, Rando-Segura A, Nieto-Aponte L, Llorens-Revull M, Cortese MF, Fernandez-Alonso I, Castellote J, Niubó J, Imaz A, Xiol X, Castells L, Riveiro-Barciela M, Llaneras J, Navarro J, Vargas-Blasco V, Augustin S, Conde I, Rubín Á, Prieto M, Torras X, Margall N, Forns X, Mariño Z, Lens S, Bonacci M, Pérez-Del-Pulgar S, Londoño MC, García-Buey ML, Sanz-Cameno P, Morillas R, Martró E, Saludes V, Masnou-Ridaura H, Salmerón J, Quiles R, Carrión JA, Forné M, Rosinach M, Fernández I, García-Samaniego J, Madejón A, Castillo-Grau P, López-Núñez C, Ferri MJ, Durández R, Sáez-Royuela F, Diago M, Gimeno C, Medina R, Buenestado J, Bernet A, Turnes J, Trigo-Daporta M, Hernández-Guerra M, Delgado-Blanco M, Cañizares A, Arenas JI, Gomez-Alonso MJ, Rodríguez M, Deig E, Olivé G, Río OD, Cabezas J, Quiñones I, Roget M, Montoliu S, García-Costa J, Force L, Blanch S, Miralbés M, López-de-Goicoechea MJ, García-Flores A, Saumoy M, Casanovas T, Baliellas C, Gilabert P, Martin-Cardona A, Roca R, Barenys M, Villaverde J, Salord S, Camps B, Silvan di Yacovo M, Ocaña I, Sauleda S, Bes M, Carbonell J, Vargas-Accarino E, Ruzo SP, Guerrero-Murillo M, Von Massow G, Costafreda MI, López RM, González-Moreno L, Real Y, Acero-Fernández D, Viroles S, Pamplona X, Cairó M, Ocete MD, Macías-Sánchez JF, Estébanez A, Quer JC, Mena-de-Cea Á, Otero A, Castro-Iglesias Á, Suárez F, Vázquez Á, Vieito D, López-Calvo S, Vázquez-Rodríguez P, Martínez-Cerezo FJ, Rodríguez R, Macenlle R, Cachero A, Mereish G, Mora-Moruny C, Fábregas S, Sacristán B, Albillos A, Sánchez-Ruano JJ, Baluja-Pino R, Fernández-Fernández J, González-Portela C, García-Martin C, Sánchez-Antolín G, Andrade RJ, Simón MA, Pascasio JM, Romero-Gómez M, Antonio Del-Campo J, Domingo E, Esteban R, Esteban JI, Quer J. **Deep-sequencing reveals broad subtype-specific HCV resistance mutations associated with treatment failure.** *Antiviral Research.* 174:104694. I.F.: 4.101

13. Perpiñán E, Pérez-Del-Pulgar S, Londoño MC, Mariño Z, Lens S, Leonel T, Bartres C, García-López M, Rodriguez-Tajes S, Forns X, Koutsoudakis G. **Chronic genotype 1 hepatitis C along with cirrhosis drives a**

persistent imprint in virus-specific CD8+ T cells after direct-acting antiviral therapies. *Journal of Viral Hepatitis.* 27(12):1408-1418. I.F.: 3.561

14. Rodríguez-Tajes S; Domínguez Á; Carrión JA; Buti M; Quer JC; Morillas RM; López C; Torras X; Baliellas C; Vergara M; Forner M; Zaragoza N; Salò J; Rigau J; Caballeria L; Mariño Z; Janè M; Colom J; Forns X; Lens S. **Significant decrease in the prevalence of hepatitis C infection after the introduction of direct acting antivirals.** *Journal of Gastroenterology and Hepatology.* 35(9):1570-1578. I.F.: 3.437

15. Amoros-Reboredo P; Soy D; Hernandez-Hernandez M; Lens S; Mestres C. **Anticholinergic burden and safety outcomes in older patients with chronic hepatitis c: A retrospective cohort study**. *International Journal of Environmental Research and Public Health.* 17(11):3776. I.F.: 2.849

16. Amoros-Reboredo P, Sotoca JM, Mariño Z, Rodríguez-Tajes S, Pocurull A, Soy D, Forns X, Lens S. **Efficacy and safety of direct-acting antivirals in older patients with cirrhosis and high comorbidity index.** *European Journal of Gastroenterology & Hepatology.* 32(3):389-394. I.F.: 2.251

17. Rodriguez-Tajes, Sergio; Perpinan, Elena; Leonel, Thais; Lens, Sabela; Marino, Zoe; Perez-del-Pulgar, Sofia; Garcia-Lopez, Mireia; Pocurull, Anna; Koutsoudakis, George; Forns, Xavier. **Low seroprevalence and zero incidence rate of hepatitis E in men who have sex with men during a hepatitis A outbreak.** *Journal of Medical Virology.* 92(8):1359-1362. I.F.: 2.021

18. Egmond E, Mariño Z, Navines R, Oriolo G, Pla A, Bartres C, Lens S, Forns X, Martin-Santos R. **Incidence of depression in patients with hepatitis C treated with direct-acting antivirals.** *Revista Brasileira de Psiquiatría.* 42(1):72-76. I.F.: 1.904

19. Llovet LP, Sciarrone S, Rodríguez-Tajes S, Montironi C, Mescoli C, Rugge M, Crespo G, Burra P, Forns X, Diaz A, Londoño MC. **Ductular reaction and hepatocyte ballooning identify patients with fibrosing cholestatic hepatitits after liver transplantation.** *Gastroenterología y Hepatología.* 43(1):14-21. I.F.: 1.581

Review / I.F.: 7.707

1. Londoño MC; Reig M; RETOINMUNO Multidisciplinary Group. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers.* 12(11):1-22. I.F.: 6.126

2. Forns X; Navasa M. **Liver transplant immunosuppression during the covid-19 pandemic.** *Gastroenterología y Hepatología.* 43(8):457-463. I.F.: 1.581

Letters / I.F.: 49.713

1. Lens S, Miquel M, Mateos-Muñoz B, García-Samaniego J, Forns X. **SARS-CoV2 in patients on antiviral HBV and HCV therapy in Spain.** *Journal of Hepatology.* 73(5):1262-1263. I.F.: 20.582

2. Sapena V, Rios J, Torres F, Mariño Z, Forns X, Bruix J, Reig M . **Reply to: "The reported 'clear cut time association between interferon-free treatment and HCC' is anything but clear cut".** *Journal of Hepatology.* 72(5):1036-1037. I.F.: 20.582

3. Bonacci M; Forns X; Lens S. **The HBeAg-Negative "Gray Zone" Phase: A Frequent Condition With Different Outcomes in Western and Asian Patients?** *Clinical Gastroenterology and Hepatology.* 18(1):263-264. I.F.: 8.549

Editorial / I.F.: 1.304

1. Lens, Sabela; Lazarus, Je-rey V. **The paediatric population: the forgotten element to eliminating hepatitis C virus.** *Lancet Gastroenterology & Hepatology.* 5(4):334-335. I.F.: 14.789

2. Domínguez A; Forns X. **Can hepatitis A outbreaks in men who have sex with men be controlled?** *Rev Clin Esp.* 220(7):434-436. I.F.: 1.304

Case Reports / I.F.: 16.093

1. Seda Ertekin, Sumeyre; Morgado-Carrasco, Daniel; Forns, Xavier; Mascaro, Jose M, Jr. **Complete Remission of Hypertrophic Discoid Cutaneous Lupus Erythematosus After Treatment of Chronic Hepatitis C With Direct-Acting Antivirals.** *JAMA Dermatology.* 156(4):471-472. I.F.: 7.738

2. Sastre L; García-López M; Pérez-del-Pulgar S; Lens S; Costa J; Navasa M; Forns X. **The challenge of chronic hepatitis E in liver transplant recipients: Failure of sofosbuvir plus ribavirin therapy.** *Gastroenterología y Hepatología.* 43(3):136-137. I.F.: 1.581

Clinical Guidelines / I.F.: 1.581

1. Rodríguez M; Buti M; Esteban R; Lens S; Prieto M; Suárez E; García-Samaniego J. **Consensus document of the Spanish Association for Study of the Liver on the treatment of hepatitis B virus infection (2020).** *Gastroenterología y Hepatología.* 43(9):559-587. I.F.: 1.581

GRANTS FOR RESEARCH IN PROGRESS

Forns X. **Hepatopaties viriques, tòxiques i metabòliques.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01753
Duration: 01/01/2017-30/09/2021

Forns X. **Estudio de la disfunción de la respuesta inmune adaptativa periférica e intrahepática en las diferentes fases de la infección crónica por el virus de la hepatitis B.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00079
Duration: 01/01/2019-31/12/2021

Forns X. **Programa de formación para la interpretación de biopsias hepáticas dirigida a Hepatólogos.**
Sponsored by: Gilead Sciences (SLU).
GLD18_0128
Duration: 01/02/2019-15/11/2021

Forns X, Lens S. **TherVacB: A therapeutic vaccine to cure hepatitis B.**
Sponsored by: European Commission.
CE_H2020-SC1_2019_2s
Duration: 01/01/2020-31/12/2024

Lens S. **Defining the best strategy for global HCV screening, linkage-to-care education and prevention in PWID population and validation of a new diagnostic dried blood spot test.**
Sponsored by: Gilead Sciences (SLU).
INT_GILEAD_IRS_18
Duration: 01/12/2018-31/03/2021

Londoño MC. **Identificación de biomarcadores para predecir el éxito de la retirada de la inmunosupresión en pacientes con hepatitis autoinmune.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00955
Duration: 01/01/2018-31/12/2021

Mariño Z. **Brain metabolic and functional connectivity dysfunction in patients with chronic hepatitis C and reversibility after viral eradication with direct acting antivirals.**
Sponsored by: Gilead Sciences (SLU).
GLD17/00273
Duration: 18/01/2018-31/12/-

Pérez del Pulgar S. **Interplay between HBV, HDV and host factors: impact on liver disease progression.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00036
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Lens S, Soy D. **Tractament de l'hepatitis C crònica amb agents antivirals directes en pacients majors de 65 anys.**
PhD student: Patricia Amoros Reboredo

Perez del Pulgar S, Koutsoudakis G. **Dinámica de las sustituciones asociadas a resistencia y alteración de la respuesta inmune innata en pacientes cirróticos con hepatitis C crónica tratados con antivirales de acción directa.**
PhD student: Elena Perpiñan Mas

3.11 Regulation of liver microcirculation in cirrhosis and hepatic vascular diseases

LOCATION
CEK building, floor 4

KEYWORDS
1. **Portal hypertension**
2. **Cirrhosis**
3. **Variceal bleeding**
4. **Idiopathic**
5. **Portal vein thrombosis**
6. **Tips**

RELATED DISEASES
1. **Portal hypertension**
2. **Hepatic vascular diseases**
3. **Idiopathic portal hypertension**
4. **Non-cirrhotic portal vein thrombosis**
5. **Budd-chiary syndrome**

GROUP INVOLVED IN
AGAUR_SGR17: 00517
CIBEREHD

Original publications

TOTAL	17
IF	181,53
Mean IF	10,68
Q1	88%
D1	47%
MA	24%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Juan Carlos García-Pagán (HCB)
T. 93 227 54 00 (Ext.: 5790)
jcgarcia@clinic.cat

RESEARCHERS
Ramón Deulofeu (HCB)
M. Rosa Gilabert (HCB)
Virginia Hernández Gea (HCB)
Enric Reverter (HCB)

ASSISTANT RESEARCHERS
Genís Campreciós (CIBER)

POST-DOCTORAL RESEARCHERS
Anna Baiges (HCB-FCRB)

PRE-DOCTORAL RESEARCHERS
Aina Anton (IDIBAPS)
Erica Lafoz (FCRB)
Marta Magaz Martínez (HCB)
Pol Olivas (HCB)
Fanny Turon (HCB)

TECHNICIANS
Fabián Betancourt Sánchez (IDIBAPS)
Héctor García Calderó (CIBER-FCRB)

NURSING STAFF
Lara Orts Salvador (CIBER)

ADMINISTRATIVE STAFF
Oliva Ros (IDIBAPS)

PROBLEM

The group's research focuses on the etiology, pathophysiology, diagnosis, staging and treatment of all portal hypertension (PHT) causes, which is defined by an increased pressure in the portal vein (the vein that carries blood to the liver), and is the most serious complication common to all liver diseases.

The development of PHT leads to variceal bleeding, development of ascites or hepatic encephalopathy, all of them life threatening complications.

Although the most frequent cause of PHT is cirrhosis, many other diseases such as Budd Chiari syndrome, idiopathic portal hypertension or portal vein thrombosis (known as non-cirrhotic portal hypertension or hepatic vascular diseases) can also evolve with portal hypertension. These diseases, that are considered rare minority diseases, usually affect young patients and, if not treated properly, can markedly reduce their survival.

APPROACH

The group approaches portal hypertension from different angles: improvement of PHT knowledge with molecular-cellular studies, studies in preclinical models of the diseases as well as human interventional studies and clinical trials.

Molecular-cellular studies and preclinical models focus on reproducing the disease and the mechanisms that regulate the liver cells, evaluating which components are responsible for the increase in PHT and the appearance of complications so that new therapeutic targets and treatments can be developed. From the clinical point of view, the group is pioneer in the application of new diagnostic methods among patients with PHT. The group has actively participated in the development of non – invasive methods that facilitate the diagnosis of PHT, especially useful in the outpatient clinic evaluation.

Regarding invasive methods such as performance of transjugular liver biopsies, hepatic pressures measurement, placing of TIPS and recanalization of the portal vein in patients with extensive thromboses our group works as a referral center both in Catalunya and in Europe. This versatile and dynamic approach enables our group to further improve our knowledge in the prognosis, diagnosis techniques and treatment options for these patients.

IMPACT

The ultimate goal of the research performed in our group is to understand how PHT

develops at different levels. We seek to clarify the mechanisms responsible for its appearance in order to find new therapeutic targets easy to apply in clinical practice.

From a more clinical point of view, the group also focuses on improving diagnostic methods and the identification of patients at risk of developing complications, as well as implementing management, treatment and follow-up strategies that significantly reduce the incidence of complications from these diseases, therefore increasing patient survival.

RESEARCH LINES

- Pre-clinical models for disease studies.

- Role of liver sinusoidal endothelial cells in the regulation of liver fibrosis and liver regeneration.

- Physiopathology, natural history, prognosis and management for portal hypertension.

- Precision medicine in the management of decompensated cirrhosis.

- Hepatic vascular diseases (Budd-Chiari syndrome, portal vein thrombosis; Idiopathic non-cirrhotic portal hypertension): physiopathology, prognosis and management.

- Discovery of diagnostic bio-markers for idiopathic portal hypertension and for risk-stratification.

- Mechanisms in liver inflammation and fibrosis.

PUBLICATIONS

Originals / I.F.: 181.526

1. Lens S, Baiges A, Alvarado-Tapias E, LLop E, Martinez J, Fortea JI, Ibáñez-Samaniego L, Mariño Z, Rodríguez-Tajes S, Gallego A, Bañares R, Puente Á, Albillos A, Calleja JL, Torras X, Hernández-Gea V, Bosch J, Villanueva C, García-Pagán JC, Forns X. **Clinical outcome and hemodynamic changes following HCV eradication with oral antiviral therapy in patients with clinically significant portal hypertension.** *Journal of Hepatology.* 73(6):1415-1424. I.F.: 20.582

2. Trebicka J, Gu W, Ibáñez-Samaniego L, Hernández-Gea V, Pitarch C, Garcia E, Procopet B, Giráldez Á, Amitrano L, Villanueva C, Thabut D, Silva-Junior G, Martinez J, Genescà J, Bureau C, Llop E, Laleman W, Palazon JM, Castellote J, Rodrigues S, Gluud L, Ferreira CN, Barcelo R, Cañete N, Rodríguez M, Ferlitsch A, Mundi JL, Gronbaek H, Hernández-Guerra M, Sassatelli R, Dell'Era A, Senzolo M, Abraldes JG, Romero-Gómez M, Zipprich A, Casas M, Masnou H, Primignani M, Weiss E, Catalina MV, Erasmus HP, Uschner FE, Schulz M, Brol MJ, Praktiknjo M, Chang J, Krag A, Nevens F, Calleja JL, Robic MA, Conejo I, Albillos A, Rudler M, Alvarado E, Guardascione MA, Tantau M, Bosch J, Torres F, Pavesi M, Garcia-Pagán JC, Jansen C, Bañares R, International Variceal Bleeding Observational Study Group and Baveno Cooperation. **Rebleeding and mortality risk are increased by ACLF but reduced by pre-emptive TIPS.** *Journal of Hepatology.* 73(5):1082-1091. I.F.: 20.582

3. Téllez L, Rodríguez de Santiago E, Minguez B, Payance A, Clemente A, Baiges A, Morales-Arraez D, La Mura V, Llop E, Garrido E, Garrido-Lestache E, Tasayco S, Bruno O, Prieto R, Montserrat S, Pons M, Olavarría A, Dos L, Legendre A, Jesús Del Cerro M, Bañares R, García-Pagán JC, Rautou PE, Albillos A, VALDIG an EASL consortium. **Prevalence, features and predictive factors of liver nodules in Fontan surgery patients: The VALDIG Fonliver prospective cohort.** *Journal of Hepatology.* 72(4):702-710. I.F.: 20.582

4. Praktiknjo M, Simón-Talero M, Römer J, Roccarina D, Martínez J, Lampichler K, Baiges A, Low G, Llop E, Maurer MH, Zipprich A, Triolo M, Maleux G, Fialla AD, Dam C, Vidal-González J, Majumdar A, Picón C, Toth D, Darnell A, Abraldes JG, López M, Jansen C, Chang J, Schierwagen R, Uschner F, Kukuk G, Meyer C, Thomas D, Wolter K, Strassburg CP, Laleman W, La Mura V, Ripoll C, Berzigotti A, Calleja JL, Tandon P, Hernandez-Gea V, Reiberger T, Albillos A, Tsochatzis EA, Krag A, Genescà J, Trebicka J, Baveno VI-SPSS group of the Baveno Cooperation. **Total area of spontaneous portosystemic shunts independently predicts hepatic encephalopathy and mortality in liver cirrhosis.** *Journal of Hepatology.* 72(6):1140-1150. I.F.: 20.582

5. Baiges A, Turon F, Simón-Talero M, Tasayco S, Bueno J, Zekrini K, Plessier A, Franchi-Abella S, Guerin F, Mukund A, Eapen CE, Goel A, Shyamkumar NK, Coenen S, De Gottardi A, Majumdar A, Onali S, Shukla A, Carrilho FJ, Nacif L, Primignani M, Tosetti G, La Mura V, Nevens F, Witters P, Tripathi D, Tellez L, Martínez J, Álvarez-Navascués C, Fraile López ML, Procopet B, Piscaglia F, de Koning B, Llop E, Romero-Cristobal M, Tjwa E, Monescillo-Francia A, Senzolo M, Perez-La-Fuente M, Segarra A, Sarin SK, Hernández-Gea V, Patch D, Laleman W, Hartog H, Valla D, Genescà J, García-Pagán JC, REHEVASC, VALDIG an EASL consortium, Abernethy group. **Congenital Extrahepatic Portosystemic Shunts (Abernethy Malformation): An International Observational Study.** *Hepatology.* 71(2):658-669. I.F.: 14.679

6. La Mura V, Garcia-Guix M, Berzigotti A, Abraldes JG, García-Pagán JC, Villanueva C, Bosch J. **A new prognostic algorithm based on stage of cirrhosis and HVPG to improve risk-stratification after variceal bleeding.** *Hepatology.* 72(4):1353-1365. I.F.: 14.679

7. Mandorfer M, Kozbial K, Schwabl P, Chromy D, Semmler G, Stättermayer AF, Pinter M, Hernández-Gea V, Fritzer-Szekeres M, Steindl-Munda P, Trauner M, Peck-Radosavljevic M, García-Pagán JC, Ferenci P, Reiberger T. **Changes in Hepatic Venous Pressure Gradient Predict Hepatic Decompensation in Patients Who Achieved Sustained Virologic Response to Interferon-Free Therapy**. *Hepatology.* 71(3):1023-1036. I.F.: 14.679

8. Pallett LJ, Burton AR, Amin OE, Rodriguez-Tajes S, Patel AA, Zakeri N, Jeffery-Smith A, Swadling L, Schmidt NM, Baiges A, Gander A, Yu D, Nasralla D, Froghi F, Iype S, Davidson BR, Thorburn D, Yona S, Forns X, Maini MK. **Longevity and replenishment of human liver-resident memory T cells and mononuclear phagocytes.** *Journal of Experimental Medicine.* 217(9):e20200050. I.F.: 11.743

9. Turco L, Villanueva C, La Mura V, García-Pagán JC, Reiberger T, Genescà J, Groszmann RJ, Sharma BC, Merkel C, Bureau C, Alvarado E, Abraldes JG, Albillos A, Bañares R, Peck-Radosavljevic M, Augustin S, Sarin SK, Bosch J, García-Tsao G . **Lowering Portal Pressure Improves Outcomes of Patients With Cirrhosis, With or Without Ascites: A Meta-Analysis.** *Clinical Gastroenterology and Hepatology.* 18(2):313-327.e6. I.F.: 8.549

10. Pietrosi G, Fernández-Iglesias A, Pampalone M, Ortega-Ribera M, Lozano JJ, García-Calderó H, Abad-Jordà L, Conaldi PG, Parolini O, Vizzini G, Luca A, Bosch J, Gracia-Sancho J. **Human amniotic stem cells improve hepatic microvascular dysfunction and portal hypertension in cirrhotic rats**. *Liver International.* 40(10):2500-2514. I.F.: 5.175

11. Llovet, Laura-Patricia; Gratacos-Gines, Jordi; Ortiz, Oswaldo; Rodriguez-Tajes, Sergio; Lens, Sabela; Reverter, Enric; Ruiz-Ortiz, Estibaliz; Costa, Josep; Vinas, Odette; Forns, Xavier; Pares, Albert; Londono, Maria-Carlota. **Higher seroprevalence of hepatitis E virus in autoimmune hepatitis: Role of false-positive antibodies.** *Liver International.* 40(3):558-564. I.F.: 5.175

12. Baiges A, de la Morena-Barrio ME, Turon F, Miñano A, Alberto Ferrusquía J, Magaz M, Reverter JC, Vicente V, Hernández-Gea V, Corral J, García-Pagán JC. **Congenital antithrombin deficiency in patients with splanchnic vein thrombosis.** *Liver International.* 40(5):1168-1177. I.F.: 5.175

13. Thiele M, Hugger MB, Kim Y, Rautou PE, Elkrief L, Jansen C, Verlinden W, Allegretti G, Israelsen M, Stefanescu H, Piscaglia F, García-Pagán JC, Franque S, Berzigotti A, Castera L, Jeong WK, Trebicka J, Krag A. **2D shear wave liver elastography by Aixplorer to detect portal hypertension in cirrhosis: An individual patient data meta-analysis.** *Liver International.* 40(6):1435-1446. I.F.: 5.175

14. Chiva-Blanch G; Jiménez C; Pinyol M; Herreras Z; Catalán M; Martínez-Huélamo M; Lamuela-Raventos RM; Sala-Vila A; Cofán M; Gilabert R; Jiménez A; Ortega E. **5-CIS-, trans-and total lycopene plasma concentrations inversely relate to atherosclerotic plaque burden in newly diagnosed type 2 diabetes subjects.** *Nutrients.* 12(6):1696. I.F.: 4.546

15. Ardevol A, Alvarado-Tapias E, Garcia-Guix M, Brujats A, Gonzalez L, Hernández-Gea V, Aracil C, Pavel O, Cuyas B, Graupera I, Colomo A, Poca M, Torras X, Concepción M, Villanueva C . **Early rebleeding increases mortality of variecal bleeders on secondary prophylaxis with β-blockers and ligation.** *Digestive And Liver Disease.* 52(9):1017-1025. I.F.: 3.570

16. De Lacy FB; Taurà P; Arroyave MC; Trépanier JS; Ríos J; Bravo R; Ibarzabal A; Pena R; Deulofeu R; Lacy AM. **Impact of pneumoperitoneum on intra-abdominal microcirculation blood flow: an experimental randomized controlled study of two insufflator models during transanal total mesorectal excision: An experimental randomized multi-arm trial with parallel treatment design.** *Surgical Endoscopy and other Interventional Techniques.* 34(10):4494-4503. I.F.: 3.149

17. Alvarez-Larrán A, Pereira A, Magaz M, Hernández-Boluda JC, Garrote M, Cuevas B, Ferrer-Marín F, Gómez-Casares MT, García-Gutiérrez V, Mata-Vázquez MI, Turon F, Hernandez-Gea V, Arellano-Rodrigo E, Cervantes F, García-Pagán JC, GEMFIN and REHEVASC groups. **Natural history of polycythemia vera and essential thrombocythemia presenting with splanchnic vein thrombosis.** *Annals of Hematology.* 99(4):791-798. I.F.: 2.904

Review / I.F.: 32.297

1. Magaz M, Baiges A, Hernández-Gea V. **Precision medicine in variceal bleeding: Are we there yet?** *Journal of Hepatology.* 72(4):774-784. I.F.: 20.582

2. Mandorfer M, Hernández-Gea V, García-Pagán JC, Reiberger T. **Noninvasive Diagnostics for Portal Hypertension: A Comprehensive Review.** *Seminars in Liver Disease.* 40(3):240-255. I.F.: 4.457

3. Lafoz E; Ruart M; Anton A; Oncins A; Hernández-Gea V. **The Endothelium as a Driver of Liver Fibrosis and Regeneration.** *Cells.* 9(4):929. I.F.: 4.366

4. Nicoară-Farcău O, Soy G, Magaz M, Baiges A, Turon F, Garcia-Criado A, Barrufet M, Burrel M, Hernández-Gea V, García-Pagán JC. **New Insights into the Pathogenesis, Risk Factors, and Treatment of Portal Vein Thrombosis in Patients with Cirrhosis.** *Seminars in Thrombosis and Hemostasis.* 46(6):673-681. I.F.: 2.892

5. García Pagán JC, Saffo S, Mandorfer M, Garcia-Taso G. **Where does TIPS fit in the management of patients with cirrhosis?** *JHEP Reports.* 2(4):100122

Letters / I.F.: 38.268

1. Trebicka J; Gu W; Garcia-Pagán JC; Bosch J; Bañares R. **Reply to: "Pre-emptive TIPS for acute variceal bleeding in acute-on-chronic liver failure: Is there enough evidence for a routine recommendation?": pTIPS for variceal bleeding in ACLF patients: when and why?** *Journal of Hepatology.* 73(4):977-979. I.F.: 20.582

2. Reverter E; Ott P. **Compensated Cirrhosis and 20 mm Hg: A Point of No Return?** *American Journal of Gastroenterology.* 115(12):1970-1971. I.F.: 10.171

3. Garcia-Pagan, Juan Carlos; Bosch, Jaume; Trebicka, Jonel; Abraldes, Juan G; Albillos, Agustin; Gronbaek, Henning; Giraldez, Alvaro; Zipprich, Alexander; Bureau, Christophe; Hernandez-Gea, Virginia; Int Variceal Bleeding; Baveno Cooperation. **Letter: improve survival! Place early pre-emptive TIPSS in high-risk variceal bleeders.** *Alimentary Pharmacology & Therapeutics.* 52(5):927-928. I.F.: 7.515

Case Reports / I.F.: 7.414

1. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

Clinical Guidelines / I.F.: 35.334

1. Soret J, Debray D, Fontbrune FS, Kiladjian JJ, Saadoun D, Latour RP, Valla D, Hernandez-Gea V, Hillaire S, Dutheil D, Plessier A, Bureau C, De Raucourt E. **Risk factors for vascular liver diseases: Vascular liver diseases: position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):410-419. I.F.: 2.718

2. Coilly, A; Potier, P; Broue, P; Kounis, I; Valla, D; Hillaire, S; Lambert, V; Dutheil, D; Hernandez-Gea, V; Plessier, A; Vilgrain, V; Bureau, C. **Budd-Chiari syndrome**. *Clinics and Research in Hepatology and Gastroenterology.* 44(4):420-425. I.F.: 2.718

3. Payance, A; Ceccaldi, PF; De Raucourt, E; Valla, D; Hillaire, S; Dutheil, D; Hernandez-Gea, V; Bureau, C; Plessier, A. **Pregnancy and vascular liver diseases Vascular liver diseases: position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):433-437. I.F.: 2.718

4. Ollivier-Hourmand, I; Nguyen, N; De Gottardi, A; Valla, D; Hillaire, S; Dutheil, D; Bureau, C; Hernandez-Gea, V; De Raucourt, E; Plessier, A. **Management of anticoagulation in adult patients with chronic parenchymal or vascular liver disease Vascular liver diseases: Position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):438-446. I.F.: 2.718

5. Giudicelli, H; Rautou, PE; Paradis, V; Bedossa, P; Goria, O; Lambert, V; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C; Valla, D. **Porto-sinusoidal vascular disease. Vascular liver diseases: Position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):447-451. I.F.: 2.718

6. Guerin, F; Abella, SF; McLin, V; Ackermann, O; Girard, M; Cervoni, JP; Savale, L; Hernandez-Gea, V; Valla, D; Hillaire, S; Dutheil, D; Bureau, C; Gonzales, E; Plessier, A. **Congenital portosystemic shunts Vascular liver diseases: Position papers from the francophone network for vascular liver diseases, the French Association for the Study of the Liver (AFEF), and ERN-rare liver**. *Clinics and Research in Hepatology and Gastroenterology.* 44(4):452-459. I.F.: 2.718

7. Heurgue, A; Habes, D; Brugel, M; Franchi-Abella, S; Condat, B; Valla, D; Hillaire, S; Debray, D; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C; Payance, A. **Recent (non-cirrhotic) extrahepatic portal vein obstruction.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):460-465. I.F.: 2.718

8. Aurélie P; Gasperment M; Debray D; Le Beux E; Brault C; Ollivier-Hourmand I; Dutheil D; Leclercq A; Devictor J; Hernández-Gea V; Pierre Emmanuel R; Goria O. **Social and medical support initiatives in vascular liver diseases in France, from child to adult.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):466-470. I.F.: 2.718

9. Larrey, D; Meunier, L; Valla, D; Hillaire, S; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C. **Drug induced liver injury and vascular liver disease.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):471-479. I.F.: 2.718

10. De Ledinghen, V; Villate, A; Robin, M; Decraecker, M; Valla, D; Hillaire, S; Hernandez-Gea, V; Dutheil, D; Bureau, C; Plessier, A. **Sinusoidal obstruction syndrome.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):480-485. I.F.: 2.718

11. Goria, O; Archambeaud, I; Lemaitre, C; Dutheil, D; Plessier, A; Rautou, PE; Hernandez-Gea, V; Valla, D. **Ischemic cholangiopathy: An update.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):486-490. I.F.: 2.718

12. Elkrief L; Houssel-Debry P; Ackermann O; Franchi-Abella S; Branchereau S; Valla D; Hillaire S; Dutheil D; Plessier A; Hernandez-Gea V; Bureau C. **Portal cavernoma or chronic non cirrhotic extrahepatic portal vein obstruction.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):491-496. I.F.: 2.718

13. Abergel, A; Gasperment, M; Nery, FG; Buchard, B; Lebreton, A; Hordonneau, C; Duron, C; Valla, D; Sophie, H; Ledain-Rautou, E; Hernandez-Gea, V; Dutheil, D; Plessier, A; Bureau, C; Francoz, C. **Extrahepatic portal vein obstruction (EHPVO) in cirrhosis.** *Clinics and Research in Hepatology and Gastroenterology.* 44(4):497-502. I.F.: 2.718

Consortium Publications / I.F.: 49.504

1. Garcia-Tsao G, Bosch J, Kayali Z, Harrison SA, Abdelmalek MF, Lawitz E, Satapathy SK, Ghabril M, Shiffman ML, Younes ZH, Thuluvath PJ, Berzigotti A, Albillos A, Robinson JM, Hagerty DT, Chan JL, Sanyal AJ, IDN-6556-14 Investigators(‡). **Randomized placebo-controlled trial of emricasan for non-alcoholic steatohepatitis-related cirrhosis with severe portal hypertension.** *Journal of Hepatology.* 72(5):885-895. I.F.: 20.582

2. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

3. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

4. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of the American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

GRANTS FOR RESEARCH IN PROGRESS

García-Pagán JC, Fondevila C. **Hemodinàmica hepàtica i hipertensió portal.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00517
Duration: 01/01/2017-30/09/2021

García-Pagán JC. **Estudio prospectivo multicéntrico, aleatorizado del efecto de Rivaroxaban sobre la supervivencia y el desarollo de complicaciones de la hipertensión portal en pacientes con cirrosis.**
Sponsored by: Instituto de Salud Carlos III

(ISCIII). FIS_ICI14/00133
Duration: 01/01/2015-31/12/2020

García-Pagán JC, Escolar G. **Targeting endothelial dysfunction in highly prevalent diseases: characterization and validatin of prognostic biomarkers and identification of potential therapeutic strategies.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PIE15/00027
Duration: 01/01/2016-30/11/2020

García-Pagán JC. **Plataforma Red Nacional de Biobancos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PT17/0015/0016
Duration: 01/01/2018-31/12/2020

García-Pagán JC. **Caracterización de la cirrosis de regresión. Identificación de vías moleculares clave y nuevas estrategias terapéuticas para su potenciación.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-105148RB-I00
Duration: 01/06/2020-31/05/2023

García-Pagán JC. **European Registry of patients treated with TIPS following a standardized, state of the art, pre, peri and post procedural approach: The EUROTIPS project.**
Sponsored by: European association for the study of the liver. INT_EASL_RG_19
Duration: 20/07/2020-19/07/2024

Hernández-Gea V. **La autofatiga endotelial gobierna la respuesta de la célula hepática estrellada al daño hepático: regeneración o fibrosis? Análisis del secretoma endotelial para el desarrollo de nuevos tratamientos antofibroticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00398
Duration: 01/01/2018-31/12/2020

Reverter E. **Caracterización hemodinámica del paciente cirrótico crítico: fiabilidad de la monitorización invasiva y ecográfica y valor pronóstico de las variables de congestión sistémica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01214
Duration: 01/01/2018-31/12/2021

DOCTORAL THESES

Garcia-Pagan JC, Hernandez-Gea V. **Rare vascular liver diseases: improving diagnostic techniques and knowledge in natural history.**
PhD student: Anna Baiges Aznar

Garcia-Pagan JC, Hernandez-Gea V. **Modulación de la autofagia como posible diana terapéutica durante la disfunción endotelial y la fibrosis hepática.**
PhD student: Maria Ruart Millan

3.12 Chronic liver diseases: molecular mechanisms and clinical consequences

LOCATION
CEK building, floor 3

KEYWORDS
1. **Chronic liver diseases**
2. **Alcohol**
3. **NAFLD**
4. **Cirrhosis**
5. **Inflammation**

RELATED DISEASES
1. **Cirrhosis and associated complications; ascites, hepatic encephalopathy, bacterial infections**
2. **Non-alcoholic fatty liver disease and non-alcoholic steatohepatitis**
3. **Alcoholic liver disease**

GROUP INVOLVED IN
AGAUR_SGR17: 01281

AWARDS
Premi extraordinari de Doctorat del curs acadèmic 2018-2019
Institution: Facultat de Medicina i Ciències de la Salut (UB)
Awardee/s: Cristina Solé

Original publications

TOTAL	21
IF	284,38
Mean IF	13,54
Q1	90%
D1	12%
MA	24%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Pere Ginès (HCB)
T. 93 227 17 13
pgines@clinic.cat

RESEARCHERS
Núria Fabrellas (UB)
Javier Fernández Gómez (HCB)
Isabel Graupera (HCB)
Elsa Solà (HCB)

ASSISTANT RESEARCHERS
Maria del Mar Coll (CIBER)

POST-DOCTORAL RESEARCHERS
Delia Blaya (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Emma Avitable (IDIBAPS)
Octavi Bassegoda (HCB)
Adrià Juanola (HCB)
Celia Martínez Sánchez (FCRB)
Laura Napoleone (IDIBAPS)
Elisa Pose (IDIBAPS)

TECHNICIANS
Claudia García (IDIBAPS)

NURSING STAFF
María Fe Alvarez (FCRB)
Fatima Aziz (HCB)
Nini Johana Bustos (HCB)
Aura Capdevila (FCRB)
Marta Carol (IDIBAPS)
Marta Cervera (FCRB)
Sara Martínez Cumplido (HCB-FCRB)
Martina Pérez Guasch (HCB)
Ana Belén Rubio (IDIBAPS)
María Sánchez Morata (FCRB)

ADMINISTRATIVE STAFF
Beatriz Márquez (FCRB)
Roser Poblet (IDIBAPS)
Nicki van Berckel (HCB-FCRB)

COLLABORATORS
Ann Thu Ma (HCB)

PROBLEM

Cirrhosis is a common disease with high morbidity and mortality rates. The only definitive treatment is a liver transplant.

The disease evolves from a compensated phase, in which the patient shows no symptoms and presents a good prognosis, to patients who present complications and a poor outcome. Multiorgan failure with a high mortality rate may also occur in certain patients.

It is therefore very important to research the pathophysiological mechanisms that explain the disease's progression in order to find therapeutic targets and stop its course.

APPROACH

The main research interests of the group are the pathophysiologic mechanisms that explain the disease progression. It starts with the intestinal microbiome and analyses the hepatic transcriptome and systemic and hepatic inflammation.

It studies different biomarkers to determine the prognosis of patients with cirrhosis and its complications, such as renal failure. It trials new treatments, such as albumin or statins, for patients with complications of cirrhosis and conducts therapeutic studies to try to prevent the progression of the disease.

The research field of the group encompasses also the investigation of the pathogenesis, natural history, and new treatments for patients with alcohol-related and non-alcoholic fatty liver disease, which are currently the two most important etiologies of chronic liver disease in Europe.

An important research interest of the group is the evaluation of methods for screening for liver fibrosis in the general population and also in subjects with risk factors of liver disease as those with alcohol risk consumption.

IMPACT

Patients with cirrhosis present an abnormal intestinal microbiome and hepatic transcriptome, with increased expression of proinflammatory genes and increased systemic inflammation.

In one of the projects, the patients receive anti-inflammatory treatment (statins) and treatment for the alterations in the microbiome (rifaximin) and the number of complications these patients present is expected to decline, along with the incidence of acute –on-chronic liver failure.

The group is also involved in multicenter studies for the development of new therapies in patients with non-alcoholic fatty liver disease. Also studies on pathophysiology, natural history and regression of alcohol-related liver disease are developed in the group.

Furthermore, using transient elastography, a research line of the group is aimed at identifying patients at early stages of the disease in order to provide them with early treatment.

RESEARCH LINES

- Analyze different biomarkers to predict patients' outcomes and prognosis.

- Characterization of systemic and hepatic inflammation and gut microbiome in patients with cirrhosis, encompassing all stages of the disease.

- Screening for liver fibrosis. A population-based study in european countries. The 'LiverScreen' project.

- Studying different treatment strategies to halt disease progression. The ´Liver-Hope´project.

- Investigating natural history and new treatments for patients with non-alcoholic fatty liver disease.

- Studying pathophysiology of natural history and regression of alcohol-related liver disease.

PUBLICATIONS

Originals / I.F.: 284.384

1. Ellinghaus D, Degenhardt F, Bujanda L, Buti M, Albillos A, Invernizzi P, Fernández J, Prati D, Baselli G, Asselta R, Grimsrud MM, Milani C, Aziz F, Kässens J, May S, Wendorff M, Wienbrandt L, Uellendahl-Werth F, Zheng T, Yi X, de Pablo R, Chercoles AG, Palom A, Garcia-Fernandez AE, Rodriguez-Frias F, Zanella A, Bandera A, Protti A, Aghemo A, Lleo A, Biondi A, Caballero-Garralda A, Gori A, Tanck A, Carreras Nolla A, Latiano A, Fracanzani AL, Peschuck A, Julià A, Pesenti A, Voza A, Jiménez D, Mateos B, Nafria Jimenez B, Quereda C, Paccapelo C, Gassner C, Angelini C, Cea C, Solier A, Pestaña D, Muñiz-Diaz E, Sandoval E, Paraboschi EM, Navas E, García Sánchez F, Ceriotti F, Martinelli-Boneschi F, Peyvandi F, Blasi F, Téllez L, Blanco-Grau A, Hemmrich-Stanisak G, Grasselli G, Costantino G, Cardamone G, Foti G, Aneli S, Kurihara H, ElAbd H, My I, Galván-Femenia I, Martín J, Erdmann J, Ferrusquía-Acosta J, Garcia-Etxebarria K, Izquierdo-Sanchez L, Bettini LR, Sumoy L, Terranova L, Moreira L, Santoro L, Scudeller L, Mesonero F, Roade L, Rühlemann MC, Schaefer M, Carrabba M, Riveiro-Barciela M, Figuera Basso ME, Valsecchi MG, Hernandez-Tejero M, Acosta-Herrera M, D'Angiò M, Baldini M, Cazzaniga M, Schulzky M, Cecconi M, Wittig M, Ciccarelli M, Rodríguez-Gandía M, Bocciolone M, Miozzo M, Montano N, Braun N, Sacchi N, Martínez N, Özer O, Palmieri O, Faverio P, Preatoni P, Bonfanti P, Omodei P, Tentorio P, Castro P, Rodrigues PM, Blandino Ortiz A, de Cid R, Ferrer R, Gualtierotti R, Nieto R, Goerg S, Badalamenti S, Marsal S, Matullo G, Pelusi S, Juzenas S, Aliberti S, Monzani V, Moreno V, Wesse T, Lenz TL, Pumarola T, Rimoldi V, Bosari S, Albrecht W, Peter W, Romero-Gómez M, D'Amato M, Duga S, Banales JM, Hov JR, Folseraas T, Valenti L, Franke A, Karlsen TH Severe Covid-19 GWAS Group. **Genomewide Association Study of Severe Covid-19 with Respiratory Failure.** *New England Journal of Medicine.* 383(16):1522-1534. I.F.: 74.699

2. Bassegoda O, Huelin P, Ariza X, Solé C, Juanola A, Gratacós-Ginès J, Carol M, Graupera I, Pose E, Napoleone L, Albertos S, de Prada G, Cervera M, Fernández J, Fabrellas N, Poch E, Solà E, Ginès P. **Development of chronic kidney disease after acute kidney injury in patients with cirrhosis is common and impairs clinical outcomes.** *Journal of Hepatology.* 72(6):1132-1139. I.F.: 20.582

3. Trebicka J, Fernandez J, Papp M, Caraceni P, Laleman W, Gambino C, Giovo I, Uschner FE, Jimenez C, Mookerjee R, Gustot T, Albillos A, Bañares R, Janicko M, Steib C, Reiberger T, Acevedo J, Gatti P, Bernal W, Zeuzem S, Zipprich A, Piano S, Berg T, Bruns T, Bendtsen F, Coenraad M, Merli M, Stauber R, Zoller H, Ramos JP, Solè C, Soriano G, de Gottardi A, Gronbaek H, Saliba F, Trautwein C, Özdogan OC, Francque S, Ryder S, Nahon P, Romero-Gomez M, Van Vlierberghe H, Francoz C, Manns M, Garcia E, Tufoni M, Amoros A, Pavesi M, Sanchez C, Curto A, Pitarch C, Putignano A, Moreno E, Shawcross D, Aguilar F, Clària J, Ponzo P, Jansen C, Vitalis Z, Zaccherini G, Balogh B, Vargas V, Montagnese S, Alessandria C, Bernardi M, Ginès P, Jalan R, Moreau R, Angeli P, Arroyo V, PREDICT STUDY group of the EASL-CLIF Consortium. **The PREDICT study uncovers three clinical courses in acutely decompensated cirrhosis with distinct pathophysiology.** *Journal of Hepatology.* 73(4):842-854. I.F.: 20.582

4. Moreau R, Clària J, Aguilar F, Fenaille F, Lozano JJ, Junot C, Colsch B, Caraceni P, Trebicka J, Pavesi M, Alessandria C, Nevens F, Saliba F, Welzel TM, Albillos A, Gustot T, Fernández J, Moreno C, Baldassarre M, Zaccherini G, Piano S, Montagnese S, Vargas V, Genescà J, Solà E, Bernal W, Butin N, Hautbergue T, Cholet S, Castelli F, Jansen C, Steib C, Campion D, Mookerjee R, Rodríguez-Gandía M, Soriano G, Durand F, Benten D, Bañares R, Stauber RE, Gronbaek H, Coenraad MJ, Ginès P, Gerbes A, Jalan R, Bernardi M, Arroyo V, Angeli P, CANONIC Study Investigators of the EASL Clif Consortium, Grifols Chair, European Foundation for the Study of Chronic Liver Failure (EF Clif). **Blood metabolomics uncovers inflammation-associated mitochondrial dysfunction as a potential mechanism underlying ACLF.** *Journal of Hepatology.* 72(4):688-701. I.F.: 20.582

5. Trebicka J, Fernandez J, Papp M, Caraceni P, Laleman W, Gambino C, Giovo I, Uschner FE, Jansen C, Jimenez C, Mookerjee R, Gustot T, Albillos A, Bañares R, Jarcuska P, Steib C, Reiberger T, Acevedo J, Gatti P, Shawcross DL, Zeuzem S, Zipprich A, Piano S, Berg T, Bruns T, Danielsen KV, Coenraad M, Merli M, Stauber R, Zoller H, Ramos JP, Solé C, Soriano G, de Gottardi A, Gronbaek H, Saliba F, Trautwein C, Kani HT, Francque S, Ryder S, Nahon P, Romero-Gomez M, Van Vlierberghe H, Francoz C, Manns M, Garcia-Lopez E, Tufoni M, Amoros A, Pavesi M, Sanchez C, Praktiknjo M, Curto A, Pitarch C, Putignano A, Moreno E, Bernal W, Aguilar F, Clària J, Ponzo P, Vitalis Z, Zaccherini G, Balogh B, Gerbes A, Vargas V, Alessandria C, Bernardi M, Ginès P, Moreau R, Angeli P, Jalan

R, Arroyo V, PREDICT STUDY group of the EASL-CLIF CONSORTIUM. **PREDICT identifies precipitating events associated with the clinical course of acutely decompensated cirrhosis.** *Journal of Hepatology.* S0168-8278(20):33772-7. I.F.: 20.582

6. Desai AP; Knapp SM; Orman ES; Ghabril MS; Nephew LD; Anderson M; Ginès P; Chalasani NP; Patidar KR. **Changing epidemiology and outcomes of acute kidney injury in hospitalized patients with cirrhosis - a US population-based study.** *Journal of Hepatology.*73(5):1092-1099. I.F.: 20.582

7. Casulleras M, Flores-Costa R, Duran-Güell M, Alcaraz-Quiles J, Sanz S, Titos E, López-Vicario C, Fernández J, Horrillo R, Costa M, de la Grange P, Moreau R, Arroyo V, Clària J. **Albumin internalizes and inhibits endosomal TLR signaling in leukocytes from patients with decompensated cirrhosis.** *Science Translational Medicine.* 12(566):eaax5135. I.F.: 16.304

8. Pose E, Napoleone L, Amin A, Campion D, Jimenez C, Piano S, Roux O, Uschner FE, de Wit K, Zaccherini G, Alessandria C, Angeli P, Bernardi M, Beuers U, Caraceni P, Durand F, Mookerjee RP, Trebicka J, Vargas V, Andrade RJ, Carol M, Pich J, Ferrero J, Domenech G, Llopis M, Torres F, Kamath PS, Abraldes JG, Solà E, Ginès P. **Safety of two different doses of simvastatin plus rifaximin in decompensated cirrhosis (LIVERHOPE-SAFETY): a randomised, double-blind, placebo-controlled, phase 2 trial.** *Lancet Gastroenterology & Hepatology.* 5(1):31-41. I.F.: 14.789

9. Blasi A, Patel VC, Adelmeijer J, Azarian S, Hernandez Tejero M, Calvo A, Fernández J, Bernal W, Lisman T. **Mixed fibrinolytic phenotypes in decompensated cirrhosis and ACLF with hypofibrinolysis in those with complications and poor survival.** *Hepatology.* 71(4):1381-1390. I.F.: 14.679

10. Patidar KR, Shamseddeen H, Xu C, Ghabril MS, Nephew LD, Desai AP, Anderson M, El-Achkar TM, Ginès P, Chalasani NP, Orman ES . **Hospital-Acquired Versus Community-Acquired Acute Kidney Injury in Patients With Cirrhosis: A Prospective Study.** *American Journal of Gastroenterology.* 115(9):1505-1512. I.F.: 10.171

11. Fernández J, Angeli P, Trebicka J, Merli M, Gustot T, Alessandria C, Aagaard NK, de Gottardi A, Welzel TM, Gerbes A, Soriano G, Vargas V, Albillos A, Salerno F, Durand F, Bañares R, Stauber R, Prado V, Arteaga M, Hernández-Tejero M, Aziz F, Morando F, Jansen C, Lattanzi B, Moreno C, Campion D, Gronbaek H, Garcia R, Sánchez C, García E, Amorós A, Pavesi M, Clària J, Moreau R, Arroyo V. **Efficacy of Albumin Treatment for Patients with Cirrhosis and Infections Unrelated to Spontaneous Bacterial Peritonitis.** *Clinical Gastroenterology and Hepatology.* 18(4):963-973.e14. I.F.: 8.549

12. Tutusaus A; de Gregorio E; Cucarull B; Cristóbal H; Aresté C; Graupera I; Coll M; Colell A; Gausdal G; Lorens JB; García de Frutos P; Morales A; Marí M. **A Functional Role of GAS6/TAM in Nonalcoholic Steatohepatitis Progression Implicates AXL as Therapeutic Target.** *Cmgh Cellular and Molecular Gastroenterology and Hepatology.* 9(3):349-368. I.F.: 7.076

13. Bastida C, Hernández-Tejero M, Aziz F, Espinosa C, Sanz M, Brunet M, López E, Fernández J, Soy D. **Meropenem population pharmacokinetics in patients with decompensated cirrhosis and severe infections.** *Journal of Antimicrobial Chemotherapy.* 75(12):3619-3624. I.F.: 5.439

14. Torner M; Mangal A; Scharnagl H; Jansen C; Praktiknjo M; Queck A; Gu W; Schierwagen R; Lehmann J; Uschner FE; Graf C; Strassburg CP; Fernandez J; Stojakovic T; Woitas R; Trebicka J. **Sex specificity of kidney markers to assess prognosis in cirrhotic patients with TIPS.** *Liver International.* 40(1):186-193. I.F.: 5.175

15. Perpinan, Elena; Perez-Del-Pulgar, Sofia; Londono, Maria-Carlota; Marino, Zoe; Bartres, Concepcion; Gonzalez, Patricia; Garcia-Lopez, Mireia; Pose, Elisa; Lens, Sabela; Maini, Mala K; Forns, Xavier; Koutsoudakis, George. **Cirrhosis Hampers Early and Rapid Normalization of Natural Killer Cell Phenotype and Function in Hepatitis C Patients Undergoing Interferon-Free Therapy.** *Frontiers in Immunology.* 11:129. I.F.: 5.085

16. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of the American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

17. Chen J, Argemi J, Odena G, Xu MJ, Cai Y, Massey V, Parrish A, Vadigepalli R, Altamirano J, Cabezas J, Gines P, Caballeria J, Snider N, Sancho-Bru P, Akira S, Rusyn I, Gao B, Bataller R. **Hepatic lipocalin 2 promotes liver fibrosis and portal hypertension**. *Scientific Reports.* 10(1):15558. I.F.: 3.998

18. Fabrellas N, Moreira R, Carol M, Cervera M, de Prada G, Perez M, Vazquez E, Sola M, Sancho R, Juanola A, Pose E, Solé C, Graupera I, Solà E, Kamath PS, Ginès P. **Psychological Burden of Hepatic Encephalopathy on Patients and Caregivers.** *Clinical and Translational Gastroenterology.* 11(4):e00159. I.F.: 3.968

19. Risco E; Sauch G; Albero A; Acar-Denizli N; Zabalegui A; Kostov B; Amil P; Alonso A; Rios A; Martín J; Fabrellas N. **Spanish validation of the "user reported measure of care coordination" questionnaire for older people with complex, chronic conditions.** *International Journal of Environmental Research and Public Health.* 17(18):1-13. I.F.: 2.849

20. Juvé-Udina ME, González-Samartino M, López-Jiménez MM, Planas-Canals M, Rodríguez-Fernández H, Batuecas Duelt IJ, Tapia-Pérez M, Pons Prats M, Jiménez-Martínez E, Barberà Llorca MÀ, Asensio-Flores S, Berbis-Morelló C, Zuriguel-Pérez E, Delgado-Hito P, Rey Luque Ó, Zabalegui A, Fabrellas N, Adamuz J. **Acuity, nurse staffing and workforce, missed care and patient outcomes.** *Journal of Nursing Management.* 28(8):2216-2229. I.F.: 2.243

21. Sola-Pola, Montserrat; Morin-Fraile, Victoria; Fabrellas-Padres, Nuria; Raurell-Torreda, Marta; Guanter-Peris, Lourdes; Guix-Comellas, Eva; Pulpon-Segura, Anna M. **The usefulness and acceptance of the OSCE in nursing schools.** *Nurse Education in Practice.* 43:102736. I.F.: 1.614

Review / I.F.: 50.902

1. Bernardi M, Angeli P, Claria J, Moreau R, Gines P, Jalan R, Caraceni P, Fernandez J, Gerbes AL, O'Brien AJ, Trebicka J, Thevenot T, Arroyo V. **Albumin in decompensated cirrhosis: new concepts and perspectives.** *Gut.* 69(6):1127-1138. I.F.: 19.819

2. Fabrellas, Nuria; Carol, Marta; Palacio, Ester; Aban, Marites; Lanzillotti, Tommaso; Nicolao, Gea; Chiappa, Maria Teresa; Esnault, Vanessa; Graf-Dirmeier, Sabine; Helder, Jeltje; Gossard, Andrea; Lopez, Mireia; Cervera, Marta; Dols, Lacey L; LiverHope Consortium. **Nursing Care of Patients With Cirrhosis: The LiverHope Nursing Project.** *Hepatology*. 71(3):1106-1116. I.F.: 14.679

3. Allegretti AS; Solà E; Ginès P. **Clinical Application of Kidney Biomarkers in Cirrhosis.** *American Journal of Kidney Diseases*. 76(5):710-719. I.F.: 6.618

4. Mücke MM; Mücke VT; Graf C; Schwarzkopf KM; Ferstl PG; Fernandez J; Zeuzem S; Trebicka J; Lange CM; Herrmann E. **Efficacy of Norfloxacin Prophylaxis to Prevent Spontaneous Bacterial Peritonitis: A Systematic Review and Meta-Analysis.** *Clinical and Translational Gastroenterology*. 11(8):e00223. I.F.: 3.968

5. Cid J; Fernández J; Palomo M; Blasco M; Bailó N; Diaz-Ricart M; Lozano M. **Hyperhemolytic Transfusion Reaction in Non-Hemoglobinopathy Patients and Terminal Complement Pathway Activation: Case Series and Review of the Literature.** *Transfusion Medicine Reviews*. 34(3):172-177. I.F.: 3.328

6. Pedregosa S, Fabrellas N, Risco E, Pereira M, Dmoch-Gajzlerska E, Şenuzun F, Martin S, Zabalegui A. **Effective academic-practice partnership models in nursing students' clinical placement: A systematic literature review**. *Nurse Education Today*. 95:104582. I.F.: 2.490

Letters / I.F.: 42.745

1. Bassegoda O, Solà E, Ginès P . **Reply to: "Transition of AKI to CKD in cirrhosis - effect of baseline eGFR and unanswered questions"**. *Journal of Hepatology*. 73(3):738-739. I.F.: 20.582

2. Solé C; Solà E; Kamath P; Ginès P. **Lack of evidence for a continuum between hepatorenal syndrome and acute tubular necrosis.** *Journal of Hepatology*. 72(3):581-582. I.F.: 20.582

3. Fernández J, en nombre de todo el equipo de la UCI Hepática. **From the liver ICU to the COVID ICU: The story of a transformation.** *Gastroenterología y Hepatología*. 43(7):386-388. I.F.: 1.581

Editorial / I.F.: 13.119

1. Solé C, Solà E, Ginès P. **Are We Ready to Evaluate Adrenal Function in Patients With Decompensated Cirrhosis and Acute on Chronic Liver Failure?** *Clinical Gastroenterology and Hepatology*. 18(5):1040-1042. I.F.: 8.549

2. Sola, Elsa; Gines, Pere. **Chronic Kidney Disease in Cirrhosis: Emerging Complication With Negative Impact in the Liver Transplant Setting.** *Liver Transplantation*. 26(4):483-484. I.F.: 4.570

Case Reports / I.F.: 7.414

1. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine*. 48(12):e1350-e1355. I.F.: 7.414

Consortium Publications / I.F.: 25.969

1. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine*. 46(12):2200-2211. I.F.: 17.679

2. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care*. 24(1):597. I.F.: 6.407

3. Villar J; Añón JM; Ferrando C; Aguilar G; Muñoz T; Ferreres J; Ambrós A; Aldecoa C; Suárez-Sipmann F; Thorpe KE; Jüni P; Slutsky AS; Ferrando C; Mellado-Artigas R; Fernández J; Hernández M; Castellá M; Castro P; Badia JR; Aguilar G; Carbonell JA; Badenes R; Tornero C; Ferreres J; Blasco ML; Carbonell N; Serrano A; Juan M; Gómez-Herreras JI; López ML; Martín C; Del Campo R; Puig-Bernabeu J; Ferrer C; De Andrés J; Serna-Grande P; Tamayo G; Martínez-Ruíz A; Bilbao-Villasante I; Villar J; Fernández RL; Calvo CP; Vidal Á; Figueira JC; Asensio MJ; Maseda E; Suárez-Sipmann F; Ramasco F; Varela-Durán M; Díaz-Parada P; Trenado-Álvarez J; Fernández MM; Rico-Feijoo J; Fernández L; Sánchez-Ballesteros J; Blanco-Schweizer P; Martínez D; Soler JA; Jüni P; Thomas R; Wysocki K; De Verno P; Lakhanpal G; Juando-Prats C. **Efficacy of dexamethasone treatment for patients with the acute respiratory distress syndrome caused by COVID-19: Study protocol for a randomized controlled superiority trial.** *Trials*. 21(1):717. I.F.: 1.883

GRANTS FOR RESEARCH IN PROGRESS

Fabrellas N. **Cribado poblacional de fibrosis hepática con elastografía transitoria en personas con factores de riesgo de enfermedad hepática e índice de grasa hepática elevado. Estudio de validación.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01330
Duration: 01/01/2019-31/12/2021

Fernández-Gómez J. **Impacto clinico y coste/eficacia de estrategias de vigilancia epidemiológica y de optimización farmacoterapéutica antibiótica en la cirrosis descompensada.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00885
Duration: 01/01/2017-30/06/2021

Ginés P. **Grup de Hepatologia Recerca Clínica.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01281
Duration: 01/01/2017-30/09/2021

Ginés P. **Síndrome de insuficiencia hepática crónica agudizada en la cirrosis: relación con el microbioma y la inflamación sistémica. Evaluación de nuevos métodos diagnósticos y terapéuticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00043
Duration: 01/01/2017-31/12/2020

Ginés P. **A screening algorithm for non-invasive assessment of NAFLD in patients with type-2 diabetes mellitus in primary care.**
Sponsored by: Gilead Sciences (SLU).
GLD19/00125
Duration: 21/01/2020-20/01/2022

Ginés P. **Clinical evaluation of carbons of controlled porosity as a new therapeutic for the treatment of liver cirrhosis and non-alcoholic fatty liver disease.**
Sponsored by: European Commission.
CE_H2020-PHC-2014-2s
Duration: 01/05/2015-31/07/2020

Ginés P. **Simvastatin and rifaximin as new therapy for patients with decompensated cirrosis.**
Sponsored by: European Commission.
CE_H2020-SC1_16abr1s
Duration: 01/01/2017-31/12/2021

Ginés P, Clària J. **MICROBiome-based biomarkers to PREDICT decompensation of liver cirrhosis and treatment response.**
Sponsored by: European Commission.
CE_H2020-SC1_18_1s
Duration: 01/01/2019-31/03/2025

Ginés P. **FiSPlat.**
Sponsored by: European Commission.
CE_EIT_Inn20
Duration: 01/01/2020-31/12/2022

Ginés P. **Screening for liver fibrosis - population-based study across European countries.**
Sponsored by: European Commission.
CE_H2020-SC1_2019_2s
Duration: 01/01/2020-31/12/2024

Graupera I, Coll M. **Caracterización del eje tejido adiposo-hígado en la enfermedad hepática por hígado graso no alcohólico. Macrófagos infiltrantes del tejido adiposo como diana terapéutica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00862
Duration: 01/01/2019-31/12/2021

Graupera I. **Enfermedad por hígado graso no alcohólico, una epidemia con el pie en el acelerador.**
Sponsored by: Gilead Sciences (SLU).
GLD18_0173
Duration: 23/05/2019-28/02/2020

Solà E. **Caracterización del papel de la respuesta inmunológica en la progresión de la cirrosis hepática mediante inmunología de sistemas: evaluación de nuevas estrategias terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00727
Duration: 01/01/2019-31/12/2021

3.13 Liver vascular biology

LOCATION
CEK building, floor 4

KEYWORDS
1. **Chronic liver diseases**
2. **Portal hypertension**
3. **Liver microcirculation**
4. **Liver fibrosis**
5. **Liver sinusoidal endothelial cells**
6. **Liver cells secretome**
7. **Aging**
8. **Liver mechanobiology**

RELATED DISEASES
1. **Cirrhosis of the liver**
2. **Advanced chronic liver diseases**
3. **Fatty liver disease**
4. **Non-alcoholic steatohepatitis**

GROUP INVOLVED IN
CIBEREHD

Original publications

TOTAL	9
IF	89,13
Mean IF	9,90
Q1	89%
D1	56%
MA	22%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Jordi Gracia-Sancho (IDIBAPS)
T. 93 227 54 00 (Ext.: 4306)
jordi.gracia@idibaps.org

EMERITUS
Jaume Bosch Genover (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Anabel Fernández Iglesias (CIBER)
Albert Gibert (CIBER)

PRE-DOCTORAL RESEARCHERS
Laia Abad (IDIBAPS)
Nico Manicardi (IDIBAPS)
Martí Ortega Ribera (IDIBAPS)
David Sanfeliu (IDIBAPS)
Guillem Soy (HCB)

COLLABORATORS
María Andres (BLB)
Peio Aristu (BLB)
Zoe Boyer (BLB)

VISITING SCIENTISTS
Bruno De Souza (PUCRS Brasil)

PROBLEM

Liver diseases represent a serious social problem, with a health prevalence comparable to that of respiratory diseases. By way of example, over the last ten years, chronic liver disease, also known as cirrhosis, has led to the death of more than 35,000 men and 10,000 women in Spain.

The cells that are part of the liver's blood vessels, mainly sinusoidal endothelial cells, stellate cells and resident macrophages, play a key role in the development and progression of liver disease. Therefore, they can be therapeutic targets to be taken into account for the treatment and improvement of patients with liver damage.

APPROACH

The group studies the molecular and biomechanical processes that regulate the status and function of these sinusoidal cells, as well as hepatic intercellular communication mechanisms in health situations, in response to acute liver damage, in chronic liver disease (cirrhosis and steatohepatitis) and in ageing. The results obtained are applied to discover new therapeutic targets and to develop new therapies that improve microcirculation, fibrosis and liver function.

To achieve this, the group uses a wide range of experimental methods, which include tissues and primary cells (humans or rodents), models of liver disease in vivo and in vitro, cellular culture through liver-on-a-chip technology, and massive analysis of omics data, among others.

IMPACT

The group has discovered the KLF2 autophagy pathway as a key mechanism in the regulation of liver cell health. It is a finding that proposes the use of statins, which activate this pathway, as components for the treatment of cirrhosis, both in the early and very advanced stages.

In the field of ageing, it has described the changes suffered by liver microcirculation in situations of old age, both in health and acute liver damage as well as during chronic liver disease. These advances have shown that the protective agent, simvastatin, would be useful in the subpopulation of older patients. In the field of new technologies, it has developed the first human liver-on-a-chip. This innovation has already been transferred to a company and, therefore, has been placed at the service of society.

Latest research discovered the role of liver stiffness regulating liver cells phenotype in cirrhosis, thus playing a key role in its pathophysiology & treatment. In addition, we demonstrated the potential of using regenerative medicine for the amelioration of portal hypertension.

RESEARCH LINES

- Aging & liver diseases.

- Role of sinusoidal cells in the progression and regression of liver diseases.

- Sinusoidal communications in liver disease.

- Sinusoidal mechanobiology in liver diseases.

PUBLICATIONS

Originals / I.F.: 89.134

1. Gulfo J, Rotondo F, Ávalos de León CG, Cornide-Petronio ME, Fuster C, Gracia-Sancho J, Jiménez-Castro MB, Peralta C. **FGF15 improves outcomes after brain dead donor liver transplantation with steatotic and non-steatotic grafts in rats.** *Journal of Hepatology.* 73(5):1131-1143. I.F.: 20.582

2. Martí-Rodrigo A, Alegre F, Moragrega ÁB, García-García F, Martí-Rodrigo P, Fernández-Iglesias A, Gracia-Sancho J, Apostolova N, Esplugues JV, Blas-García A. **Rilpivirine attenuates liver fibrosis through selective STAT1-mediated apoptosis in hepatic stellate cells.** *Gut.* 69(5):920-932. I.F.: 19.819

3. De Chiara F, Thomsen KL, Habtesion A, Jones H, Davies N, Gracia-Sancho J, Manicardi N, Hall A, Andreola F, Paish HL, Reed LH, Watson AA, Leslie J, Oakley F, Rombouts K, Mookerjee RP, Mann J, Jalan R. **Ammonia scavenging prevents progression of fibrosis in experimental non-alcoholic fatty liver disease.** *Hepatology.* 71(3):874-892. I.F.: 14.679

4. Turco L, Villanueva C, La Mura V, García-Pagán JC, Reiberger T, Genescà J, Groszmann RJ, Sharma BC, Merkel C, Bureau C, Alvarado E, Abraldes JG, Albillos A, Bañares R, Peck-Radosavljevic M, Augustin S, Sarin SK, Bosch J, García-Tsao G . **Lowering Portal Pressure Improves Outcomes of Patients With Cirrhosis, With or Without Ascites: A Meta-Analysis.** *Clinical Gastroenterology and Hepatology.* 18(2):313-327.e6. I.F.: 8.549

5. Haute G; Luft C; Antunes G; Silveira J; de Souza Basso B; da Costa M; Levorse V; Kaiber D; Donadio M; Gracia-Sancho J; de Oliveira J. **Anti-inflammatory effect of octyl gallate in alveolar macrophages cells and mice with acute lung injury.** *Journal of Cellular Physiology.* 235(9):6073-6084. I.F.: 5.546

6. Hide D, Warren A, Fernández-Iglesias A, Maeso-Díaz R, Peralta C, Le Couteur DG, Bosch J, Cogger VC, Gracia-Sancho J. **Ischemia/reperfusion injury in the aged liver: The importance of the sinusoidal endothelium in developing therapeutic strategies for the elderly.** *Journals of Gerontology Series A-Biological Sciences and Medical Sciences.* 75(2):268-277. I.F.: 5.236

7. Hide D, Gil M, Andrade F, Rafael D, Raurell I, Bravo M, Barberá A, Gracia-Sancho J, Vargas V, Augustin S, Genescà J, Schwartz S, Martell M. **Simvastatin-loaded polymeric micelles are more effective and less toxic than conventional statins in a pre-clinical model of advanced chronic liver disease.** *Nanomedicine-Nanotechnology Biology And Medicine.* 29:102267. I.F.: 5.182

8. Pietrosi G, Fernández-Iglesias A, Pampalone M, Ortega-Ribera M, Lozano JJ, García-Calderó H, Abad-Jordà L, Conaldi PG, Parolini O, Vizzini G, Luca A, Bosch J, Gracia-Sancho J. **Human amniotic stem cells improve hepatic microvascular dysfunction and portal hypertension in cirrhotic rats**. *Liver International.* 40(10):2500-2514. I.F.: 5.175

9. Caparrós E; Juanola O; Gómez-Hurtado I; Puig-Kroger A; Piñero P; Zapater P; Linares R; Tarín F; Martínez-López S; Gracia-Sancho J; González-Navajas JM; Francés R. **Liver Sinusoidal Endothelial Cells Contribute to Hepatic Antigen-Presenting Cell Function and Th17 Expansion in Cirrhosis**. *Cells.* 9(5):1227. I.F.: 4.366

Review / I.F.: 59.961

1. Nevzorova YA, Boyer-Diaz Z, Cubero FJ, Gracia-Sancho J. **Animal Models for Liver Disease - A Practical Approach for Translational Research.** *Journal of Hepatology.* 73(2):423-440. I.F.: 20.582

2. Bosch, Jaime; Gracia-Sancho, Jordi; Abraldes, Juan G. **Cirrhosis as new indication for statins**. *Gut.* 69(5):953-962. I.F.: 19.819

3. Guixé-Muntet S; Zhu CP; Xie WF; Gracia-Sancho J. **Novel therapeutics for portal hypertension and fibrosis in chronic liver disease.** *Pharmacology & Therapeutics.* 215:107626. I.F.: 10.557

4. Boyer-Diaz Z; Morata P; Aristu-Zabalza P; Gibert-Ramos A; Bosch J; Gracia-Sancho J. **Oxidative Stress in Chronic Liver Disease and Portal Hypertension: Potential of DHA as Nutraceutical.** *Nutrients.* 12(9):2627. I.F.: 4.546

5. Maeso-Díaz R; Gracia-Sancho J. **Aging and Chronic Liver Disease**. *Seminars In Liver Disease.* 40(4):373-384. I.F.: 4.457

GRANTS FOR RESEARCH IN PROGRESS

Gracia-Sancho J. **Capilarización del endotelio sinusoidal hepático en la cirrosis: caracterización integral para el descubrimiento de nuevas dianas terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00012
Duration: 01/01/2018-31/12/2020

Gracia-Sancho J. **Seminarios internacionales de investigación en hepatología 3ª edición. Liverseminars.**
Sponsored by: Gilead Sciences (SLU).
GLD18_0127
Duration: 01/09/2019-31/12/2020

DOCTORAL THESES

Bosch J, Gracia-Sancho J. **The hepatic sinusoid in aging: phenotypic changes and novel therapeutic approaches.**
PhD student: Raquel Maeso Díaz

3.14 Fetal and perinatal medicine

LOCATION
Maternitat building

KEYWORDS
1. **Prenatal diseases**
2. **Intrauterine growth restriction**
3. **Fetal programming**
4. **Fetal brain damage**
5. **Prematurity**
6. **Congenital heart disease**

RELATED DISEASES
1. **Preeclampsia**
2. **Intrauterine growth restriction**
3. **Congenital diaphragmatic hernia**
4. **Twin-to-twin transfusion syndrome**
5. **Spina bifida**
6. **Preterm delivery**
7. **Preterm rupture of membranes**
8. **Chorioamnionitis**
9. **Congenital heart disease**
10. **Fetal alcohol syndrome**
11. **AIDS (acquired immunodeficiency syndrome)**
12. **Congenital cytomegalovirus infection**
13. **Assisted reproductive technogies**

GROUP INVOLVED IN
AGAUR_SGR17: 01531, 01734
CIBERER

Original publications

TOTAL	49
IF	216,69
Mean IF	4,42
Q1	59%
D1	39%
MA	55%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Eduard Gratacós (HCB)
T. 93 227 99 46
gratacos@clinic.cat

RESEARCHERS
Gemma Arca (IDIBAPS)
Ángela Arranz (HCB-FCRB)
Mar Bennasar (HCB)
Antoni Borrell (HCB-IDIBAPS)
Francesc Botet (HCB-IDIBAPS)
Elena Casals (HCB)
Maria Teresa Cobo (HCB-IDIBAPS)
Fátima Crispi (HCB-IDIBAPS)
Elisenda Eixarch (HCB-IDIBAPS)
Josep Figueras (HCB-IDIBAPS)
Francesc Figueras (HCB-IDIBAPS)
Oscar García Algar (HCB-IDIBAPS)
Olga Gómez del Rincón (HCB-IDIBAPS)
Anna Gonce (HCB-IDIBAPS)
Marta López Rojano (HCB-IDIBAPS)
Jose Mª Martínez Crespo (HCB-IDIBAPS)
Montserrat Palacio (HCB-IDIBAPS)

ASSISTANT RESEARCHERS
Monica Zamora (FCRB)

POST-DOCTORAL RESEARCHERS
Núria Baños (HCB)
Elisenda Bonet Carné (FCRB)
Francesca Crovetto (FCRB)
Patricia García Cañadilla (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Paz Ahumada (UB)
Leticia Benitez (HCB)
Maria Laura Boutet (UB)
Analisa Cansemi (UB)
Karen Patricia Castillo (UB)
Ameth Hawkins (UB)
Mari Kinoshita (UB)
Marta Larroya (HCB)
Talita Micheletti (UB)
Lucas Monteiro de Castro (UB)
Elena Monterde (HCB)
Ana Moreno (UB)
Clara Murillo (UB)
Ayako Nakaki (IDIBAPS)
Laura Nogué (HCB)
Júlia Ponce (HCB)
Marta Rial (IDIBAPS)
Claudia Rueda (HCB)
Ximena Francisca Torres (HCB)
Kilian Vellvé (FCRB)

TECHNICIANS
Marta Dacal (FCRB)
Laura González Simarro (CIBER)
Carla Loreiro (FCRB)
Ana Belen Sánchez García (FCRB)

ADMINISTRATIVE STAFF
Maite Aguilera (FCRB)
Maria Mercedes Alonso (FCRB)
Ester Cardet (FCRB)

PROBLEM

The group views the fetus as a patient. Therefore, while it is in the uterus, certain diseases can be diagnosed and treated so that, in the future, any sequelae will be minimal or will completely disappear.

The group's research focuses particularly on the heart and the brain because fetal programming is key during the development of these organs. The group is also developing new intrauterine treatments that can revert or mitigate certain fetal disorders.

APPROACH

The group is made up of more than 80 people from different nationalities, trained in different scientific disciplines. The research areas are fetal cardiac programming, prematurity, fetal neurodevelopment, inflammation in preterm birth, fetal therapy and surgery, placental diseases and the influence of the environment during pregnancy.

To ensure the correct development of these areas, the group has created a structure with the following four platforms: biobank, animal platform, participants' follow-up (post-natal) platform and management.

IMPACT

The results obtained in the research areas show that it is very important to perform

careful, specialized follow-up of the pregnancy. This makes it possible to detect possible deficiencies in the creation of the fetus's vital organs.

RESEARCH LINES

- Environment and pregnancy complications.
- Fetal brain development.
- Fetal programming.
- Fetal therapy & surgery.
- Inflammation in preterm birth.
- Placental disease.
- Prematurity.

PUBLICATIONS

Originals / I.F.: 216.69

1. Palomer X; Román-Azcona MS; Pizarro-Delgado J; Planavila A; Villarroya F; Valenzuela-Alcaraz B; Crispi F; Sepúlveda-Martínez Á; Miguel-Escalada I; Ferrer J; Nistal JF; García R; Davidson MM; Barroso E; Vázquez-Carrera M. **SIRT3-mediated inhibition of FOS through histone H3 deacetylation prevents cardiac fibrosis and inflammation.** *Signal Transduction and Targeted Therapy.* 5(1):14. I.F.: 13.493

2. Benkarim O; Piella G; Rekik I; Hahner N; Eixarch E; Shen D; Li G; González Ballester MA; Sanroma G. **A novel approach to multiple anatomical shape analysis: Application to fetal ventriculomegaly.** *Medical Image Analysis.* 64:101750. I.F.: 11.148

3. Bernardino G, Benkarim O, Sanz-de la Garza M, Prat-Gonzàlez S, Sepulveda-Martinez A, Crispi F, Sitges M, Butakoff C, De Craene M, Bijnens B, González Ballester MA. **Handling confounding variables in statistical shape analysis - application to cardiac remodelling.** *Medical Image Analysis.* 65:101792. I.F.: 11.148

4. Rivas L, Dulay S, Miserere S, Pla L, Marin SB, Parra J, Eixarch E, Gratacós E, Illa M, Mir M, Samitier J. **Micro-needle implantable electrochemical oxygen sensor: ex-vivo and in-vivo studies.** *Biosensors & Bioelectronics.* 153:112028. I.F.: 10.257

5. Torrents-Barrena J, Piella G, Gratacos E, Eixarch E, Ceresa M, Gonalez Ballester MA. **Deep Q-CapsNet Reinforcement Learning Framework for Intrauterine Cavity Segmentation in TTTS Fetal Surgery Planning.** *IEEE Transactions on Medical Imaging.* 39(10):3113-3124. I.F.: 6.685

6. Torrents-Barrena J; Piella G; Valenzuela-Alcaraz B; Gratacos E; Eixarch E; Ceresa M; Ballester MAG. **TTTS-STgan: Stacked Generative Adversarial Networks for TTTS Fetal Surgery Planning based on 3D Ultrasound.** *IEEE Transactions on Medical Imaging.* 39(11):3595-3606. I.F.: 6.685

7. Cobo T, Aldecoa V, Figueras F, Herranz A, Ferrero S, Izquierdo M, Murillo C, Amoedo R, Rueda C, Bosch J, Martínez-Portilla RJ, Gratacós E, Palacio M. **Development and validation of a multivariable prediction model of spontaneous preterm delivery and microbial invasion of the amniotic cavity in women with preterm labor.** *American Journal of Obstetrics and Gynecology.* 223(3):421.e1-421.e14. I.F.: 6.502

8. Youssef L, Miranda J, Paules C, Garcia-Otero L, Vellvé K, Kalapotharakos G, Sepulveda-Martinez A, Crovetto F, Gomez O, Gratacós E, Crispi F. **Fetal cardiac remodeling and dysfunction is associated with both preeclampsia and fetal growth restriction.** *American Journal of Obstetrics and Gynecology.* 222(1):79.e1-79.e9. I.F.: 6.502

9. Domenech-Ximenos B, Garza MS, Prat-González S, Sepúlveda-Martínez Á, Crispi F, Perea RJ, Garcia-Alvarez A, Sitges M. **Exercise-induced cardio-pulmonary remodelling in endurance athletes: Not only the heart adapts**. *European Journal of Preventive Cardiology.* 27(6):651-659. I.F.: 5.864

10. Yaron Y, Pauta M, Badenas C, Soler A, Borobio V, Illanes C, Paz-Y-Miño F, Martinez-Portilla R, Borrell A. **Maternal plasma genome-wide cell-free DNA can detect fetal aneuploidy in early and recurrent pregnancy loss and can be used to direct further workup.** *Human Reproduction.* 35(5):1222-1229. I.F.: 5.733

11. Soveral I, Crispi F, Guirado L, García-Otero L, Torres X, Bennasar M, Sepúlveda-Martínez Á, Nogué L, Gratacós E, Martínez JM, Bijnens B, Friedberg M, Gómez O. **Cardiac filling and ejection time fractions by pulsed Doppler: fetal nomograms and potential clinical application.** *Ultrasound in Obstetrics & Gynecology.* I.F.: 5.571

12. García-Otero L, Soveral I, Sepúlveda-Martínez Á, Rodriguez-López M, Torres X, Guirado L, Nogué L, Valenzuela-Alcaraz B, Martínez JM, Gratacós E, Gómez O, Crispi F. **Reference ranges for fetal cardiac, ventricular and atrial relative size, sphericity, ventricular dominance, wall asymmetry and relative wall thickness from 18 to 41 weeks of gestation.** *Ultrasound in Obstetrics & Gynecology.* I.F.: 5.571

13. Soveral I, Crispi F, Walter C, Guirado L, García-Cañadilla P, Cook A, Bonnin A, Dejea H, Rovira-Zurriaga C, Sánchez de Toledo J, Gratacós E, Martínez JM, Bijnens B, Gómez O. **Early cardiac remodeling in aortic coarctation: insights from fetal and neonatal functional and structural assessment.** *Ultrasound In Obstetrics & Gynecology.* 56(6):837-849. I.F.: 5.571

14. Miranda J, Paz Y Miño F, Borobio V, Badenas C, Rodriguez-Revenga L, Pauta M, Borrell A. **Can cell-free DNA testing be used in pregnancies with increased nuchal translucency?** *Ultrasound in Obstetrics & Gynecology.* 55(5):645-651. I.F.: 5.571

15. Yarygina TA, Bataeva RS, Benitez L, Figueras F. **First-trimester prediction of small-for-gestational age in women at false-positive high and intermediate risk for aneuploidy.** *Ultrasound in Obstetrics & Gynecology.* 56(6):885-892. I.F.: 5.571

16. Rial-Crestelo M; Morales-Roselló J; Hernández-Andrade E; Prefumo F; Oros D; Caffici D; Sotiriadis A; Zohav E; Cruz-Martinez R; Parra-Cordero M; Lubusky M; Kacerovsky M; Figueras F. **Quality assessment of fetal middle cerebral and umbilical artery Doppler images using an objective scale within an international randomized controlled trial.** *Ultrasound in Obstetrics & Gynecology.* 56(2):182-186. I.F.: 5.571

17. Kinoshita M, Thuring A, Morsing E, Maršál K. **Extent of absent end-diastolic flow in umbilical artery and the outcome of pregnancy.** *Ultrasound in Obstetrics & Gynecology.* I.F.: 5.571

18. Townsend R; Duffy JMN; Sileo F; Perry H; Ganzevoort W; Reed K; Baschat AA; Deprest J; Gratacos E; Hecher K; Lewi L; Lopriore E; Oepkes D; Papageorghiou A; Gordijn SJ; Khalil A; Baschat A; Perales-Marin A; Johnson A; Silvana A; Papageorghious A; Khurana A; Khalil A; Trinder B; Combs CA; Bailie C; Huddy C; Bolch C; Coutinho CM; Skupski D; Hake D;

Oepkes D; Schlembach D; Gratacos E; Lindahl E; Carreras E; Mantovani E; Giallongo E; Marler E; Bertucci E. **Core outcome set for studies investigating management of selective fetal growth restriction in twins.** *Ultrasound in Obstetrics & Gynecology.* 55(5):652-660. I.F.: 5.571

19. Domenech-Ximenos B; Sanz-de la Garza M; Prat-González S; Sepúlveda-Martínez A; Crispi F; Duran-Fernandez K; Perea RJ; Bijnens B; Sitges M. **Prevalence and pattern of cardiovascular magnetic resonance late gadolinium enhancement in highly trained endurance athletes.** *Journal of Cardiovascular Magnetic Resonance.* 22(1):62. I.F.: 5.361

20. Fernández VA; Toledano LA; Lozano NP; Tapia EN; Roig MDG; Fornell RDLT; Algar ÓG. **Bioavailability of epigallocatechin gallate administered with different nutritional strategies in healthy volunteers.** *Antioxidants.* 9(5):440. I.F.: 5.014

21. Navarro-Tapia E; Sebastiani G; Sailer S; Toledano LA; Serra-Delgado M; García-Algar Ó; Andreu-Fernández V. **Probiotic supplementation during the perinatal and infant period: Effects on gut dysbiosis and disease.** *Nutrients.* 12(8):2243. I.F.: 4.546

22. Micheletti T, Eixarch E, Berdun S, Febas G, Mazza E, Borrós S, Gratacos E. **Ex-vivo mechanical sealing properties and toxicity of a bioadhesive patch as sealing system for fetal membrane iatrogenic defects.** *Scientific Reports.* 10(1):18608. I.F.: 3.998

23. Vicente-Muñoz S, Cobo T, Puchades-Carrasco L, Sánchez-García AB, Agustí N, Palacio M, Pineda-Lucena A, Gratacós E. **Vaginal metabolome: towards a minimally invasive diagnosis of microbial invasion of the amniotic cavity in women with preterm labor.** *Scientific Reports.* 10(1):5465. I.F.: 3.998

24. Paules C; Youssef L; Miranda J; Crovetto F; Estanyol JM; Fernandez G; Crispi F; Gratacós E. **Maternal proteomic profiling reveals alterations in lipid metabolism in late-onset fetal growth restriction.** *Scientific Reports.* 10(1):21033. I.F.: 3.998

25. Burgos-Artizzu XP; Coronado-Gutiérrez D; Valenzuela-Alcaraz B; Bonet-Carne E; Eixarch E; Crispi F; Gratacós E. **Evaluation of deep convolutional neural networks for automatic classification of common maternal fetal ultrasound planes.** *Scientific Reports.* 10(1):10200. I.F.: 3.998

26. Gomez-Gomez A, Miranda J, Feixas G, Arranz Betegon A, Crispi F, Gratacós E, Pozo OJ. **Determination of the steroid profile in alternative matrices by liquid chromatography tandem mass spectrometry**. *Journal of Steroid Biochemistry and Molecular Biology*. 197:105520. I.F.: 3.813

27. Rodriguez-Revenga L, Madrigal I, Borrell A, Martinez JM, Sabria J, Martin L, Jimenez W, Mira A, Badenas C, Milà M. **Chromosome microarray analysis should be offered to all invasive prenatal diagnostic testing following a normal rapid aneuploidy test result.** *Clinical Genetics.* 98(4):379-383. I.F.: 3.578

28. Torres X, Bennasar M, García-Otero L, Martínez-Portilla RJ, Valenzuela-Alcaraz B, Crispi F, Goncé A, Gratacós E, Figueras F, Martínez JM. **Uncomplicated Monochorionic Twins: Two Normal Hearts Sharing One Placenta.** *Journal of Clinical Medicine.* 9(11):3602. I.F.: 3.303

29. Van der Merwe, Johannes; Couck, Isabel; Russo, Francesca; Burgos-Artizzu, Xavier P; Deprest, Jan; Palacio, Montse; Lewi, Liesbeth. **The Predictive Value of the Cervical Consistency Index to Predict Spontaneous Preterm Birth in Asymptomatic Twin Pregnancies at the Second-Trimester Ultrasound Scan: A Prospective Cohort Study.** *Journal of Clinical Medicine.* 9(6):1784. I.F.: 3.303

30. Sepúlveda M; Montejo C; Llufriu S; Sola-Valls N; Reyes D; Martinez-Lapiscina EH; Zubizarreta I; Pulido-Valdeolivas I; Martinez-Hernandez E; Ariño H; Baños N; Saiz A; Blanco Y. **Rebound of multiple sclerosis activity after fingolimod withdrawal due to planning pregnancy: Analysis of predisposing factors.** *Multiple Sclerosis and Related Disorders.* 38:101483. I.F.: 2.889

31. Balada, Rafael; Tebe, Cristian; Leon, Marisol; Arca, Gemma; Alsina, Miguel; Castells, Alba-Aina; Alcantara, Soledad; Garcia-Alix, Alfredo. **Enquiring beneath the surface: can a gene expression assay shed light into the heterogeneity among newborns with neonatal encephalopathy?** *Pediatric Research.* 88(3):451-458. I.F.: 2.747

32. Núñez C; Arca G; Agut T; Stephan-Otto C; García-Alix A. **Precise neonatal arterial ischemic stroke classification with a three-dimensional map of the arterial territories of the neonatal brain.** *Pediatric Research.* 87(7):1231-1236. I.F.: 2.747

33. Youssef L, Erlandsson L, Åkerström B, Miranda J, Paules C, Crovetto F, Crispi F, Gratacos E, Hansson SR. **Hemopexin and α 1-microglobulin heme scavengers with differential involvement in preeclampsia and fetal growth restriction.** *Plos One.* 15(9):e0239030. I.F.: 2.740

34. Viklund F; Hallingström M; Kacerovsky M; Cobo T; Skogstrand K; Hougaard DM; Sävman K; Carlsson Y; Tsiartas P; Juodakis J; Nilsson S; Jacobsson B. **Protein Concentrations of Thrombospondin-1, MIP-1β, and S100A8 Suggest the Reflection of a Pregnancy Clock in Mid-Trimester Amniotic Fluid.** *Reproductive Sciences.* 27(12):2146-2157. I.F.: 2.616

35. Bernardino G, Sanz de la Garza M, Domenech-Ximenos B, Prat-Gonzàlez S, Perea RJ, Blanco I, Burgos F, Sepulveda-Martinez A, Rodriguez-Lopez M, Crispi F, Butakoff C, González Ballester MA, De Craene M, Sitges M, Bijnens B . **Three-dimensional regional bi-ventricular shape remodeling is associated with exercise capacity in endurance athletes.** *European Journal of Applied Physiology.* 120(6):1227-1235. I.F.: 2.580

36. Perera-Bel E; Ceresa M; Torrents-Barrena J; Masoller N; Valenzuela-Alcaraz B; Gratacós E; Eixarch E; González Ballester MA. **Segmentation of the placenta and its vascular tree in Doppler ultrasound for fetal surgery planning.** *International Journal of Computer Assisted Radiology and Surgery.* 15(11):1869-1879. I.F.: 2.473

37. Guirado L; Crispi F; Soveral I; Valenzuela-Alcaraz B; Rodriguez-López M; García-Otero L; Torres X; Sepúlveda-Martínez Á; Escobar-Diaz M; Martínez J; Friedberg M; Gratacós E; Gómez O. **Nomograms of Fetal Right Ventricular Fractional Area Change by 2D Echocardiography.** *Fetal Diagnosis and Therapy.* 47(5):399-410. I.F.: 2.095

38. García-Otero L, Gómez O, Rodriguez-López M, Torres X, Soveral I, Sepúlveda-Martínez Á, Guirado L, Valenzuela-Alcaraz B, López M, Martínez JM, Gratacós E, Crispi F. **Nomograms of Fetal Cardiac Dimensions at 18-41 Weeks of Gestation.** *Fetal Diagnosis and Therapy.* 47(5):387-398. I.F.: 2.095

39. Masoller N; Gómez Del Rincón O; Herraiz I; Gómez-Montes E; Soveral I; Pérez-Cruz M; Martínez-Biosques C; Granados M; Bennasar M; Escobar-Diaz M; Martínez J; Galindo A. **Prediction of Perinatal Mortality in Ebstein's Anomaly Diagnosed in the Second Trimester of Pregnancy.** *Fetal Diagnosis and Therapy.* 47(8):604-614. I.F.: 2.095

40. Marquès B; Benitez L; Peguero A; Madrigal I; Gómez O; Figueras F; Borrell A. **Cytogenetic Investigation in 136 Consecutive Stillbirths: Does the Tissue Type Affect the Success Rate of Chromosomal Microarray Analysis and Karyotype?** *Fetal Diagnosis and Therapy.* 47(4):315-320. I.F.: 2.095

41. Rial-Crestelo M, Garcia-Otero L, Cancemi A, Giannone M, Escazzocchio E, Biterna A, Ferriols E, Hernandez JL, Lubusky M, Kolarova V, Krofta L, Vojtêch J, Zohav E, Krajden K, Cruz-Martinez R, Cruz-Lemini M, Parra-Cordero M, Socias P, Crispi F, Lopez M, Gratacós E, Figueras F, Ratio 37 study group. **Prescriptive Reference Standards of Third-Trimester Cerebroplacental Ratio and Its Physiological Determinants.** *Fetal Diagnosis and Therapy.* I.F.: 2.095

42. Andreu-Fernández V; Planas S; Navarro-Tapia E; Rosa A; García-Algar O. **Dermatoglyphic fluctuating asymmetry and total a-b ridge count as biomarkers of Foetal Alcohol Syndrome: Analysis in children adopted from Eastern Europe.** *Early Human Development.* 143:104999. I.F.: 1.969

43. González R; García-Otero L; Pons-Duran C; Marbán-Castro E; Goncé A; Llurba E; Del Mar Gil M; Rodríguez-Zambrano MÁ; Chen H; Ramírez M; Bardají A; Menendez C. **Hydroxychloroquine efficacy and safety in preventing SARS-CoV-2 infection and COVID-19 disease severity during pregnancy (COVID-Preg): A structured summary of a study protocol for a randomised placebo controlled trial.** *Trials.* 21(1):607. I.F.: 1.883

44. Musilova I, Andrys C, Holeckova M, Kolarova V, Pliskova L, Drahosova M, Bolehovska R, Pilka R, Huml K, Cobo T, Jacobsson B, Kacerovsky M. **Interleukin-6 measured using the automated electrochemiluminescence immunoassay method for the identification of intra-amniotic inflammation in preterm prelabor rupture of membranes.** *Journal of Maternal-Fetal & Neonatal Medicine.* 33(11):1919-1926. I.F.: 1.737

45. Hallingström M, Cobo T, Kacerovsky M, Skogstrand K, Hougaard DM, Holst RM, Tsiartas P, Bullarbo M, Carlsson Y, Nilsson S, Jacobsson B. **The association between selected mid-trimester amniotic fluid candidate proteins and spontaneous preterm delivery.** *Journal of Maternal-Fetal & Neonatal Medicine.* 33(4):583-592. I.F.: 1.737

46. Goncé A; Hawkins-Villarreal A; Salazar L; Guirado L; Marcos MA; Pascual Mancho J; Prats P; López M; Eixarch E; Salvia MD; Fortuny C; Figueras F. **Maternal high-dose valacyclovir and its correlation with newborn blood viral load and outcome in congenital cytomegalovirus infection.** *Journal of Maternal-Fetal & Neonatal Medicine.* I.F.: 1.737

47. Baños N; Burgos-Artizzu XP; Valenzuela-Alcaraz B; Coronado-Gutiérrez D; Perez-Moreno Á; Ponce J; Gratacós E; Palacio M. **Intra- and interobserver reproducibility of second trimester ultrasound cervical length measurement in a general population.** *Journal of Maternal-Fetal & Neonatal Medicine.* I.F.: 1.737

48. Mendoza R; Morales-Marente E; Palacios MS; Rodríguez-Reinado C; Corrales-Gutiérrez I; García-Algar Ó. **Health advice on alcohol consumption in pregnant women in Seville (Spain).** *Gaceta Sanitaria.* 34(5):449-458. I.F.: 1.564

49. Walter C; Soveral I; Bartrons J; Escobar M; Carretero J; Quirado L; Gómez O; Sánchez-de-Toledo J. **Comprehensive Functional Echocardiographic Assessment of Transposition of the Great Arteries: From Fetus to Newborn.** *Pediatric Cardiology.* 41(4):687-694. I.F.: 1.564

Review / I.F.: 43.662

1. Martinez-Portilla RJ; Poon LC; Benitez-Quintanilla L; Sotiriadis A; Lopez M; Lip-Sosa DL; Figueras F. **Incidence of pre-eclampsia and other perinatal complications among women with congenital heart diseases: systematic review and meta-analysis.** *Ultrasound in Obstetrics & Gynecology.* I.F.: 5.571

2. Martinez-Portilla, R J; Caradeux, J; Meler, E; Lip-Sosa, D L; Sotiriadis, A; Figueras, F. **Third-trimester uterine artery Doppler for prediction of adverse outcome in late small-for-gestational-age fetuses: systematic review and meta-analysis.** *Ultrasound in Obstetrics & Gynecology.* 55(5):575-585. I.F.: 5.571

3. Mesa MD; Loureiro B; Iglesia I; Gonzalez SF; Olivé EL; Algar OG; Solana MJ; Perez MJC; Sainz T; Martinez L; Escuder-Vieco D; Parra-Llorca A; Sánchez-Campillo M; Martinez GR; Roig DG; Gruz MP; Andreu-Fernández V; Clotet J; Sailer S; Iglesias-Platas I; López-Herce J; Aras R; Pallás-Alonso C; de Pipaon MS; Vento M; Gormaz M; Daza EL; Calvo C; Cabañas F. **The evolving microbiome from pregnancy to early infancy: A comprehensive review.** *Nutrients.* 12(1):133. I.F.: 4.546

4. Borras-Novell, Cristina; Herranz Barbero, Ana; Aldecoa-Bilbao, Victoria; Feixas Orellana, Georgina; Balcells Esponera, Carla; Sanchez Ortiz, Erika; Garcia-Algar, Oscar; Iglesias Platas, Isabel. **Infrared analyzers for the measurement of breastmilk macronutrient content in the clinical setting.** *Expert Review of Molecular Diagnostics.* 20(9):867-887. I.F.: 4.096

5. Lamont RF; Richardson LS; Boniface JJ; Cobo T; Exner MM; Christensen IB; Forslund SK; Gaba A; Helmer H; Jørgensen JS; Khan RN; McElrath TF; Petro K; Rasmussen M; Singh R; Tribe RM; Vink JS; Vinter CA; Zhong N; Menon R. **Commentary on a combined approach to the problem of developing biomarkers for the prediction of spontaneous preterm labor that leads to preterm birth.** *Placenta.* 98:13-23. I.F.: 3.177

6. Mazarico E; Molinet-Coll C; Martinez-Portilla R; Figueras F. **Heparin therapy in placental insufficiency: Systematic review and meta-analysis.** *Acta Obstetricia et Gynecologica Scandinavica.* 99(2):167-174. I.F.: 2.770

7. Sebastiani G; Andreu-Fernández V; Herranz Barbero A; Aldecoa-Bilbao V; Miracle X; Meler Barrabes E; Balada Ibañez A; Astals-Vizcaino M; Ferrero-Martínez S; Gómez-Roig MD; García-Algar O. **Eating Disorders During Gestation: Implications for Mother's Health, Fetal Outcomes, and Epigenetic Changes.** *Frontiers in Pediatrics.* 8:587. I.F.: 2.634

8. Almeida L; Andreu-Fernández V; Navarro-Tapia E; Aras-López R; Serra-Delgado M; Martínez L; García-Algar O; Gómez-Roig MD. **Murine Models for the Study of Fetal Alcohol Spectrum Disorders: An Overview.** *Frontiers in Pediatrics.* 8:359. I.F.: 2.634

9. Meler, Eva; Sisterna, Silvina; Borrell, Antoni. **Genetic syndromes associated with isolated fetal growth restriction.** *Prenatal Diagnosis.* 40(4):432-446. I.F.: 2.425

10. Cobo T; Kacerovsky M; Jacobsson B. **Risk factors for spontaneous preterm delivery.** *International Journal of Gynecology & Obstetrics.* 150(1):17-23. I.F.: 2.216

11. Garcia-Canadilla P, Sanchez-Martinez S, Crispi F, Bijnens B. **Machine Learning in Fetal Cardiology: What to Expect.** *Fetal Diagnosis and Therapy.* 47(5):363-372. I.F.: 2.095

12. López M, Gonce A, Meler E, Plaza A, Hernández S, Martinez-Portilla RJ, Cobo T, García F, Gómez Roig MD, Gratacós E, Palacio M, Figueras F, on behalf of the COVID Collaborative Group. **Coronavirus Disease 2019 in Pregnancy: A Clinical Management Protocol and Considerations for Practice.** *Fetal Diagnosis and Therapy.* 47(7):519-528. I.F.: 2.095

13. Crispi F, Sepúlveda-Martínez Á, Crovetto F, Gómez O, Bijnens B, Gratacós E . **Main Patterns of Fetal Cardiac Remodeling.** *Fetal Diagnosis and Therapy.* 47(5):337-344. I.F.: 2.095

14. Rodriguez-Lopez M; Vergara-Sanchez C; Crispi F; Cepeda IL. **Sources of heterogeneity when studying the cardiovascular effects of fetal growth restriction: an overview of the issues.** *Journal of Maternal-Fetal & Neonatal Medicine.* 1-7. I.F.: 1.737

Letters / I.F.: 115.723

1. Martinez-Portilla RJ; Goncé A; Hawkins-Villarreal A; Figueras F. **A Spanish-translated clinical algorithm for management of suspected SARS-CoV-2 infection in pregnant women.** *Lancet Infectious Diseases.* 20(6):655. I.F.: 24.446

2. Crovetto F, Crispi F, Llurba E, Figueras F, Gómez-Roig MD, Gratacós E. **Seroprevalence and presentation of SARS-CoV-2 in pregnancy.** *Lancet.* 396(10250):530-531. I.F.: 60.390

3. Fidalgo B, Bosch J, Cobo T, Ribera L, Casals C, Almela M. **Bacteremia and intramniotic infection due to Burkholderia cenocepacea.** *Clinical Microbiology and Infection.* 26(11):1564-1565. I.F.: 7.117

4. Youssef L, Crispi F. **Maternal and fetal cardiovascular adaptations in preeclampsia and/or fetal growth restriction.** *American Journal of Obstetrics and Gynecology.* 222(3):286-287. I.F.: 6.502

5. Youssef L, Crispi F. **Fetal cardiac structure and function in preeclampsia and/or fetal growth restriction.** *American Journal of Obstetrics and Gynecology.* 222(2):197. I.F.: 6.502

6. Miranda, J; Borrell, A. **Value of increased nuchal translucency in the era of cell-free DNA testing Reply.** *Ultrasound in Obstetrics & Gynecology.* 55(5):698-699. I.F.: 5.571

7. Romosan G; Lindberg C; Banos N; Valentin L. **Resources needed to teach midwife sonographers to measure cervical length with transvaginal ultrasound in the second trimester.** *Acta Obstetricia et Gynecologica Scandinavica.* 99(11):1568-1569. I.F.: 2.770

8. Meler E; Sisterna S; Borrell A. **Genetics of fetal growth restriction. Apparently Isolated can be syndromic.** *Prenatal Diagnosis.* I.F.: 2.425

Clinical Guidelines / I.F.: 5.571

1. Lees CC; Stampalija T; Baschat A; da Silva Costa F; Ferrazzi E; Figueras F; Hecher K; Poon LC; Salomon LJ; Unterscheider J. **ISUOG Practice Guidelines: diagnosis and management of small-for-gestational-age fetus and fetal growth restriction**. *Ultrasound in Obstetrics & Gynecology.* 56(2):298-312. I.F.: 5.571

GRANTS FOR RESEARCH IN PROGRESS

Borrell A. **Secuenciación del exoma completo (SEC) en fetos con anomalías fetales estructurales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01153
Duration: 01/01/2018-31/12/2021

Cobo T. **Desarrollo y validación de una herramienta diagnóstica no-invasiva de infección/inflamación intra-amniótica en flujo vaginal basada en la integración de metabolómica y microbioma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00580
Duration: 01/01/2020-31/12/2022

Crispi F. **Impacto de las técnicas de reproducción asistida en la programación cardiovascular fetal, resultado perinatal y epigenética fetal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00675
Duration: 01/01/2018-31/12/2021

Eixarch E. **Desarrollo de herramientas predictivas para a identificación precoz de las alteraciones del neurodesarrollo de origen prenatal basadas en el estudio del desarrollo cortical fetal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00861
Duration: 01/01/2017-30/06/2021

Eixarch E. **FetalBrainCare: Tratamiento para la mejora del neurodesarrollo en el crecimiento intrauterino restringido.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01872
Duration: 01/01/2020-31/12/2022

Figueras F. **Papel del factor de crecimineto placentario en el manejo de la preeclampsia no severa: estudio aleatorizado. Estudio MAP.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00903
Duration: 01/01/2016-30/11/2020

García-Algar O. **Red de Salud Materno-Infantil y del desarrollo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0022/0002
Duration: 04/01/2017-31/12/2021

García-Algar O. **Alteraciones epigenéticas generadas por exposición prenatal al alcohol en pacientes con SAF (síndrome alcohol fetal). Antioxidante epigalocatequina (EGCG) como herramienta terapéutica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00566
Duration: 17/03/2017-30/06/2021

García-Algar O. **App VisualTEAF: una nova eina diagnòstica del TEAF (Trastorn de l'Espectre Alcohòlic Fetal).**
Sponsored by: Barcelona Mobile Ventures. MWCapital_COLLIDER19_002
Duration: 01/09/2019-30/07/2021

García-Algar O. **Estudio epigenómico, metabolómico y metagenómico de una cohorte de niños con Síndrome Alcohólico Fetal: modelo diagnóstico y nuevas dianas terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01853
Duration: 01/01/2020-31/12/2022

García-Algar O. **Trastorno del Espectro Alcohólico Fetal (TEAF): validación clínica de la App diagnóstica VisualFASD.**
Sponsored by: Fundación Probitas. PROBITAS_ACCSOCIAL19
Duration: 01/01/2019-31/03/2020

Gómez del Rincón O. **Evaluación pronóstica de las cardiopatías congénitas desde la etapa prenatal mediante ecocardiografía avanzada y biomarcadores plasmáticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00263
Duration: 01/01/2016-30/11/2020

Goncé A. **Develop a multi-disciplinary approach for a personalized prenatal diagnostics and care for twin pregnancies.**
Sponsored by: European Commission and Generalitat de Catalunya. CE_ERA_PerMed_19 and SLD001/19/000002
Duration: 05/03/2019-05/03/2022

Gratacós E. **Grup de medicina Meternofetal i Reproductiva mixta Hospital Clínic de Barcelona i Hospital Sant Joan de Déu.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01531
Duration: 01/01/2017-30/09/2021

Gratacós E. **Desenvolupament de noves eines diagnòstiques i terapèutiques personalitzades per prevenir i tractar les malalties fetals i les seves conseqüencies en la salut.**
Sponsored by: Fundació Bancaria "La Caixa". 3199-18 FCRB
Duration: 06/11/2018-31/12/2020

Gratacós E. **Artificial Placenta.**
Sponsored by: La Caixa Foundation. 6049-20 FCRB.
Duration: 31/12/2020-31/12/2024

Gratacós E. **Identifiación de moduladores y dianas terapéuticas en el remodelado y enfermedad cardiovascular del adulto asociada a retraso de crecimiento intrauterino.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00130
Duration: 01/01/2016-30/11/2020

Gratacós E. **Caracterización fenotípica para una nueva clasificación clínica de la restricción de crecimiento fetal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00073
Duration: 01/01/2019-31/12/2021

Gratacós E. **FetalMed-PhD - A joint doctorate in Fetal Medicine.**
Sponsored by: European Commission. FPA 2013-0040
Duration: 01/08/2013-31/10/2021

López-Rojano M. **Seguimiento ecográfico en gestantes con infección por COVID-19. Riesgos asociados a la infección severa y al trimestre del embarazo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_COV20/00310
Duration: 30/04/2020-29/04/2021

Zamora M. **La restricción de crecimiento fetal predispone en vida adulta a una respuesta a estrés cardíaco defectuosa: papel de la cardioquiina FGF21.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00167
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Gratacos E, Crispi F. **Omics approach to characterize different phenotypes of preeclampsia and fetal growth restriction.**
PhD student: Lina Youssef

Zamora M. **Perinatal strategies to prevent the development of bronchopulmonary dysplasia.**
PhD student: André George Gie

Gomez del Rincón O, Crispi F. **Cardiopatías con obstrucción del tracto de salida del ventrículo derecho: estudio del remodelado cardiovascular fetal mediante ecocardiografía.**
PhD student: Laura Guirado Manchon

3.15 Metabolic bone disease

LOCATION
HCB building, floor 4B

KEYWORDS
1. **Osteoporosis**
2. **Paget's disease of bone**
3. **Bone turnover markers**
4. **Hepatic osteodystrophy**

RELATED DISEASES
1. **Osteoporosis**
2. **Paget's disease of bone**
3. **Bone disease associated with chronic cholestasis**
4. **Glucocorticoid-induced osteoporosis**

Original publications

TOTAL	8
IF	27,79
Mean IF	3,47
Q1	38%
D1	0%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Núria Guañabens (HCB)
T. 93 227 54 00 (Ext.: 1735)
nguana@clinic.cat

RESEARCHERS
Xavier Filella (HCB)
Ana Isabel Monegal (HCB)
Pilar Peris (HCB)

PRE-DOCTORAL RESEARCHERS
Helena Florez (HCB)

PROBLEM

Metabolic bone diseases, particularly osteoporosis, have important health implications, since they are often behind many fractures. Despite their relevance, metabolic bone diseases form a poorly studied health issue.

APPROACH

The group has studied the effects of cholestasis on bone tissue, both at the clinical and experimental levels. The group also has a deep experience in the study of osteoporosis in patients with end-stage liver disease and following a liver transplant.

Study of the interactions between the liver and bones has allowed it to identify the risk factors and cellular mechanisms involved, as well as to analyse various treatment options.

Our group has also analyzed the usefulness of the biochemical markers of bone turnover in the evaluation of metabolic bone disorders. With this, we have expanded the knowledge in the biochemical approach not only of osteoporosis, but also of other metabolic bone diseases such as Paget's disease of bone.

IMPACT

The group has shown that patients with cholestatic liver disease have a high prevalence of osteoporosis. It has also been identified the risk factors for developing fractures in this context.

In the experimental field the group has described how substances retained in cholestasis produce a damaging effect on osteoblasts, the bone-forming cells, which explains the deficit in bone formation (the main mechanism of osteoporosis associated with cholestasis). More recently, we have analyzed their effects on osteocytic cell lines and the group is currently studying the effects of the products retained in cholestasis on osteoclasts, the cells responsible for bone resorption.

RESEARCH LINES

- Pathogenesis of osteoporosis and fracture development in primary biliary cholangitis and other chronic cholestatic disorders.

- Osteoporosis in liver transplantation.

- Osteoporosis in premenopausal women and in males. Clinical characteristics and mechanisms involved in the development of the disorder.

- Evaluation of bone remodelling regulators in the pathogenesis of osteoporosis.

- Biomarkers in Paget disease.

PUBLICATIONS

Originals / I.F.: 27.787

1. Cronin O, Subedi D, Forsyth L, Goodman K, Lewis SC, Keerie C, Walker A, Porteous M, Cetnarskyj R, Ranganath LR, Selby PL, Hampson G, Chandra R, Ho S, Tobias JH, Young-Min SA, McKenna MJ, Crowley RK, Fraser WD, Tang J, Gennari L, Nuti R, Brandi ML, Del Pino-Montes J, Devogelaer JP, Durnez A, Isaia GC, Di Stefano M, Rubio JB, Guanabens N, Seibel MJ, Walsh JP, Kotowicz MA, Nicholson GC, Duncan EL, Major G, Horne A, Gilchrist NL, Ralston SH. **Characteristics of Early Paget's Disease in SQSTM1**

Mutation Carriers: Baseline Analysis of the ZiPP Study Cohort. *Journal of Bone and Mineral Research.* 35(7):1246-1252. I.F.: 5.854

2. Florez H, Hernández-Rodríguez J, Muxi A, Carrasco JL, Prieto-González S, Cid MC, Espinosa G, Gómez-Puerta JA, Monegal A, Guañabens N, Peris P. **Trabecular bone score improves fracture risk assessment in glucocorticoid-induced osteoporosis.** *Rheumatology.* 59(7):1574-1580. I.F.: 5.606

3. Ruiz-Gaspà S, Guañabens N, Jurado S, Combalia A, Peris P, Monegal A, Parés A. **Bilirubin and bile acids in osteocytes and bone tissue.** *Liver International.* 40(11):2767-2775. I.F.: 5.175

4. Ruiz-Gaspà S; Guañabens N; González S; Dubreuil M; Combalia A; Peris P; Monegal A; Parés A. **Bile acids and bilirubin effects on osteoblastic gene profile. Implications in the pathogenesis of osteoporosis in liver diseases.** *Gene.* 725:144167. I.F.: 2.984

5. Foj L; Filella X. **Development and internal validation of a novel PHI-nomogram to identify aggressive prostate cancer.** *Clinica Chimica Acta.* 501:174-178. I.F.: 2.615

6. Mozas P, Rivas-Delgado A, Rivero A, Dlouhy I, Nadeu F, Balagué O, González-Farré B, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Pérez-Galán P, Filella X, Magnano L, López-Guillermo A. **High serum levels of IL-2R, IL-6, and TNF-α are associated with higher tumor burden and poorer outcome of follicular lymphoma patients in the rituximab era.** *Leukemia Research.* 94:106371. I.F.: 2.214

7. Ojeda R; Arias-Guillén M; Gómez M; Vera M; Fontseré N; Rodas L; Filella X; Reverter JC; Lozano F; Villamor N; Maduell F. **Study of Biocompatibility of Membranes in Online Hemodiafiltration.** *Blood Purification.* 49(4):400-408. I.F.: 2.116

8. Jiménez Hernández M; Soriano A; Filella X; Calvo M; Coll E; Rebled JM; Poch E; Graterol F; Compte MT; Maduell F; Fontsere N. **Impact of locking solutions on conditioning biofilm formation in tunnelled haemodialysis catheters and inflammatory response activation**. *Journal of Vascular Access.* I.F.: 1.223

Review / I.F.: 14.662

1. Van de Laarschot, Denise M; McKenna, Malachi J; Abrahamsen, Bo; Langdahl, Bente; Cohen-Solal, Martine; Guanabens, Nuria; Eastell, Richard; Ralston, Stuart H; Zillikens, M Carola. **Medical Management of Patients After Atypical Femur Fractures: a Systematic Review and Recommendations From the European Calcified Tissue Society.** *Journal of Clinical Endocrinology & Metabolism.* 105(5):1682-1699. I.F.: 5.399

2. Tsourdi E, Zillikens MC, Meier C, Body JJ, Gonzalez Rodriguez E, Anastasilakis AD, Abrahamsen B, McCloskey E, Hofbauer LC, Guañabens N, Obermayer-Pietsch B, Ralston SH, Eastell R, Pepe J, Palermo A, Langdahl B. **Fracture risk and management of discontinuation of denosumab therapy: a systematic review and position statement by ECTS.** *Journal of Clinical Endocrinology & Metabolism.* I.F.: 5.399

3. Bianchi ML, Bishop NJ, Guañabens N, Hofmann C, Jakob F, Roux C, Zillikens MC, Rare Bone Disease Action Group of the European Calcified Tissue Society. **Hypophosphatasia in adolescents and adults: overview of diagnosis and treatment.** *Osteoporosis International.* 31(8):1445-1460. I.F.: 3.864

Letters / I.F.: 5.854

1. Buchbinder R, Ebeling PR, Akesson K, Bauer DC, Eastell R, Fink HA, Giangregorio L, Guanabens N, Kado D, Kallmes D, Katzman W, Rodriguez A, Wermers R, Wilson HA, Bouxsein ML. **Response to: Some Questions About the Article "The Efficacy and Safety of Vertebral Augmentation: A Second ASBMR Task Force Report"**. *Journal of Bone and Mineral Research.* 35(1):212-213. I.F.: 5.854

Case Reports / I.F.: 18.263

1. Bodro M, Compta Y, Llansó L, Esteller D, Doncel-Moriano A, Mesa A, Rodríguez A, Sarto J, Martínez-Hernandez E, Vlagea A, Egri N, Filella X, Morales-Ruiz M, Yagüe J, Soriano Á, Graus F, García F, "Hospital Clínic Infecto-COVID-19" and "Hospital Clínic Neuro-COVID-19" groups. **Increased CSF levels of IL-1β, IL-6, and ACE in SARS-CoV-2-associated encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(5):e821. I.F.: 7.724

2. Frade-Sosa B; Florez H; Isern-Kebschull J; Halperin I; Guañabens N. **Fusion of sacroiliac joints in acromegaly: a challenging finding.** *Rheumatology.* 59(4):898. I.F.: 5.606

3. Fernández-Galán E; Augé J; Molina R; Filella X. **Very high levels of PSA in patients with cardiogenic shock: Report of four clinical cases.** *Clinical Biochemistry.* 76:42-44. I.F.: 2.573

4. Rodriguez-García SC, Castellanos-Moreira R, Muxí A, Del Amo M, Peris P, Guañabens N. **Imaging Follow-up of SAPHO Syndrome Treated With Zoledronic Acid.** *JCR-Journal of Clinical Rheumatology.* 26(6):E155-E157. I.F.: 2.360

GRANTS FOR RESEARCH IN PROGRESS

Guañabens N. **Efectos de la bilirrubina y ácidos biliares sobre osteoclastos humanos in vitro y sobre el patrón de expresión de MicroRNAs implicados en la osteoclastogénesis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00444
Duration: 01/01/2018-30/06/2022

3.16 Endocrine disorders: crosstalk between molecular, metabolic and therapeutic determinants

LOCATION
CEK building, floor 5

KEYWORDS
1. **Endocrine tumours**
2. **Steroids**

Original publications

TOTAL	5
IF	16,40
Mean IF	3,28
Q1	40%
D1	0%
MA	20%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Felicia Alexandra Hanzu (HCB-IDIBAPS)
T. 93 227 54 00 (Ext.: 9846)
fhanzu@clinic.cat

ASSISTANT RESEARCHERS
Irene Halperin (HCB)

POST-DOCTORAL RESEARCHERS
Gloria Beatriz Aranda (IDIBAPS)
Mireia Mora (HCB)
Mattia Squarcia (HCB)

PRE-DOCTORAL RESEARCHERS
Laura Boswell (HCB)
Guillermo García Eguren (IDIBAPS)
Arturo Vega (IDIBAPS)

TECHNICIANS
Oriol Giro (FCRB)

PROBLEM

The group studies molecular, metabolic and therapeutic aspects of complex endocrine disorders within the context of research on endocrine tumours and on steroids.

APPROACH

The group's research work is organized into two programmes: the steroids programme and the endocrine tumours programme. The former studies the molecular and epigenetic mechanisms that cause severe and persistent damage to the target tissues of steroidal hormones.

The endocrine tumours programme researches genetic and molecular factors, biomarkers and new diagnostic and therapeutic strategies.

The basic goal of the group's research is translation of the knowledge derived from basic research to clinical practice.

IMPACT

As a result of the research carried out to date, the group has provided evidence, in a translational ex vivo-in vitro model, of endothelial activation and inflammation on the action of circulating factors that remain after endogenous tumour hypercortisolism.

In parallel, a new animal model of reversible exogenous Cushing syndrome has shown the persistence of the harmful metabolic effects that result from excess steroids.

In terms of technological innovation, work is being carried out on the differential diagnosis and minimally invasive percutaneous treatment of benign and malignant thyroid nodules.

RESEARCH LINES

- Molecular and epigenetic mechanisms responsible for the persistent deleterious effects in target tissue exposed to steroidal hormones.

- Translational approach in humans and animal models.

PUBLICATIONS

Originals / I.F.: 16.396

1. Rubinstein G, Osswald A, Hoster E, Losa M, Elenkova A, Zacharieva S, Machado MC, Hanzu FA, Zopp S, Ritzel K, Riester A, Braun LT, Kreitschmann-Andermahr I, Storr HL, Bansal P, Barahona MJ, Cosaro E, Dogansen SC, Johnston PC, Santos de Oliveira R, Raftopoulos C, Scaroni C, Valassi E, van der Werff SJA, Schopohl J, Beuschlein F, Reincke M . **Time to diagnosis in Cushing's syndrome: A meta-analysis based on 5367 patients.** *Journal of Clinical Endocrinology & Metabolism.* 105(3):E12-E22. I.F.: 5.399

2. García-Eguren G, Sala-Vila A, Giró O, Vega-Beyhart A, Hanzu FA. **Long-term hypercortisolism induces lipogenesis**

promoting palmitic acid accumulation and inflammation in visceral adipose tissue compared to HFD-induced obesity. *American Journal of Physiology-Endocrinology and Metabolism*. 318(6):E995-E1003. I.F.: 3.469

3. Fernández R; Ramírez K; Gómez-Gil E; Cortés-Cortés J; Mora M; Aranda G; Zayas ED; Esteva I; Almaraz MC; Guillamon A; Pásaro E. **Gender-Affirming Hormone Therapy Modifies the CpG Methylation Pattern of the ESR1 Gene Promoter After Six Months of Treatment in Transmen.** *Journal of Sexual Medicine*. 17(9):1795-1806. I.F.: 3.293

4. Orois, Aida; Badenas, Celia; Reverter, Jordi L; Lopez, Veronica; Potrony, Miriam; Mora, Mireia; Halperin, Irene; Oriola, Josep. **Lack of Mutations in POT1 Gene in Selected Families with Familial Non-Medullary Thyroid Cancer.** *Hormones & Cancer*. 11(2):111-116. I.F.: 2.437

5. Delgado-Oliver E, Vidal-Sicart S, Martínez D, Squarcia M, Mora M, Hanzu FA, Halperin I, Fuster D, Fondevila C, Vidal-Perez Ó. **Applicability of sentinel lymph node biopsy in papillary thyroid cancer.** *Quarterly Journal of Nuclear Medicine and Molecular Imaging*. 64(4):400-405. I.F.: 1.795

Review / I.F.: 6.04

1. Araujo-Castro M; Valderrábano P; Escobar-Morreale HF; Hanzu FA; Casals G. Urine steroid profile as a new promising tool for the evaluation of adrenal tumors. **Literature review.** *Endocrine*. I.F.: 3.235

2. Casals G, Hanzu FA. **Cortisol Measurements in Cushing's Syndrome: Immunoassay or Mass Spectrometry?** *Annals of Laboratory Medicine*. 40(4):285-296. I.F.: 2.803

Case Reports / I.F.: 5.606

1. Frade-Sosa B; Florez H; Isern-Kebschull J; Halperin I; Guañabens N. **Fusion of sacroiliac joints in acromegaly: a challenging finding.** *Rheumatology*. 59(4):898. I.F.: 5.606

Clinical Guidelines / I.F.: 2.36

1. Araujo Castro M; Currás Freixes M; de Miguel Novoa P; Gracia Gimeno P; Álvarez Escolá C; Hanzu F. **SEEN guidelines for the management and prevention of acute adrenal insufficiency.** *Endocrinología Diabetes y Nutrición*. 67(1):53-60. I.F.: 1.180

2. Araujo-Castro M; Iturregui Guevara M; Calatayud Gutiérrez M; Parra Ramírez P; Gracia Gimeno P; Hanzu FA; Lamas Oliveira C. **Practical guide on the initial evaluation, follow-up, and treatment of adrenal incidentalomas Adrenal Diseases Group of the Spanish Society of Endocrinology and Nutrition.** *Endocrinología Diabetes y Nutrición*. 67(6):408-419. I.F.: 1.180

Consortium Publications / I.F.: 6.126

1. Londoño MC, Reig M; RETOINMUNO Multidisciplinary Group. **Multidisciplinary Clinical Approach to Cancer Patients with Immune-Related Adverse Events Induced by Checkpoint Inhibitors.** *Cancers (Basel)*. 12(11):3446. I.F.: 6.126

GRANTS FOR RESEARCH IN PROGRESS

Hanzu F. **Papel del factor de crecimiento de fibroblastos 21 en la disfunción metabólica durante el Síndrome de Cushing en activo y tras curación. Estudio en humanos y modelo animal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00581
Duration: 01/01/2020-31/12/2022

Mora M. **Laser and Ultrasound Co-Analyzer for thyroid nodules.**
Sponsored by: European Commission. CE_H2020-ICT-2015_IA
Duration: 01/02/2016-31/05/2021

DOCTORAL THESES

Hanzu F. **Cambios moleculares y epigenéticos inducidos por el síndrome de Cushing en la plasticidad del tejido adiposo. Modelo animal y estudio en humanos.**
PhD student: Guillermo Garcia Eguren

3.17 Translational research group in new therapeutic and diagnostic strategies in liver diseases

LOCATION
CEK building, floor 3

KEYWORDS
1. **Liver fibrosis**
2. **Cirrhosis**
3. **Nanomedicine**
4. **Liver regeneration**
5. **Sinusoidal endothelial cells**
6. **Lymphatic endothelial cells**
7. **Inflammation**
8. **Macrophages**
9. **Laboratory medicine**

RELATED DISEASES
1. **Cirrhosis**
2. **MAFLD**
3. **Metabolic syndrome**
4. **Hepatocellular carcinoma**
5. **Heart failure**

GROUP INVOLVED IN
AGAUR_SGR17: 00858
CIBEREHD: CB06/04/0020

Original publications

TOTAL	3
IF	21,57
Mean IF	7,19
Q1	33%
D1	33%
MA	33%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Wladimiro Jiménez (HCB)
T. 93 227 54 00 (Ext.: 2199)
wjimenez@clinic.cat

RESEARCHERS
Gregori Casals (HCB)
Guillermo Fernandez Varo (CIBER)
Pedro Melgar Lesmes (UB)
Manuel Morales Ruiz (HCB)

POST-DOCTORAL RESEARCHERS
Jordi Ribera (CIBER)

PRE-DOCTORAL RESEARCHERS
Alazne Moreno (IDIBAPS)
Marina Parra (HCB)
Meritxell Perramón (IDIBAPS)
Irene Portolés (IDIBAPS)

TECHNICIANS
Carmen Cano (HCB)
Cristina Díez Hernández (HCB)
Carmen Belén González Marin (IDIBAPS)

ADMINISTRATIVE STAFF
Esperanza Baltasar (HCB)

PROBLEM

Liver diseases are a serious health problem globaly, especially in Europe. These are very prevalent disorders and they come with high social and economic costs.The main causes are chronic infections for hepatitis B or C, alcoholism and MAFLD, all of which are rising worldwide.

Chronic liver damage involves the development of liver fibrosis and portal hypertension, complications that can lead to more severe disorders such as cirrhosis, hepatocellular carcinoma, hyponatremia and ascites.

In spite of the advances in the understanding of the cellular and molecular mechanisms that govern liver disease, there are still no effective therapies that slow down its progression.

APPROACH

The group is addressing this problem from a multifactorial perspective, especially based on the use of gene therapy or new materials such as nanoparticles. Its main objective is to design complementary therapies with biocompatible nanomaterials that can be applied as a treatment for liver disease in humans.

IMPACT

The basic treatment for a person with acute or chronic liver failure is a liver transplant, a solution som e limitations due to the shortage of organ donors for this type of patients. Therefore, it is necessary to identify new therapeutic tools capable of stopping or reversing the progression of the phenomena that promote fibrosis in liver disease. The group's research is highly translational, because it is opening up new therapeutic pathways for liver disease.

RESEARCH LINES

- Establish new therapies for the normalisation of the intrahepatic vasculature in cirrhotic livers.

- Evaluation of new strategies to modify the activity of specific Akt targets that have a therapeutic potential to stimulate functional liver regeneration in cirrhotic livers.

- Evaluation of the therapeutic potential of cerium oxide nanoparticles in experimental models of hepatocellular carcinoma and liver steatosis.

- Evaluation of the utility of collagen matrix implants containing endothelial cells as a cell therapy to stimulate the regenerative layer of cirrhotic livers.

- Identification of non-invasive biomarkers of liver injury and new signalling pathways of liver fibroproliferative processes.

- Modulation of macrophages to liver damage, regeneration and cancer through functionalised nanoparticles and gene therapy.

PUBLICATIONS

Originals / I.F.: 21.569

1. Fernández-Varo G, Perramón M, Carvajal S, Oró D, Casals E, Boix L, Oller L, Macías-Muñoz L, Marfà S, Casals G, Morales-Ruiz M, Casado P, Cutillas PR, Bruix J, Navasa M, Fuster J, Garcia-Valdecasas JC, Pavel MC, Puntes V, Jiménez W. **Bespoken nanoceria: A new effective treatment in experimental hepatocellular carcinoma.** *Hepatology*. 72(4):1267-1282. I.F.: 14.679

2. Rodriguez-Revenga L, Madrigal I, Borrell A, Martinez JM, Sabria J, Martin L, Jimenez W, Mira A, Badenas C, Milà M. **Chromosome microarray analysis should be offered to all invasive prenatal diagnostic testing following a normal rapid aneuploidy test result.** *Clinical Genetics*. 98(4):379-383. I.F.: 3.578

3. Bosch X; Jáuregui B; Villamor N; Morales-Ruiz M; Ortiz-Pérez J; Borràs R; Penela D; Soto-Iglesias D; Perea R; Doltra A; Prat-González S; Jiménez W; Mira Á; Lasalvia L; Berruezo A. **Monocyte Subsets Are Differently Associated with Infarct Size, Left Ventricular Function, and the Formation of a Potentially Arrhythmogenic Scar in Patients with Acute Myocardial Infarction.** *Journal of Cardiovascular Translational Research*. 13(5):722-730. I.F.: 3.312

Review / I.F.: 21.918

1. Casals E; Zeng M; Parra-Robert M; Fernández-Varo G; Morales-Ruiz M; Jiménez W; Puntes V; Casals G. **Cerium Oxide Nanoparticles: Advances in Biodistribution, Toxicity, and Preclinical Exploration.** *Small*. 16(20):e1907322. I.F.: 11.459

2. Moreno-Lanceta A; Medrano-Bosch M; Melgar-Lesmes P. **Single-walled carbon nanohorns as promising nanotube-derived delivery systems to treat cancer.** *Pharmaceutics*. 12(9):1-21. I.F.: 4.421

3. Araujo-Castro M; Valderrábano P; Escobar-Morreale HF; Hanzu FA; Casals G. **Urine steroid profile as a new promising tool for the evaluation of adrenal tumors. Literature review**. *Endocrine*. I.F.: 3.235

4. Casals G, Hanzu FA. **Cortisol Measurements in Cushing's Syndrome: Immunoassay or Mass Spectrometry?** *Annals of Laboratory Medicine*. 40(4):285-296. I.F.: 2.803

Case Reports / I.F.: 7.724

1. Bodro M, Compta Y, Llansó L, Esteller D, Doncel-Moriano A, Mesa A, Rodríguez A, Sarto J, Martínez-Hernandez E, Vlagea A, Egri N, Filella X, Morales-Ruiz M, Yagüe J, Soriano Á, Graus F, García F, "Hospital Clínic Infecto-COVID-19" and "Hospital Clínic Neuro-COVID-19" groups. **Increased CSF levels of IL-1β, IL-6, and ACE in SARS-CoV-2-associated encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(5):e821. I.F.: 7.724

GRANTS FOR RESEARCH IN PROGRESS

Casals G, Fernández-Varo G. **Determinación del uso terapéutico en enfermedades hepáticas de conjugados antioxidantes avanzados basados en nanopartículas de óxido de cerio.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00774
Duration: 01/01/2020-31/12/2022

Jiménez W. **Desenvolupament i aplicació de nanopartícules de ceri en el tractament del carcinoma hepatocel.lular.**
Sponsored by: Generalitat de Catalunya. 2018_PROD_00187
Duration: 01/05/2019-31/01/2021

Jiménez W, Melgar P. **Utilidad terapéutica y de nuevos tratamientos para las enfermedades hepáticas: RNA de interferencia para PTTG1, nanopartículas de carbono grafito y donadores de óxido nítrico.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-094734-B-C21
Duration: 01/01/2019-31/12/2021

Morales-Ruíz M. **Estimulación de la regeneración funcional de hígados cirróticos mediante la normalización vascular intrahepática y la modulación de dianas de Akt.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2016-75358-R
Duration: 30/12/2016-29/12/2020

Morales-Ruíz M. **Nuevos mecanismos moleculares y nuevas estrategias terapéuticas aplicables a la conservación de la función hepática y a la mejora de la enfermedad hepática crónica.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-105502RB-I00
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Jimenez W, Fernández-Varo G. **Nuevas estrategias terapéuticas contra la enfermedad del hígado graso no alcohólico y la fibrosis hepática experimental: nanopartículas de óxido de cerio y bloqueo de PTTG1 mediante ARNip.**
PhD student: Silvia Carvajal Restoy

3.18 Translational research in hepatic oncology

LOCATION
CEK building, floor 3

KEYWORDS
1. **Hepatocellular carcinoma (HCC)**
2. **Intrahepatic cholangiocarcinoma (iCCA)**
3. **Molecular targeted therapies in liver cancer**
4. **Immunotherapies in liver cancer**
5. **Molecular and immune classification of HCC and iCCA**
6. **Cancer drivers and signalling pathways**
7. **Biomarkers predictors of response and primary resistance to molecular therapies in HCC**

RELATED DISEASES
1. **Liver cancer**
2. **Hepatocellular carcinoma (HCC)**
3. **Intrahepatic cholangiocarcinoma (iCCA)**
4. **Other primary liver and biliary tree tumors**

GROUP INVOLVED IN
AGAUR_SGR17: 01358
HEP-CAR
HUNTER
ICGC

AWARDS
Top 1% most cited researcher globally
Institution: Clarivate Analytics
Awardee/s: Josep M. Llovet

Original publications

TOTAL	11
IF	159,98
Mean IF	14,54
Q1	100%
D1	91%
MA	36%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep M. Llovet (ICREA-IDIBAPS)
T. 93.227 9155
jmllovet@clinic.cat

ASSISTANT RESEARCHERS
Roser Pinyol (FCRB)

POST-DOCTORAL RESEARCHERS
Miguel Torres Martínez (IDIBAPS)
Catherine Willoughby (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Jordi Abril Fornaguera (FCRB)
Carmen Andreu (IDIBAPS)
Ugne Balaseviciute (FCRB)
Roger Esteban (IDIBAPS)
Agavni Mesropian (FCRB)
Marta Piqué Gili (FCRB)
Laura Torrens (FCRB)

TECHNICIANS
Judit Peix (FCRB)

ADMINISTRATIVE STAFF
Ariadna Farré (IDIBAPS)
Sara Bayarri (IDIBAPS)

COLLABORATORS
Florian Castet (FCRB)
Carla Montironi (IDIBAPS)

PROBLEM

Liver cancer is a major public health issue, with an estimated incidence of one million cases from 2025. Surgery and local-regional treatments cure the disease in a small number of cases, but most patients progress to advanced stages, in which molecular therapies obtain survival rates of up to one year.

Molecular and genomic studies have defined the molecular and immunological classification of the tumour and the main therapeutic targets. However, such knowledge has not yet given rise to any clinical application that could prove beneficial to patients.

APPROACH

The group has defined the molecular and immunological classification of hepatocellular carcinoma and has characterised certain therapeutic targets.

The most pressing challenges to improve the treatment of patients with hepatocellular carcinoma and cholangiocarcinoma are: identification of molecular markers – with tissue and liquid biopsy – for early diagnosis; identification of the pro-carcinogenic microenvironment as the therapeutic target in patients with cirrhosis of the liver; examination of genomic alterations to detect the presence of new genotoxic agents; identification of the biomarkers denoting response or primary resistance to new therapies, basically immunological treatments; identification of new therapeutic targets by methylation deregulation; identification of drugs which, when combined, have synergistic effects, and improving knowledge about the mechanisms involved in the origin, progression and dissemination of these cancers.

IMPACT

The long-term objective is to improve survival rates and quality of life in patients with liver cancer, as well as to improve prevention. Secondary objectives include increasing knowledge of the way in which the disease develops, molecular alterations and treatment of these tumours.

The impact of the group's studies may help improve the prevention and treatment of liver cancer by identifying the biomarkers that predict the response to immunological therapies, and those that predict resistance.

This will also make it possible to identify the best therapeutic combinations for use in clinical trials and to identify new treatment paradigms. For this purpose, the group will use cutting-edge technology , such as next generation sequencing and single cell sequencing.

RESEARCH LINES

- Establishment of molecular and immune classification of HCC.

- Translational research in liver cancer.

- Identification of drivers of oncogenesis as targets for therapies in HCC and iCCA.

- Identification of biomarkers predicting response to molecular and immune therapies in HCC.

- Establishment of chemoembolization, sorafenib, regorafenib and ramucirumab as standard of care in HCC patients.

PUBLICATIONS

Originals / I.F.: 159.978

1. Finn RS; Ikeda M; Zhu AX; Sung MW; Baron AD; Kudo M; Okusaka T; Kobayashi M; Kumada H; Kaneko S; Pracht M; Mamontov K; Meyer T; Kubota T; Dutcus CE; Saito K; Siegel AB; Dubrovsky L; Mody K; Llovet JM. **Phase Ib Study of Lenvatinib Plus Pembrolizumab in Patients With Unresectable Hepatocellular Carcinoma.** *Journal of Clinical Oncology.* 38(26):2960-2970. I.F.: 32.956

2. Carrillo-Reixach J, Torrens L, Simon-Coma M, Royo L, Domingo-Sàbat M, Abril-Fornaguera J, Akers N, Sala M, Ragull S, Arnal M, Villalmanzo N, Cairo S, Villanueva A, Kappler R, Garrido M, Guerra L, Sábado C, Guillén G, Mallo M, Piñeyro D, Vázquez-Vitali M, Kuchuk O, Mateos ME, Ramírez G, Santamaría ML, Mozo Y, Soriano A, Grotzer M, Branchereau S, de Andoin NG, López-Ibor B, López-Almaraz R, Salinas JA, Torres B, Hernández F, Uriz JJ, Fabre M, Blanco J, Paris C, Bajčiová V, Laureys G, Masnou H, Clos A, Belendez C, Guettier C, Sumoy L, Planas R, Jordà M, Nonell L, Czauderna P, Morland B, Sia D, Losic B, Buendia MA, Sarrias MR, Llovet JM, Armengol C. **Epigenetic footprint enables molecular risk stratification of hepatoblastoma with clinical implications.** *Journal of Hepatology.* 73(2):328-341. I.F.: 20.582

3. Montal R, Sia D, Montironi C, Leow WQ, Esteban-Fabró R, Pinyol R, Torres-Martin M, Bassaganyas L, Moeini A, Peix J, Cabellos L, Maeda M, Villacorta-Martin C, Tabrizian P, Rodriguez-Carunchio L, Castellano G, Sempoux C, Minguez B, Pawlik TM, Labgaa I, Roberts LR, Sole M, Fiel MI, Thung S, Fuster J, Roayaie S, Villanueva A, Schwartz M, Llovet JM. **Molecular classification and therapeutic targets in extrahepatic cholangiocarcinoma.** *Journal of Hepatology.* 73(2):315-327. I.F.: 20.582

4. Hernandez-Meza G, von Felden J, Gonzalez-Kozlova EE, Garcia-Lezana T, Peix J, Portela A, Craig AJ, Sayols S, Schwartz M, Losic B, Mazzaferro V, Esteller M, Llovet JM, Villanueva A. **DNA methylation profiling of human hepatocarcinogenesis.** *Hepatology.* I.F.: 14.679

5. Bernardo-Seisdedos G, Bilbao J, Fernández-Ramos D, Lopitz-Otsoa F, Gutierrez de Juan V, Bizkarguenaga M, Mateos B, Fondevila MF, Abril-Fornaguera J, Diercks T, Lu SC, Nogueiras R, Mato JM, Millet O. **Metabolic landscape of the mouse liver by quantitative 31 P-NMR analysis of the phosphorome.** *Hepatology.* I.F.: 14.679

6. Nault, Jean-Charles; Martin, Yoann; Caruso, Stefano; Hirsch, Theo Z; Bayard, Quentin; Calderaro, Julien; Charpy, Cecile; Copie-Bergman, Christiane; Ziol, Marianne; Bioulac-Sage, Paulette; Couchy, Gabrielle; Blanc, Jean-Frederic; Nahon, Pierre; Amaddeo, Giuliana; Ganne-Carrie, Nathalie; Morcrette, Guillaume; Chiche, Laurence; Duvoux, Christophe; Faivre, Sandrine; Laurent, Alexis; Imbeaud, Sandrine; Rebouissou, Sandra; Llovet, Josep M; Seror, Olivier; Letouze, Eric; Zucman-Rossi, Jessica. **Clinical Impact of Genomic Diversity From Early to Advanced Hepatocellular Carcinoma.** *Hepatology.* 71(1):164-182. I.F.: 14.679

7. Losic B; Craig AJ; Villacorta-Martin C; Martins-Filho SN; Akers N; Chen X; Ahsen ME; von Felden J; Labgaa I; D'Avola D; Allette K; Lira SA; Furtado GC; Garcia-Lezana T; Restrepo P; Stueck A; Ward SC; Fiel MI; Hiotis SP; Gunasekaran G; Sia D; Schadt EE; Sebra R; Schwartz M; Llovet JM; Thung S; Stolovitzky G; Villanueva A. **Intratumoral heterogeneity and clonal evolution in liver cancer.** *Nature Communications.* 11(1):291. I.F.: 12.121

8. Bassaganyas L, Pinyol R, Esteban-Fabró R, Torrens L, Torrecilla S, Willoughby CE, Franch-Expósito S, Vila-Casadesús M, Salaverria I, Montal R, Mazzaferro V, Camps J, Sia D, Llovet JM. **Copy number alteration burden differentially impacts immune profiles and molecular features of hepatocellular carcinoma.** *Clinical Cancer Research.* 26(23):6350-6361. I.F.: 10.107

9. Puigvehi, Marc; Hashim, Dana; Haber, Philipp K; Dinani, Amreen; Schiano, Thomas D; Asgharpour, Amon; Kushner, Tatyana; Kakked, Gaurav; Tabrizian, Parissa; Schwartz, Myron; Gurakar, Ahmet; Dieterich, Douglas; Boffetta, Paolo; Friedman, Scott L; Llovet, Josep M; Saberi, Behnam. **Liver transplant for hepatocellular carcinoma in the United States: Evolving trends over the last three decades.** *American Journal of Transplantation.* 20(1):220-230. I.F.: 7.338

10. Franch-Expósito S, Bassaganyas L, Vila-Casadesús M, Hernández-Illán E, Esteban-Fabró R, Díaz-Gay M, Lozano JJ, Castells A, Llovet JM, Castellví-Bel S, Camps J. **CNApp, a tool for the quantification of copy number alterations and integrative analysis revealing clinical implications.** *Elife.* 9:e50267. I.F.: 7.080

11. Kudo M; Galle PR; Llovet JM; Finn RS; Vogel A; Motomura K; Assenat E; Merle P; Brandi G; Daniele B; Okusaka T; Tomášek J; Borg C; Dadduzio V; Morimoto M; Pracht M; Jen MH; Drove Ubreva N; Widau RC; Shinozaki K; Yoshikawa R; Zhu AX. **Ramucirumab in elderly patients with hepatocellular carcinoma and elevated alpha-fetoprotein after sorafenib in REACH and REACH-2**. *Liver International.* 40(8):2008-2020. I.F.: 5.175

12. Kudo M, Galle PR, Brandi G, Kang YK, Yen CJ, Finn RS, Llovet JM, Assenat E, Merle P, Chan SL, Palmer DH, Ikeda M, Yamashita T, Vogel A, Huang YH, Abada PB, Yoshikawa R, Shinozaki K, Wang C, Widau RC, Zhu AX. **Effect of ramucirumab on ALBI grade in patients with advanced HCC: Results from REACH and REACH-2.** *JHEP Reports.* 13(2):100215

Review / I.F.: 41.164

1. Llovet JM; Lencioni R. **mRECIST for HCC: Performance and novel refinements.** *Journal of Hepatology.* 72(2):288-306. I.F.: 20.582

2. Nault JC; Cheng AL; Sangro B; Llovet JM. **Milestones in the pathogenesis and management of primary liver cancer.** *Journal of Hepatology.* 72(2):209-214. I.F.: 20.582

GRANTS FOR RESEARCH IN PROGRESS

Llovet JM. **Laboratori de Recerca Translacional en Oncología Hepàtica.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01358
Duration: 01/01/2017-30/09/2021

Llovet JM. **Mecanismos de resistencia adquirida a sorafenib en el carcinoma hepatocelular.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2016-76390-R
Duration: 30/12/2016-10/01/2020

Llovet JM. **Caracterización molecular del carcinoma hepatocelular relacionado con obesidad/diabetes/EHNA.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-105378RB-I00
Duration: 01/06/2020-31/05/2023

Llovet JM. **HUNTER: Hepatocellular Carcinoma Expediter Network.**
Sponsored by: Cancer Research UK (CRUK) and Fundación científica Asociación Española Contra el Cáncer (AECC). Accelerator_Award17 (C9380/A26813)
Duration: 01/11/2018-30/11/2023

DOCTORAL THESES

Llovet JM. **Characterization of early molecular events in the carcinogenesis of hepatocellular carcinoma.**
PhD student: Sara Torrecilla Recio

Llovet JM. **Molecular classification and biomarkers in hepatobiliary cancer.**
PhD student: Robert Montal Roura

3.19 Gynecological endocrinology and human reproduction

LOCATION
HCB building

KEYWORDS
1. **Human papillomavirus**
2. **Endometrial cancer**
3. **Assisted reproductive technologies**
4. **Recurrent miscarriage**
5. **Gynecological laparoscopy**
6. **Endometriosis**

Original publications

TOTAL	17
IF	59,88
Mean IF	3,52
Q1	82%
D1	29%
MA	53%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
María Ángeles Martínez Zamora (HCB)
T. 93 227 54 36
mazamora@clinic.cat

RESEARCHERS
Immaculada Alonso (HCB)
Francesc Carmona (HCB)
Camil Castelo Branco (HCB)
Marta del Pino (HCB)
Berta Díaz Feijoo (HCB)
Francisco J Fabregues (HCB)
Dolors Manau (HCB)
Aureli Torné (HCB)

POST-DOCTORAL RESEARCHERS
Gemma Casals (HCB)
Meritxell Gracia (HCB)
Meritxell Munmany (HCB)
Cristina Ros (HCB)

PRE-DOCTORAL RESEARCHERS
Mariona Rius (HCB)

STRATEGIC OBJECTIVES

The global aim of this research group for the coming years is to advance in the knowledge of different aspects relating to the physiopathology of human reproduction: from endocrinological considerations to the most important benign and malignant pathological processes of the female reproductive system, as well as the investigation and treatment of human reproduction failure.

MAIN LINES OF RESEARCH

1. **Reproductive failure markers:** To find new markers of hemostasis alterations in early and advanced pregnancy in patients with or without antiphospholipid syndrome and in endometriosis patients. To assess the usefulness of immunohistochemical and proteomic parameters in the human endometrium as markers of endometrial receptiveness.

2. **Ovarian dysfunction and stimulation/hyperstimulation:** Investigation of the possibilities of ultrasound, hormonal, endocrinemetabolic and genetic markers in relation to the prediction of ovarian response. To assess the role of the ovarian follicular cells in the pathogenesis of ovarian hyperstimulation syndrome in order to improve the results of assisted reproduction techniques.

3. **Optimization of the surgical management of diseases of the reproductive apparatus:** To analyze the role of the surgical variables allowing improvement of the results and reduction of the morbidity in the surgical treatment of benign and malignant gynaecological disorders. To define the prognostic value of human papillomavirus detection and viral typing as progression markers of precancerous lesions of the cervix, vagina and vulva.

PUBLICATIONS

Originals / I.F.: 59.882

1. Cibula D, Kocian R, Plaikner A, Jarkovsky J, Klat J, Zapardiel I, Pilka R, Torne A, Sehnal B, Ostojich M, Petiz A, Sanchez OA, Presl J, Buda A, Raspagliesi F, Kascak P, van Lonkhuijzen L, Barahona M, Minar L, Blecharz P, Pakiz M, Wydra D, Snyman LC, Zalewski K, Zorrero C, Havelka P, Redecha M, Vinnytska A, Vergote I, Tingulstad S, Michal M, Kipp B, Slama J, Marnitz S, Bajsova S, Hernandez A, Fischerova D, Nemejcova K, Kohler C . **Sentinel lymph node mapping and intraoperative assessment in a prospective, international, multicentre, observational trial of patients with cervical cancer: The SENTIX trial.** *European Journal of Cancer.* 137:69-80. I.F.: 7.275

2. Nicolás I; Saco A; Barnadas E; Marimon L; Rakislova N; Fusté P; Rovirosa A; Gaba L; Buñesch L; Gil-Ibañez B; Pahisa J; Díaz-Feijoo

B; Torne A; Ordi J; del Pino M. **Prognostic implications of genotyping and p16 immunostaining in HPV-positive tumors of the uterine cervix.** *Modern Pathology.* 33(1):128-137. I.F.: 5.988

3. Vink, Frederique J.; Meijer, Chris J. L. M.; Clifford, Gary M.; Poljak, Mario; Ostrbenk, Anja; Petry, Karl Ulrich; Rothe, Beate; Bonde, Jesper; Pedersen, Helle; de Sanjose, Silvia; Torres, Montserrat; del Pino, Marta; Quint, Wim G., V; Cuschieri, Kate; Boada, Elia Alcaniz; van Trommel, Nienke E.; Lissenberg-Witte, Birgit, I; Floore, Arno N.; Hesselink, Albertus T.; Steenbergen, Renske D. M.; Bleeker, Maaike C. G.; Heideman, Danielle A. M. **FAM19A4/-miR124-2 methylation in invasive cervical cancer: A retrospective cross-sectional worldwide study**. *International Journal of Cancer.* 147(4):1215-1221. I.F.: 5.145

4. Rakislova N, Alemany L, Clavero O, Del Pino M, Saco A, Marimon L, Quirós B, Lloveras B, Ribera-Cortada I, Alejo M, Pawlita M, Quint W, de Sanjose S, Ordi J, VVAP Study Group. **HPV-independent Precursors Mimicking High-grade Squamous Intraepithelial Lesions (HSIL) of the Vulva.** *American Journal of Surgical Pathology.* 44(11):1506-1514. I.F.: 4.958

5. Díaz-Feijoo B, Franco S, Torné A, Benito V, Hernández A, Lago V, Rovira R, Acosta Ú, Agustí N, Gil-Moreno A, SEGO Spain-GOG Group. **Implications of extraperitoneal paraaortic lymphadenectomy to the left renal vein in locally advanced cervical cancer.** *Gynecologic Oncology.* 158(2):287-293. I.F.: 4.623

6. Rakislova N; Alemany L; Clavero O; Saco A; Torné A; Del Pino M; Munmany M; Rodrigo--calvo MT; Guerrero J; Marimon L; Vega N; Quirós B; Lloveras B; Ribera-cortada I; Alejo M; Pawlita M; Quint W; de Sanjose S; Ordi J. **P53 immunohistochemical patterns in HPV- independent squamous cell carcinomas of the vulva and the associated skin lesions: A study of 779 cases.** *International Journal of Molecular Sciences.* 21(21):8091. I.F.: 4.556

7. Del Pino M, Martí C, Torras I, Henere C, Munmany M, Marimon L, Saco A, Torné A, Ordi J. **HPV Vaccination as Adjuvant to Conization in Women with Cervical Intraepithelial Neoplasia: A Study under Real-Life Conditions.** *Vaccines.* 8(2):245. I.F.: 4.086

8. Díaz-Feijoo B, Torné A, Tejerizo Á, Benito V, Hernández A, Ruiz R, Domingo S, Luna-Guibourg R, Llueca A, Coronado P, Gilabert-Estelles J, Bebia V, Gil-Ibáñez B, Gil-Moreno A, SEGO Spain-GOG Group. **Prognostic Value and Therapeutic Implication of Laparoscopic Extraperitoneal Paraaortic Staging in Locally Advanced Cervical Cancer: A Spanish Multicenter Study.** *Annals of Surgical Oncology.* 27(8):2829-2839. I.F.: 4.061

9. Leeman A; Jenkins D; del Pino M; Ordi J; Torné A; Doorbar J; Meijer CJLM; van Kemenade FJ; Quint WGV. **Expression of p16 and HPV E4 on biopsy samples and methylation of FAM19A4 and miR124-2 on cervical cytology samples in the classification of cervical squamous intraepithelial lesions.** *Cancer Medicine.* 9(7):2454-2461. I.F.: 3.491

10. Ferreri J; Fàbregues F; Calafell JM; Solernou R; Borrás A; Saco A; Manau D; Carmona F. **Drug-free in-vitro activation of follicles and fresh tissue autotransplantation as a therapeutic option in patients with primary ovarian insufficiency.** *Reproductive Biomedicine Online.* 40(2):254-260. I.F.: 3.218

11. Castelo-Branco C; Cancelo Hidalgo MJ; Palacios S; Ciria-Recasens M; Fernández-Pareja A; Carbonell-Abella C; Manasanch J; Haya-Palazuelos J. **Efficacy and safety of ossein-hydroxyapatite complex versus calcium carbonate to prevent bone loss.** *Climacteric.* 23(3):252-258. I.F.: 2.566

12. Gil-Ibañez B, Glickman A, Del Pino M, Boada D, Fuste P, Diaz-Feijoo B, Pahisa J, Torne A. **Vaginal fertility-sparing surgery and laparoscopic sentinel lymph node detection in early cervical cancer.** *European Journal of Obstetrics & Gynecology and Reproductive Biology.* 251:23-27. I.F.: 1.868

13. Angeles MA, Migliorelli F, León Ramírez LF, Ros C, Perissinotti A, Tapias A, Casanueva-Eliceiry S, Pahisa J, Torné A, Vidal-Sicart S, Del Pino M, Paredes P. **Predictive factors of preoperative sentinel lymph node detection in intermediate and high-risk endometrial cancer.** *Quarterly Journal Of Nuclear Medicine And Molecular Imaging.* I.F.: 1.795

14. Ros C; de Guirior C; Rius M; Escura S; Martínez-Zamora MÁ; Gracia M; Peri L; Franco A; Carmona F. **Accuracy of Transvaginal Ultrasound Compared to Cystoscopy in the Diagnosis of Bladder Endometriosis Nodules.** *J Ultrasound Med.* I.F.: 1.759

15. Nicolás I, Gilabert-Estellés J, Gilabert-Aguilar J, Fusté P, Aghababyan K, Pahisa J, Gil-Ibañez B, Díaz-Feijoo B, Carmona F, Calpe FJ, Saco A, Ordi J, Torne A. **Number of paraaortic lymph node dissections as a prognostic factor in locally advanced cervical cancer.** *Medicina Clinica.* 155(5):197-201. I.F.: 1.635

16. Petrovich Petrenko; Aleksei Castelo Branco; Camil Marshalov; Dimitry Vasilevich Salov; Igor Arkadevich Kuligin; Alexander Valerievich Shifman; Efim Munevich Chauke; Shane Shitsundzuxo. **Alternative strategies for the management of ovarian hyperstimulation syndrome, the role of intra-abdominal hypertension control.** *Gynecological Endocrinology.* 36(3):197-203. I.F.: 1.571

17. Rius, Mariona; Gracia, Meritxell; Ros, Cristina; Martinez-Zamora, Maria-Angeles; deGuirior, Cristian; Quintas, Lara; Carmona, Francisco. **Impact of endometrioma surgery on ovarian reserve: a prospective, randomized, pilot study comparing stripping with CO(2)laser vaporization in patients with bilateral endometriomas.** *Journal of International Medical Research.* 48(6):300060520927627. I.F.: 1.287

Review / I.F.: 14.255

1. Chapron C, Vannuccini S, Santulli P, Abrão MS, Carmona F, Fraser IS, Gordts S, Guo SW, Just PA, Noël JC, Pistofidis G, Van den Bosch T, Petraglia F. **Diagnosing adenomyosis: an integrated clinical and imaging approach.** *Human Reproduction Update.* 26(3):392-411. I.F.: 12.684

2. Castelo-Branco, Camil; Naumova, Iuliia. **Quality of life and sexual function in women with polycystic ovary syndrome: a comprehensive review.** *Gynecological Endocrinology.* 36(2):96-103. I.F.: 1.571

Letters / I.F.: 6.522

1. Bebia V; Monreal-Clua S; Pérez-Benavente A; Franco-Camps S; Díaz-Feijoo B; Gil-Moreno A. **Potential strategies for prevention of tumor spillage in minimally invasive radical hysterectomy.** *Journal of Gynecologic Oncology.* 31(5):e73. I.F.: 3.304

2. Fabregues F, Peñarrubia J. **Assisted reproduction and thromboembolic risk in the COVID-19 pandemic.** *Reproductive Biomedicine Online.* 41(3):361-364. I.F.: 3.218

Editorial / I.F.: 3.107

1. Vergote I; Magrina JF; Zanagnolo V; Magtibay PM; Butler K; Gil-Moreno A; Feijoo BD; Kimmig R; Canis M; Bourdel N; Ind T; Estape R; Persson J; Lim P; Coronado P; Ponce J; Lambaudie E; Van Gorp T; Maggioni A; Narducci F; Van Niewwenhuysen E; Van Trappen P. **The LACC Trial and Minimally Invasive Surgery in Cervical Cancer.** *Journal of Minimally Invasive Gynecology.* 27(2):462-463. I.F.: 3.107

Case Reports / I.F.: 3.107

1. Quintas L; Vidal-Sicart S; Salvador R; Castelo-Branco C; Saco A; Carmona F. **Use of Radioactive Seed Localization to Guide Removal of a Nonpalpable Endometriotic Lesion: A Case Report**. *Journal of Minimally Invasive Gynecology.* 27(2):551-554. I.F.: 3.107

Consortium Publications / I.F.: 5.676

1. COVIDSurg Collaborative. **Delaying surgery for patients with a previous SARS-CoV-2 infection.** *British Journal of Surgery.* 107(12):e601-e602. I.F.: 5.676

GRANTS FOR RESEARCH IN PROGRESS

Del Pino M, Torné A. **Valor de la detección del ARNm de los biomarcadores CDKN2A, MKi67, TOP2A en la prevención secundaria del cáncer de cuello de útero.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00772
Duration: 01/01/2018-30/06/2022

DOCTORAL THESES

Torne AE, del Pino M. **Implicación clínica de la determinación y genotipado del virus del papiloma humano y la expresión inmunohistoquímica de P16INk4A en el cáncer de cuello de útero.**
PhD student: Inmaculada Nicolas Perea

3.20 Hepatocellular signaling and cancer

LOCATION
IIBB-CSIC lab#631

KEYWORDS
1. **Liver microenvironment**
2. **Chemotherapy**
3. **Mitochondria**
4. **Antioxidants**
5. **Cell death**
6. **Autophagy**
7. **Inflammasome**

RELATED DISEASES
1. **Hepatocellular carcinoma**
2. **NAFLD**
3. **Liver fibrosis**
4. **Liver metastasis**

GROUP INVOLVED IN
AGAUR_SGR17: 00177
CIBEREHD

Original publications

TOTAL	3
IF	55,05
Mean IF	18,35
Q1	100%
D1	33%
MA	67%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Albert Morales (IIBB-CSIC)
T. 93 255 83 14
amorales@clinic.cat

RESEARCHERS
Montserrat Marí (IIBB-CSIC)

POST-DOCTORAL RESEARCHERS
Estefanía de Gregorio (IDIBAPS)
Anna Tutusaus (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Blanca Cucarull (IIBB-CSIC)

PROBLEM

The introduction of molecular therapy is a great step forward in medicine that is not properly applied in the treatment of liver cancers, due to its complexity.

The poor efficiency of chemotherapy and development of resistance to treatment often lead to therapeutic failure.

Changes in the hepatic microenvironment during chronic liver disease promote the growth of primary liver tumours and the implantation of metastasis from other organs. For this reason, it is necessary to test pharmacological therapies that combat resistance to treatment and attack metastasis in order to subsequently introduce them into clinical practice.

Moreover, we are also interested in understanding the immune component, particularly the role of NKT cells, responsible for the gender variations that prevail in common liver diseases such as NAFLD, autoimmune hepatitis, and liver cancer.

APPROACH

Chemotherapy promotes the development of cell alterations that give rise to resistance to treatment. Once identified, these can be treated with specific drugs.

In cell models and animals, the group identifies specific targets that condition the efficacy of treatment and make it possible to select the disease that best responds to chemotherapy. There are therapies that combat the tumour microenvironment or immunotherapies that increase the efficacy of current chemotherapy on the liver tumour.

Experimental animal models of chronic liver disease in male and female NKT-deficient mouse are used to characterize the immune response in these settings.

IMPACT

The group's objectives are to identify markers that can anticipate the efficacy of the different treatments available for patients with liver tumours, and develop new therapies targeted at tumour microenvironment proteins and immunotherapy as an alternative to, or in combination with, current chemotherapy.

In addition, by uncovering potential gender differences in prevalent chronic liver disease we aim to offer novel therapeutic approaches and improve the current ones.

RESEARCH LINES

- Identification of specific signatures in blood to categorize HCC patients for each specific therapy.

- Microenvironment-directed therapies to block the development of HCC and liver metastasis.

- Molecular therapies to improve HCC management, and help to overcome sorafenib resistance.

- Role of NKT cells in chronic liver diseases, by using experimental models in CD1d-KO mice with a gender approach.

PUBLICATIONS

Originals / I.F.: 55.048

1. Bosch M, Sánchez-Álvarez M, Fajardo A, Kapetanovic R, Steiner B, Dutra F, Moreira L, López JA, Campo R, Marí M, Morales-Paytuví F, Tort O, Gubern A, Templin RM, Curson JEB, Martel N, Català C, Lozano F, Tebar F, Enrich C, Vázquez J, Del Pozo MA, Sweet MJ, Bozza PT, Gross SP, Parton RG, Pol A. **Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense.** *Science*. 370(6514):eaay8085. I.F.: 41.846

2. Tutusaus A; de Gregorio E; Cucarull B; Cristóbal H; Aresté C; Graupera I; Coll M; Colell A; Gausdal G; Lorens JB; García de Frutos P; Morales A; Marí M. **A Functional Role of GAS6/TAM in Nonalcoholic Steatohepatitis Progression Implicates AXL as Therapeutic Target.** *Cmgh Cellular and Molecular Gastroenterology and Hepatology*. 9(3):349-368. I.F.: 7.076

3. Cucarull B, Tutusaus A, Subías M, Stefanovic M, Hernáez-Alsina T, Boix L, Reig M, García de Frutos P, Marí M, Colell A, Bruix J, Morales A. **Regorafenib Alteration of the BCL-xL/MCL-1 Ratio Provides a Therapeutic Opportunity for BH3-Mimetics in Hepatocellular Carcinoma Models.** *Cancers*. 12(2):332. I.F.: 6.126

Review / I.F.: 13.936

1. Marí M; de Gregorio E; de Dios C; Roca-Agujetas V; Cucarull B; Tutusaus A; Morales A; Colell A. **Mitochondrial glutathione: Recent insights and role in disease.** *Antioxidants*. 9(10):909. I.F.: 5.014

2. De Gregorio E; Colell A; Morales A; Marí M. **Relevance of SIRT1-NF-κB Axis as Therapeutic Target to Ameliorate Inflammation in Liver Disease.** *International Journal of Molecular Sciences*. 21(11):3858. I.F.: 4.556

3. Tutusaus A, Marí M, Ortiz-Pérez JT, Nicolaes GAF, Morales A, García de Frutos P . **Role of Vitamin K-Dependent Factors Protein S and GAS6 and TAM Receptors in SARS-CoV-2 Infection and COVID-19-Associated Immunothrombosis.** *Cells*. 9(10):2186. I.F.: 4.366

Editorial / I.F.: 7.076

1. Marí M. **IGFBP-3: So Much More Than an IGF1/2 Binding Protein.** *Cmgh Cellular and Molecular Gastroenterology and Hepatology*. 10(3):643-644. I.F.: 7.076

GRANTS FOR RESEARCH IN PROGRESS

Marí M. **Gender-specific role of NKT cells and Senescence marker protein-30 in chronic liver diseases.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01410
Duration: 01/01/2020-31/12/2022

Morales A. **Terapias moleculares dirigidas al microambiente en fibrosis y cáncer.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-095672-B-I00
Duration: 01/01/2019-31/12/2021

3.21 Pathogenesis and prevention of diabetes

LOCATION
CEK building, floor 5

KEYWORDS
1. **Islet amyloid polypeptide (IAPP)/amylin**
2. **Beta-cell dysfunction**
3. **MicroRNAs**
4. **Exosomes**
5. **Endothelial dysfunction**
6. **Exercise and nutrition**

RELATED DISEASES
1. **Diabetes**
2. **Obesity**

GROUP INVOLVED IN
AGAUR_SGR17: 01390
CIBERDEM

Original publications

TOTAL	8
IF	36,88
Mean IF	4,61
Q1	63%
D1	13%
MA	63%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Anna Novials (IDIBAPS)
T. 93 227 54 00 (Ext.: 4153)
anovials@clinic.cat

RESEARCHERS
Marcelina Párrizas (CIBER)
Joan Marc Servitja (IDIBAPS)

ASSISTANT RESEARCHERS
Gema Alcarraz Vizán (IDIBAPS)
Vicenç Ribas (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Laura Brugnara (CIBER)
Valeria de Nigris (IDIBAPS)
Samantha Morón (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Carlos Castaño (CIBER)
Daniela J. Díaz Catalán (UB)
Serafín Murillo (CIBER)

COLLABORATORS
Anabel García Díez (HCB)

PROBLEM

Diabetes is a disease characterised by chronic hyperglycaemia (high levels of glucose in the blood), due to a defect in the secretion and/or the action of insulin.

Today it is a serious global health problem due to its prevalence (more than 425 million people are affected), its economic cost and the number of deaths it causes due to the complications that arise. Similarly, there is an increase in the number of young people suffering from it.

Therefore, it is necessary to know the mechanisms that trigger it and to establish new strategies for prevention and treatment.

APPROACH

Combining clinical and basic research, the group conducts studies in animal models and in humans to better understand diabetes and to create innovative methods of treatment and prevention.

Its lines of research focus on preventing and controlling diabetes with lifestyle interventions; the search for markers to predict the development of diabetes and the complications that arise from it; the study of endothelial dysfunction related to diabetes and vascular complications and the molecular mechanisms of deterioration of b-pancreatic cells during the disease's progression; as well as the search for therapeutic targets.

IMPACT

The group has identified molecules, called microRNAs, that appear altered in the blood of prediabetic patients. In this context, the researchers have reported that a type of vesicles known as exosomes transporting microRNAs mediate the cross-talk between organs in prediabetic settings.

The group has also identified microRNAs expressed under stress conditions that induce pancreatic beta-cell dysfunction. Current research on microRNAs and exosomes is being performed in order to advance in treatments that prevent and revert diabetes.

Other studies of the group have demonstrated that anti-inflammatory molecules and inhibitors of endoplasmic-reticulum stress protect pancreatic beta-cells in mouse models of type 2 diabetes, opening the door to their use for the treatment of diabetes.

The group has also tracked the eating and physical exercise patterns of patients with type 1 diabetes to help them improve control over the disease and, therefore, their quality of life.

RESEARCH LINES

- Circulating microRNAs as potential biomarkers and therapeutic targets in type 2 diabetes.

- Exosomes as mediators of organ cross-talk.

- Impact of lifestyle on diabetes.

- Bace2, a new therapeutic target for the treatment of type 2 diabetes and obesity.

- ER stress inhibitors and anti-inflammatory molecules as therapeutic agents against type 2 diabetes.

- Development of bioengineered organs to study real time metabolism.

PUBLICATIONS

Originals / I.F.: 36.878

1. Castaño C, Mirasierra M, Vallejo M, Novials A, Párrizas M. **Delivery of muscle-derived exosomal miRNAs induced by HIIT improves insulin sensitivity through down-regulation of hepatic FoxO1 in mice.** *Proceedings of the National Academy of Sciences of the United States of America.* 117(48):30335-30343. I.F.: 9.412

2. Rodríguez-Comas J, Moreno-Vedia J, Obach M, Castaño C, de Pablo S, Alcarraz-Vizán G, Díaz-Catalán D, Mestre A, Horrillo R, Costa M, Novials A, Servitja JM. **Alpha1-antitrypsin ameliorates islet amyloid-induced glucose intolerance and β-cell dysfunction.** *Molecular Metabolism.* 37:100984. I.F.: 6.448

3. Lozano-Cruz T; Alcarraz-Vizán G; de la Mata FJ; de Pablo S; Ortega P; Duarte Y; Bravo-Moraga F; González-Nilo FD; Novials A; Gómez R. **Cationic Carbosilane Dendritic Systems as Promising Anti-Amyloid Agents in Type 2 Diabetes**. *Chemistry-A European Journal.* 26(34):7609-7621. I.F.: 4.857

4. Sánchez-Gómez A; Alcarraz-Vizán G; Fernández M; Fernández-Santiago R; Ezquerra M; Cámara A; Serrano M; Novials A; Muñoz E; Valldeoriola F; Compta Y; Martí MJ. **Peripheral insulin and amylin levels in Parkinson's disease.** *Parkinsonism & Related Disorders.* 79:91-96. I.F.: 3.926

5. Parrizas M; Mundet X; Castaño C; Canivell S; Cos X; Brugnara L; Giráldez-García C; Regidor E; Mata-Cases M; Franch-Nadal J; Novials A. **miR-10b and miR-223-3p in serum microvesicles signal progression from prediabetes to type 2 diabetes.** *Journal of Endocrinological Investigation.* 43(4):451-459. I.F.: 3.397

6. Catalán-García M, García-García FJ, Moreno-Lozano PJ, Alcarraz-Vizán G, Tort-Merino A, Milisenda JC, Cantó-Santos J, Barcos-Rodríguez T, Cardellach F, Lladó A, Novials A, Garrabou G, Grau-Junyent JM. **Mitochondrial Dysfunction: A Common Hallmark Underlying Comorbidity between sIBM and Other Degenerative and Age-Related Diseases.** *Journal of Clinical Medicine.* 9(5):1446. I.F.: 3.303

7. Murillo S, Brugnara L, Maduell X, Novials A. **Management of Hypoglycemia in Adults with Type 1 Diabetes in Real-Life Condition.** *Annals of Nutrition and Metabolism.* 76(4):277-284. I.F.: 2.848

8. Diez AIG, Fuster D, Morata L, Torres F, Garcia R, Poggio D, Sotes S, Del Amo M, Isern-Kebschull J, Pomes J, Soriano A, Brugnara L, Tomas X. **Comparison of the diagnostic accuracy of diffusion-weighted and dynamic contrast-enhanced MRI with 18F-FDG PET/CT to differentiate osteomyelitis from Charcot neuro-osteoarthropathy in diabetic foot.** *European Journal of Radiology.* 132:109299. I.F.: 2.687

GRANTS FOR RESEARCH IN PROGRESS

Castaño C. **Administración de exo-miRNAs como tratamiento para la DM2 en ratones.**
Sponsored by: Sociedad Española de Diabetes. SED_PROY_20_001
Duration: 10/09/2020-09/09/2021

Ceriello A. **Role of released and exosomial microRNAs, inflammatory and diabetes associated (RExMIDAs), in endothelial metabolic memory.**
Sponsored by: Fundació la Marató de TV3. Diabet_16
Duration: 10/03/2017-31/12/2020

Novials A, Servitja JM. **BACE2, una nueva diana terapéutica para el tratamiento de la diabetes tipo 2 y la obesidad.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00879
Duration: 01/01/2018-31/12/2020

Novials A. **Els microRNAs exosomals induïts per l'exercici com a reguladors del metabolisme en humans i ratolins.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. BECA_ACADEMIA18_001
Duration: 24/05/2018-23/05/2020

Servitja JM. **Benchtop NMR for lab-on-chip.**
Sponsored by: European Commission. CE_H2020-FETOPN19
Duration: 01/01/2020-31/12/2022

Párrizas M. **Experimental modulation of exosomal miRNA targets for the treatment of diabetes.**
Sponsored by: European Foundation for the Study of Diabetes. INT_EFSD
Duration: 01/07/2020-30/11/2021

3.22 Inflammatory bowel disease

LOCATION
CEK building, floor 3

KEYWORDS
1. **Inflammatory bowel diseases**
2. **Cell therapy**
3. **Cross-sectional imaging**
4. **Biomarkers**

RELATED DISEASES
1. **Ulcerative colitis**
2. **Crohn's disease**
3. **Lympmocythic colitis**
4. **Colagenous colitis**

GROUP INVOLVED IN
AGAUR_SGR17: 00992
CIBEREHD

Original publications

TOTAL	26
IF	189,37
Mean IF	7,28
Q1	58%
D1	31%
MA	31%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Julià Panés (HCB)
T. 93 227 54 18
jpanes@clinic.cat

RESEARCHERS
Faust Feu (HCB)
Gloria Lacima (HCB)
Josep Llach (HCB)
Ingrid Ordas (HCB)
Elena Ricart (HCB)
Azucena Salas (IDIBAPS)

ASSISTANT RESEARCHERS
Isabella Dotti (IDIBAPS)
Marisol Veny (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Ana Maria Corraliza (IDIBAPS)
Victoria Gudiño (HCB)

PRE-DOCTORAL RESEARCHERS
Berta Caballol (HCB)
Jesús Casto (HCB)
Agnès Fernández Clotet (IDIBAPS)
Alba Garrido (IDIBAPS)
Aida Mayorgas (IDIBAPS)
Elisa Melón (IDIBAPS)
Lluís Revilla (CIBER)

TECHNICIANS
Montserrat Arroyes (IDIBAPS)
Miriam Esteller (CIBER)
Marta Martínez Picola (IDIBAPS)
Maria Carme Masamunt (CIBER)

NURSING STAFF
Rebeca Barastegui (HCB)
Marta Gallego (HCB)
Àngel Giner (FCRB)
Cristina Prieto (IDIBAPS)

PROBLEM

Crohn's disease and ulcerative colitis are diseases that begin in childhood and youth and become chronic. They cause a marked impairment in quality of life in all spheres.

The fact that patients present few specific symptoms (diarrhoea or abdominal pain) leads to a significant delay in establishing a diagnosis and also hinders monitoring.

In recent years, new treatments are being developed, but they are only effective for a certain percentage of patients, and there are no tools able to predict the response.

APPROACH

The laboratory is an international reference point in translational research aimed at finding out the molecular and cellular mechanisms involved in the development and course of Crohn's disease and ulcerative colitis.

It uses techniques such as transcriptional analysis in human samples (determining the genes that are being regulated at all times), analysis of immune cells and their responses to different stimuli or therapies, and the culture of stem cells from the intestinal epithelium. These cultures allow to study the impact of the disease on different epithelial functions, such as the response to the intestinal microbiota.

The group has developed imaging techniques that allow non-invasive and precise monitoring. The group has introduced highly effective cell therapies for cases in which the disease does not respond to available drugs (such as the use of mesenchymal cells for the treatment of perianal fistulas) and the transplantation of progenitor cells in patients with severe Crohn's disease who cannot undergo surgery.

IMPACT

The magnetic resonance index for the evaluation of Crohn's disease developed by the group is currently the most commonly used, in both clinical trials and in regular clinical practice.

The group has identified biomarkers linked to disease remission and alternative therapeutic targets for patients who do not respond to current treatments.

In Crohn's disease, it has discovered the presence of immune responses directed against components of the intestinal microbiota and has studied therapeutic options. The group has revealed the deregulation of the epithelial barrier in ulcerative colitis that affects stem cells (progenitors of the entire intestinal wall), which makes them a potential new therapeutic target.

The group has improved many aspects of the safety of transplantation of hematopoietic progenitors making this procedure more acceptable and generalizable. The group is working to optimise the use of mesenchymal cells (a type of stem cell) for the treatment of perianal fistulas, after demonstrating that with a single application, half of the fistulising lesions are cured.

RESEARCH LINES

- Cell therapies in refractory inflammatory bowel disease.

- Cross-sectional imaging for assessment of inflammatory bowel disease.

- Therapeutic targets and biomarkers in inflammatory bowel disease.

- siRNA delivery to the gut using lipid nanoparticles as carriers

PUBLICATIONS

Originals / I.F.: 189.369

1. Sandborn WJ; Feagan BG; Loftus EV; Peyrin-Biroulet L; Van Assche G; D'Haens G; Schreiber S; Colombel JF; Lewis JD; Ghosh S; Armuzzi A; Scherl E; Herfarth H; Vitale L; Mohamed MF; Othman AA; Zhou Q; Huang B; Thakkar RB; Pangan AL; Lacerda AP; Panes J. **Efficacy and Safety of Upadacitinib in a Randomized Trial of Patients With Crohn's Disease.** *Gastroenterology*. 158(8):2123-2138.e8. I.F.: 17.373

2. Sandborn WJ; Ghosh S; Panes J; Schreiber S; D'Haens G; Tanida S; Siffledeen J; Enejosa J; Zhou W; Othman AA; Huang B; Higgins PDR. **Efficacy of Upadacitinib in a Randomized Trial of Patients With Active Ulcerative Colitis.** *Gastroenterology*. 158(8):2139-2149.e14. I.F.: 17.373

3. Sandborn WJ; Peyrin-Biroulet L; Zhang J; Chiorean M; Vermeire S; Lee SD; Kühbacher T; Yacyshyn B; Cabell CH; Naik SU; Klassen P; Panés J. **Efficacy and Safety of Etrasimod in a Phase 2 Randomized Trial of Patients with Ulcerative Colitis**. *Gastroenterology*. 158(3):550-561. I.F.: 17.373

4. Metwaly A, Dunkel A, Waldschmitt N, Raj ACD, Lagkouvardos I, Corraliza AM, Mayorgas A, Martinez-Medina M, Reiter S, Schloter M, Hofmann T, Allez M, Panes J, Salas A, Haller D. **Integrated microbiota and metabolite profiles link Crohn's disease to sulfur metabolism.** *Nature Communications*. 11(1):4322. I.F.: 12.121

5. Calafat M, Mañosa M, Mesonero F, Guardiola J, Mínguez M, Nos P, Vera I, Taxonera C, Iglesias E, Ricart E, Gisbert JP, Calvet X, García-López S, Monfort D, Pérez Calle JL, Riestra S, Gomollón F, Garcia-Planella E, Bermejo F, Hernández V, Martín-Arranz MD, Gutiérrez A, Torres P, Cañete F, Domènech E, ENEIDA registry of GETECCU. **Switching to a second thiopurine in adult and elderly patients with inflammatory bowel disease: a nationwide study from the ENEIDA registry.** *Journal of Crohns & Colitis*. 14(9):1290-1298. I.F.: 8.658

6. Capozzi N, Ordás I, Fernandez-Clotet A, Castro-Poceiro J, Rodríguez S, Alfaro I, Sapena V, Masamunt MC, Ricart E, Panés J, Rimola J. **Validation of the simplified Magnetic Resonance Index of Activity (sMARIA) without gadolinium-enhanced sequences for Crohn's disease.** *Journal of Crohns & Colitis*. 14(8):1074-1081. I.F.: 8.658

7. Sandborn WJ; Nguyen DD; Beattie DT; Brassil P; Krey W; Woo J; Situ E; Sana R; Sandvik E; Pulido-Rios MT; Bhandari R; Leighton JA; Ganeshappa R; Boyle DL; Abhyankar B; Kleinschek MA; Graham RA; Panes J. **Development of gut-selective pan-Janus kinase inhibitor TD-1473 for ulcerative colitis: A translational medicine program.** *Journal of Crohns & Colitis*. 14(9):1202-1213. I.F.: 8.658

8. Vermeire S; Su C; Lawendy N; Kobayashi T; Sandborn WJ; Rubin DT; Modesto I; Gardiner S; Kulisek N; Zhang H; Wang W; Panés J. **Outcomes of Tofacitinib Dose Reduction in Patients with Ulcerative Colitis in Stable Remission from the Randomized RIVETING Trial.** *Journal of Crohns & Colitis*. I.F.: 8.658

9. Verstockt B, Verstockt S, Veny M, Dehairs J, Arnauts K, Van Assche G, De Hertogh G, Vermeire S, Salas A, Ferrante M. **Expression Levels of 4 Genes in Colon Tissue Might be Used to Predict Which Patients Will Enter Endoscopic Remission After Vedolizumab Therapy for Inflammatory Bowel Diseases.** *Clinical Gastroenterology and Hepatology*. 18(5):1142-1151.e10. I.F.: 8.549

10. Laharie D, Bourreille A, Branche J, Allez M, Bouhnik Y, Filippi J, Zerbib F, Savoye G, Vuitton L, Moreau J, Amiot A, Beaugerie L, Ricart E, Dewit O, Lopez-Sanroman A, Fumery M, Carbonnel F, Buisson A, Coffin B, Roblin X, van Assche G, Esteve M, Farkkila M, Gisbert JP, Marteau P, Nahon S, de Vos M, Peyrin-Biroulet L, Mary JY. **Evolution of endoscopic lesions in steroid-refractory acute severe ulcerative colitis responding to infliximab or cyclosporine.** *Clinical Gastroenterology and Hepatology*. S1542-3565(20):31078-8. I.F.: 8.549

11. Rimola J, Fernàndez-Clotet A, Capozzi N, Rojas-Farreras S, Alfaro I, Rodríguez S, Masamunt MC, Ricart E, Ordás I, Panés J. **Pre-treatment magnetic resonance enterography findings predict the response to TNF-alpha inhibitors in Crohn's disease.** *Alimentary Pharmacology & Therapeutics*. 52(10):1563-1573. I.F.: 7.515

12. Sands, Bruce E; Armuzzi, Alessandro; Marshall, John K; Lindsay, James O; Sandborn, William J; Danese, Silvio; Panes, Julian; Bressler, Brian; Colombel, Jean-Frederic; Lawendy, Nervin; Maller, Eric; Zhang, Haiying; Chan, Gary; Salese, Leonardo; Tsilkos, Konstantinos; Marren, Amy; Su, Chinyu. **Efficacy and safety of tofacitinib dose de-escalation and dose escalation for patients with ulcerative colitis: results from OCTAVE Open.** *Alimentary Pharmacology & Therapeutics*. 51(2):271-280. I.F.: 7.515

13. Iborra, Marisa; Beltran, Belen; Fernandez-Clotet, Agnes; Iglesias-Flores, Eva; Navarro, Pablo; Rivero, Montserrat; Gutierrez, Ana; Sierra-Ausin, Monica; Mesonero, Francisco; Ferreiro-Iglesias, Rocio; Hinojosa, Joaquin; Calvet, Xavier; Sicilia, Beatriz; Gonzalez-Munoza, Carlos; Antolin, Beatriz;

Gonzalez-Vivo, Maria; Carbajo, Ana Y; Garcia-Lopez, Santiago; Martin-Cardona, Albert; Suris, Gerard; Dolores Martin-Arranz, Maria; de Francisco, Ruth; Canete, Fiorella; Domenech, Eugeni; Nos, Pilar; GETECCU group (Grupo Español de trabajo de Enfermedades de Crohn y Colitis Ulcerosa). **Real-world long-term effectiveness of ustekinumab in Crohn's disease: results from the ENEIDA registry.** *Alimentary Pharmacology & Therapeutics.* 52(6):1017-1030. I.F.: 7.515

14. Rodriguez-Lago, Iago; Castro-Poceiro, Jesus; Fernandez-Clotet, Agnes; Mesonero, Francisco; Lopez-Sanroman, Antonio; Lopez-Garcia, Alicia; Marquez, Lucia; Clos-Parals, Ariadna; Canete, Fiorella; Vicuna, Miren; Nantes, Oscar; Merino, Olga; Matallana, Virginia; Gordillo, Jordi; Elorza, Ainara; Vicente, Raquel; Jose Casanova, Maria; Ferreiro-Iglesias, Rocio; Perez-Galindo, Pablo; Manuel Benitez, Jose; Taxonera, Carlos; Jose Garcia, Maria; Martin, Eduardo; Aguirre, Urko; Gisbert, Javier P; Young GETECCU Grp. **Tacrolimus induces short-term but not long-term clinical response in inflammatory bowel disease.** *Alimentary Pharmacology & Therapeutics.* 51(9):870-879. I.F.: 7.515

15. Wong J, Garcia-Carbonell R, Zelic M, Ho SB, Boland BS, Yao SJ, Desai SA, Das S, Planell N, Harris PA, Font-Burgada J, Taniguchi K, Bertin J, Salas A, Pasparakis M, Gough PJ, Kelliher M, Karin M, Guma M. **RIPK1 mediates TNF-induced intestinal crypt apoptosis during chronic NF-κB activation.** *Cmgh Cellular and Molecular Gastroenterology and Hepatology.* 9(2):295-312. I.F.: 7.076

16. Casanova MJ, Chaparro M, Mínguez M, Ricart E, Taxonera C, García-López S, Guardiola J, López-San Román A, Iglesias E, Beltrán B, Sicilia B, Vera MI, Hinojosa J, Riestra S, Domènech E, Calvet X, Pérez-Calle JL, Martín-Arranz MD, Aldeguer X, Rivero M, Monfort D, Barrio J, Esteve M, Márquez L, Lorente R, García-Planella E, de Castro L, Bermejo F, Merino O, Rodríguez-Pérez A, Martínez-Montiel P, Van Domselaar M, Alcaín G, Domínguez-Cajal M, Muñoz C, Gomollón F, Fernández-Salazar L, García-Sepulcre MF, Rodríguez-Lago I, Gutiérrez A, Argüelles-Arias F, Rodriguez C, Rodríguez GE, Bujanda L, Llaó J, Varela P, Ramos L, Huguet JM, Almela P, Romero P, Navarro-Llavat M, Abad Á, Ramírez-de la Piscina P, Lucendo AJ, Sesé E, Madrigal RE, Charro M, García-Herola A, Pajares R, Khorrami S, Gisbert JP. **Effectiveness and Safety of the Sequential Use of a Second and Third Anti-TNF Agent in Patients With Inflammatory Bowel Disease: Results From the Eneida Registry.** *Inflammatory Bowel Diseases.* 26(4):606-616. I.F.: 4.261

17. Ferrer-Picón E, Dotti I, Corraliza AM, Mayorgas A, Esteller M, Perales JC, Ricart E, Masamunt MC, Carrasco A, Tristán E, Esteve M, Salas A. **Intestinal Inflammation Modulates the Epithelial Response to Butyrate in Patients With Inflammatory Bowel Disease.** *Inflammatory Bowel Diseases.* 26(1):43-55. I.F.: 4.261

18. Lichtenstein GR; Rogler G; Ciorba MA; Su C; Chan G; Pedersen RD; Lawendy N; Quirk D; Nduaka CI; Thorpe AJ; Panés J. **Tofacitinib, an Oral Janus Kinase Inhibitor: Analysis of Malignancy (Excluding Nonmelanoma Skin Cancer) Events Across the Ulcerative Colitis Clinical Program.** *Inflammatory Bowel Diseases.* I.F.: 4.261

19. Dubinsky MC; DiBonaventura M; Fan H; Bushmakin AG; Cappelleri JC; Maller E; Thorpe AJ; Salese L; Panés J. **Tofacitinib in Patients with Ulcerative Colitis: Inflammatory Bowel Disease Questionnaire Items in Phase 3 Randomized Controlled Induction Studies.** *Inflammatory Bowel Diseases.* I.F.: 4.261

20. Da Silva FAR; Pascoal LB; Dotti I; Setsuko Ayrizono MdL; Aguilar D; Rodrigues BL; Arroyes M; Ferrer-Picon E; Milanski M; Velloso LA; Fagundes JJ; Salas A; Leal RF. **Whole transcriptional analysis identifies markers of B, T and plasma cell signaling pathways in the mesenteric adipose tissue associated with Crohn's disease.** *Journal of Translational Medicine.* 18(1):44. I.F.: 4.124

21. Rodriguez-Lago, Iago; Hoyo, Javier Del; Perez-Girbes, Alexandre; Garrido-Marin, Alejandro; Casanova, Maria Jose; Chaparro, Maria; Fernandez-Clotet, Agnes; Castro-Poceiro, Jesus; Garcia, Maria Jose; Sanchez, Sara; Ferreiro-Iglesias, Rocio; Baston, Iria; Piqueras, Marta; Careda, Lola Esteba i Bech de Careda; Mena, Raquel; Suarez, Cristina; Cordon, Joaquin Poza; Lopez-Garcia, Alicia; Marquez, Lucia; Arroyo, Maite; Alfambra, Erika; Sierra, Monica; Cano, Noelia; Delgado-Guillena, Pedro; Morales-Alvarado, Victor; Aparicio, Juan Carlos; Guerra, Ivan; Aullo, Carolina; Merino, Olga; Arranz, Laura; Hidalgo, Maria Araceli; Llao, Jordina; Plaza, Rocio; Molina, Gema; Torres, Paola; Perez-Galindo, Pablo; Romero, Maria Giselle; Herrera-deGuise, Claudia; Armesto, Edisa; Mesonero, Francisco; Frago-Larramona, Santiago; Benitez, Jose Manuel; Calvo, Marta; Martin, Maria del Carmen Lopez; Elorza, Ainara; Larena, Alejandro; Pena, Elena; Rodriguez-Grau, Maria del Carmen; Miguel-Criado, Jaime de; Botella, Belen; Olmos, Jose Antonio; Lopez, Laura; Aguirre, Urko; Gisbert, Javier P; Young GETECCU Grp. **Early treatment with anti-tumor necrosis factor agents improves long-term effectiveness in symptomatic stricturing Crohn's disease.** *United European Gastroenterology Journal.* 8(9):1056-1066. I.F.: 3.549

22. Guasch M; Cañete F; Ordás I; Iglesias-Flores E; Clos A; Gisbert JP; Taxonera C; Vera I; Mínguez M; Guardiola J; Rivero M; Nos P; Gomollón F; Barrio J; de Francisco R; López-Sanromán A; Martín-Arranz MD; Garcia-Planella E; Camargo R; García-López S; de Castro L; Calvet X; Esteve M; Mañosa M; Domènech E; GETECCU-ENEIDA registry. **Changes in the requirement for early surgery in inflammatory bowel disease in the era of biological agents.** *Journal of Gastroenterology and Hepatology.* 35(12):2080-2087. I.F.: 3.437

23. Algaba A; Guerra I; Ricart E; Iglesias E; Mañosa M; Gisbert JP; Guardiola J; Mínguez M; Castro B; de Francisco R; Nos P; Bertoletti F; Mesonero F; Barrio J; Martín-Arranz MD; Calvet X; García-López S; Sicilia B; Alcaín G; Esteve M; Márquez L; Piqueras M; Jiménez L; Perez-Calle JL; Bujanda L; García-Sepulcre M; Fernández A; Moraleja I; Lorente RH; García-Bosch O; Lambán A; Blázquez I; Rodríguez E; Huguet JM; Lucendo AJ; Almela P; Busquets D; Ramírez de la Piscina P; Pérez M; Domenech E; Bermejo F; Spanish GETECCU Group (ENEIDA Project). **Extraintestinal Manifestations in Patients with Inflammatory Bowel Disease: Study Based on the ENEIDA Registry.** *Digestive Diseases and Sciences.* I.F.: 2.751

24. Valdes del Pino, Yacqueline; Giordano, Antonio; Escapa, Miriam; Ricart, Elena; Ordas, Ingrid; Rodriguez, Sonia; Rimola, Jordi; Fernandez-Esparrach, Gloria; Gines, Angels; Llach, Josep; Panes, Julia; Gonzalez-Suarez, Begoña. **Is endoscopic treatment of small bowel strictures effective and safe in patients with Crohn's disease?** *Revista Española de Enfermedades Digestivas.* 112(4):284-289. I.F.: 2.196

25. Alcaraz Serrat JA; Córdova H; Moreira L; Pocurull A; Ureña R; Delgado-Guillena PG; Garcés-Durán R; Sendino O; García-Rodríguez A; González-Suárez B; Araujo IK; Ginès À; Llach J; Fernández-Esparrach G. **Evaluation of long-term adherence to oesophagogastroduodenoscopy quality indicators.** *Gastroenterología y Hepatología.* 43(10):589-597. I.F.: 1.581

26. Puig I; Sanabria E; Feu F; Couto I; Blanco M; Alonso P; Gisbert JP; McNicholl AG; Seoane A; Bory F; Polo F; Orivé V; Ponce J; Borda F; Hervás A; Pérez-Aisa Á; Rivera R; Quintero E; Nicolás-Pérez D; Bujanda L; Rodrigo L; Calvet X. **Heterogeneity of clinical management of low-grade gastric lymphoma of mucosa-associated lymphoid tissue. An audit of 198 patients in Spain**. *Gastroenterología y Hepatología.*. 43(2):79-86. I.F.: 1.581

Review / I.F.: 46.001

1.-Salas, Azucena; Hernandez-Rocha, Cristian; Duijvestein, Marjolijn; Faubion, William; McGovern, Dermot; Vermeire, Severine; Vetrano, Stefania; Vande Casteele, Niels. **JAK-STAT pathway targeting for the treatment of inflammatory bowel disease.** *Nature Reviews Gastroenterology & Hepatology.* 17(6):323-337. I.F.: 29.869

2. Garrido-Trigo A; Salas A. **Molecular structure and function of Janus kinases: implications for the development of inhibitors.** *Journal of Crohns & Colitis.* *14*(2):S713-S724. I.F.: 8.658

3. Veny M, Fernández-Clotet A, Panés J. **Controlling leukocyte trafficking in IBD.** *Pharmacological Research.* 159:105050. I.F.: 5.893

4. Zabana Y, Panés J, Nos P, Gomollón F, Esteve M, García-Sánchez V, Gisbert JP, Barreiro-de-Acosta M, Domènech E, en representación de GETECCU. **The ENEIDA registry (Nationwide study on genetic and environmental determinants of inflammatory bowel disease) by GETECCU: Design, monitoring and functions.** *Gastroenterología y Hepatología.* 43(9):551-558. I.F.: 1.581

Letters / I.F.: 52.174

1. Dotti I; Salas A. **A new model of intestinal epithelial regeneration: could patients benefit?** *Nature Reviews Gastroenterology & Hepatology.* 17(3):137-138. I.F.: 29.869

2. Sandborn WJ, Panés J, Sands BE, Reinisch W, Su C, Lawendy N, Koram N, Fan H, Jones TV, Modesto I, Quirk D, Danese S. **Letter: thromboembolic and cardiovascular events with tofacitinib in ulcerative colitis-two cases in real world clinical practice.** *Alimentary Pharmacology & Therapeutics.* 51(11):1209-1210. I.F.: 7.515

3. Sands BE; Armuzzi A; Marshall JK; Lindsay JO; Sandborn WJ; Danese S; Panés J; Bressler B; Colombel JF; Lawendy N; Maller E; Zhang H; Chan G; Salese L; Tsilkos K; Marren A; Su C. **Letter: corticosteroid use alongside tofacitinib in OCTAVE Open. Authors' reply.** *Alimentary Pharmacology & Therapeutics.* 51(10):997-998. I.F.: 7.515

4. Pesántez D; Seguí E; Ordás I; Viladot M; Arance A. **Successful management of refractory immune-mediated enterocolitis with cyclosporine.** *European Journal of Cancer.* 131:37-39. I.F.: 7.275

Editorial / I.F.: 15.548

1. Panés J; Vermeire S. **JAK Inhibitors: Back to Small Molecules for the Treatment of IBD.** *Journal of Crohns & Colitis.* 14(2):S711-S712. I.F.: 8.658

2. Ginès À, Fernández-Esparrach G, Pellisé M, Sendino O, Balaguer F, Llach J, González-Suárez B, Saló S. **Critical importance of early introduction of prevention measures for SARS-CoV-2 infection in endoscopy units.** *Gastrointestinal Endoscopy.* 92(4):936-937. I.F.: 6.890

Clinical Guidelines / I.F.: 1.581

1. Daniel Ginard, Ignacio Marín-Jiménez, Manuel Barreiro-de Acosta, Elena Ricart, Eugeni Domènech, Javier P Gisbert, Maria Esteve, Miguel Mínguez, en representación de GETECCU. **Recommendations of the Spanish Working Group on Crohn's Disease and Ulcerative Colitis (GETECCU) on topical therapy in ulcerative colitis.** *Gastroenterología y Hepatología.* 43(2):97-105. I.F.: 1.581

Consortium Publications / I.F.: 40.872

1. Rubin DT; Abreu MT; Rai V; Siegel CA; Ahuja V; Allez M; Ananthakrishnan AN; Bernstein CN; Braun JG; Chowers Y; Colombel JF; Danese S; D'Haens G; D'Hoore A; Dignass A; Dotan I; Dubinsky MC; Ekbom A; Fleshner PR; Gassull MA; Gearry RB; Ghosh S; Griffiths AM; Halfvarson J; Hanauer SB; Harpaz N; Hart A; Kamm MA; Kaplan GG; Koutroubakis I; Lakatos PL; Levine A; Lewis JD; Lindsay JO; Loftus EV; Louis E; Lukas M; Magro F; Mahadevan U; Mantzaris GJ. **Management of Patients With Crohn's Disease and Ulcerative Colitis During the Coronavirus Disease-2019 Pandemic: Results of an International Meeting.** *Gastroenterology.* 159(1):6-13.e6. I.F.: 17.373

2. Abreu, Maria T; Sandborn, William J; IOIBD Defining Endpoints. **Defining Endpoints and Biomarkers in Inflammatory Bowel Disease: Moving the Needle Through Clinical Trial Design.** *Gastroenterology.* 159(6):2013-2018.e7. I.F.: 17.373

3. Londoño MC; Reig M; RETOINMUNO Multidisciplinary Group. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers.* 12(11):1-22. I.F.: 6.126

GRANTS FOR RESEARCH IN PROGRESS

Panés J, Cervera R. **Taxonomy, Treatment, Targets and Remission. Identification of the Molecular Mechanisms of non-response to Treatments, Relapses and Remission in Autoimmune, Inflammatory, and Allergic Conditions.**
Sponsored by: European Commission.
CE_IMI2-2018-14
Duration: 01/09/2019-31/08/2026

Ricart E. **Eficacia y seguridad del trasplante autólogo de progenitores hematopoyéticos para la enfermedad de Crohn refractaria tras movilización libre de ciclofosfamida.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00513
Duration: 01/01/2018-30/06/2022

Salas A. **Mecanismes cel·lulars i moleculars de la malaltia inflamatòria intestinal.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_00992
Duration: 01/01/2017-30/09/2021

Salas A, Panés J. **Caracterización de la base celular de la enfermedad inflamatoria intestinal mediante secuenciación de células individuales.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-096946-B-I00
Duration: 01/01/2019-31/12/2021

Salas A. **New siRNA Nanotherapy for Inflammatory Bowel Diseases, targeting Janus kinase 3.**
Sponsored by: European Commission. CE_H2020_NMBP16_17
Duration: 01/01/2017-30/06/2021

Salas A, Panés J. **Early detection of perianal fistulizing disease- Pathophysiology and Imaging.**
Sponsored by: The Leona M & Harry B Helmsley Charitable Trust. INT_HelmselyC-T_19
Duration: 25/11/2019-24/11/2022

3.23 Cholestasis

LOCATION
HCB building, floor 4B

KEYWORDS
1. **Primary biliary cholangitis**
2. **Primary sclerosing cholangitis**
3. **Autoimmune hepatitis**
4. **Cholestasis**
5. **Metabolic bone disease**
6. **Pruritus**

RELATED DISEASES
1. **Primary biliary cholangitis**
2. **Primary sclerosing cholangitis**
3. **Autoimmune hepatitis**

GROUP INVOLVED IN
CIBERehd
ERN-Rare Liver
Global-PBC
IAIHSG
IPSCSG

Original publications

TOTAL	12
IF	107,15
Mean IF	8,93
Q1	83%
D1	33%
MA	33%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Albert Parés (HCB)
T. 93 227 57 53
apares@clinic.cat

ASSISTANT RESEARCHERS
Susana Jurado (CIBER)

PRE-DOCTORAL RESEARCHERS
Anna Reig (FCRB)

NURSING STAFF
Jessica Iglesias (HCP)
Pilar Sesé (HCB)

PROBLEM

The autoimmune cholestasis diseases, which include primary biliary cholangitis, primary sclerosing cholangitis and autoimmune hepatitis, are rare, but their prevalence is growing. Their development, presentation, course, prognosis and treatment are still little known.

The group's goal is to improve knowledge of all these aspects, and to address new therapeutic strategies. The group also emphasises better knowledge regarding the origin, development and treatment of manifestations associated with autoimmune cholestasis diseases, such as pruritus and osteoporosis.

APPROACH

The group analyses the clinical characteristics and the prognostic indicators of these diseases to delimit the subgroup of patients that requires innovative therapies. To find out about the origin and development of pruritus, it conducts metabolomic studies in patients who receive different known treatments or those under evaluation, such as fibrates.

Knowledge of the metabolic pathology of the bone is partially addressed, through experimental procedures with specific bone cell lines.
From the clinical point of view, new first- and second-line treatment options are being evaluated to prevent the loss of bone mass and relieve pruritus.

IMPACT

The group has defined criteria for therapeutic response to ursodeoxycholic acid in primary biliary cholangitis and has described which patients need a second-line treatment (second option).

The group has demonstrated the efficacy of fibrates and their role in pruritus associated with cholestasis. For primary sclerosing cholangitis it has defined several phenotypes and prognostic factors, and for autoimmune hepatitis the group is analysing which patients can stop taking immunomodulators (agents that act on the mechanisms of the immune response).

As regards osteoporosis related to cholestasis, the group has shown that, basically, it depends on impaired bone formation.

RESEARCH LINES

- Course and prognosis in primary sclerosing cholangitis.

- Development of new prognostic scores in primary biliary cholangitis.

- Epidemiology and natural history of chronic cholestatic disorders in adults.

- Evaluation of the factors of treatment response, and new treatment regimens in patients with suboptimal response to ursodeoxycholic acid.

- Presentation, course and prognosis of autoimmune hepatitis.

- Pruritus in chronic cholestasis: pathogenesis and treatment.

PUBLICATIONS

Originals / I.F.: 107.15

1. Corpechot C, Chazouillères O, Belnou P, Montano-Loza AJ, Mason A, Ebadi M, Eurich D, Chopra S, Jacob D, Schramm C, Sterneck M, Bruns T, Reuken P, Rauchfuss F, Roccarina D, Thorburn D, Gerussi A, Trivedi P, Hirschfield G, McDowell P, Nevens F, Boillot O, Bosch A, Giostra E, Conti F, Poupon R, Parés A, Reig A, Donato MF, Malinverno F, Floreani A, Russo FP, Cazzagon N, Verhelst X, Goet J, Harms M, van Buuren H, Hansen B, Carrat F, Dumortier J, Global PBC Study Group. **Long-term impact of preventive UDCA therapy after transplantation for primary biliary cholangitis.** *Journal of Hepatology.* 73(3):559-565. I.F.: 20.582

2. Harms M; De Veer R; Lammers W; Corpechot C; Thorburn D; Janssen H; Lindor K; Trivedi P; Hirschfield G; Pares A; Floreani A; Mayo M; Invernizzi P; Battezzati P; Nevens F; Ponsioen C; Mason A; Kowdley K; Hansen B; Buuren H; Van Der Meer A. **Number needed to treat with ursodeoxycholic acid therapy to prevent liver transplantation or death in primary biliary cholangitis.** *Gut.* 69(8):1502-1509. I.F.: 19.819

3. Reig A, Norman GL, Garcia M, Shums Z, Ruiz-Gaspà S, Bentow C, Mahler M, Romera MA, Vinas O, Pares A. **Novel Anti-Hexokinase 1 Antibodies Are Associated With Poor Prognosis in Patients With Primary Biliary Cholangitis.** *American Journal of Gastroenterology.* 115(10):1634-1641. I.F.: 10.171

4. Murillo Perez CF, Harms MH, Lindor KD, van Buuren HR, Hirschfield GM, Corpechot C, van der Meer AJ, Feld JJ, Gulamhusein A, Lammers WJ, Ponsioen CY, Carbone M, Mason AL, Mayo MJ, Invernizzi P, Battezzati PM, Floreani A, Lleo A, Nevens F, Kowdley KV, Bruns T, Dalekos GN, Gatselis NK, Thorburn D, Trivedi PJ, Verhelst X, Parés A, Janssen HLA, Hansen BE, GLOBAL PBC Study Group. **Goals of Treatment for Improved Survival in Primary Biliary Cholangitis: Treatment Target Should Be Bilirubin Within the Normal Range and Normalization of Alkaline Phosphatase.** *American Journal of Gastroenterology.* 115(7):1066-1074. I.F.: 10.171

5. Bowlus CL, Pockros PJ, Kremer AE, Parés A, Forman LM, Drenth JPH, Ryder SD, Terracciano L, Jin Y, Liberman A, Pencek R, Iloeje U, MacConell L, Bedossa P. **Long-term Obeticholic Acid Therapy Improves Histological Endpoints in Patients With Primary Biliary Cholangitis.** *Clinical Gastroenterology and Hepatology.* 18(5):1170-1178.e6. I.F.: 8.549

6. Gatselis NK, Goet JC, Zachou K, Lammers WJ, Janssen HLA, Hirschfield G, Corpechot C, Lindor KD, Invernizzi P, Mayo MJ, Battezzati PM, Floreani A, Pares A, Lygoura V, Nevens F, Mason AL, Kowdley KV, Ponsioen CY, Bruns T, Thorburn D, Verhelst X, Harms MH, van Buuren HR, Hansen BE, Dalekos GN, Global Primary Biliary Cholangitis Study Group. **Factors Associated With Progression and Outcomes of Early-stage Primary Biliary Cholangitis.** *Clinical Gastroenterology and Hepatology.* 18(3):684-692.e6. I.F.: 8.549

7. Gerussi A, Bernasconi DP, O'Donnell SE, Lammers WJ, Van Buuren H, Hirschfield G, Janssen H, Corpechot C, Reig A, Pares A, Battezzati PM, Zuin MG, Cazzagon N, Floreani A, Nevens F, Gatselis N, Dalekos G, Mayo MJ, Thorburn D, Bruns T, Mason AL, Verhelst X, Kowdley K, van der Meer A, Niro GA, Beretta-Piccoli BT, Marzioni M, Belli LS, Marra F, Valsecchi MG, Lindor KD, Invernizzi P, Hansen BE, Carbone M, Italian PBC Study Group and the GLOBAL PBC Study Group. **Measurement of Gamma Glutamyl Transferase to Determine Risk of Liver Transplantation or Death in Patients With Primary Biliary Cholangitis.** *Clinical Gastroenterology and Hepatology.* S1542-3565(20):31083-1. I.F.: 8.549

8. Llovet, Laura-Patricia; Gratacos-Gines, Jordi; Ortiz, Oswaldo; Rodriguez-Tajes, Sergio; Lens, Sabela; Reverter, Enric; Ruiz-Ortiz, Estibaliz; Costa, Josep; Vinas, Odette; Forns, Xavier; Pares, Albert; Londoño, Maria-Carlota. **Higher seroprevalence of hepatitis E virus in autoimmune hepatitis: Role of false-positive antibodies.** *Liver International.* 40(3):558-564. I.F.: 5.175

9. Parés A, Shiffman M, Vargas V, Invernizzi P, Malecha ES, Liberman A, MacConell L, Hirschfield G. **Reduction and Stabilization of Bilirubin With Obeticholic Acid Treatment in Patients With Primary Biliary Cholangitis.** *Liver International.* 40(5):1121-1129. I.F.: 5.175

10. Ruiz-Gaspà S, Guañabens N, Jurado S, Combalia A, Peris P, Monegal A, Parés A. **Bilirubin and bile acids in osteocytes and bone tissue.** *Liver International.* 40(11):2767-2775. I.F.: 5.175

11. Ruiz-Gaspà S; Guañabens N; González S; Dubreuil M; Combalia A; Peris P; Monegal A; Parés A. Bile acids and bilirubin effects on osteoblastic gene profile. I**mplications in the pathogenesis of osteoporosis in liver diseases.** *Gene.* 725:144167. I.F.: 2.984

12. Murillo Perez CF, Gulamhusein A, Carbone M, Trivedi PJ, van der Meer AJ, Corpechot C, Battezzati PM, Lammers WJ, Cazzagon N, Floreani A, Parés A, Nevens F, Lleo A, Mayo MJ, Kowdley KV, Ponsioen CY, Dalekos GN, Gatselis NK, Thorburn D, Mason AL, Janssen H, Verhelst X, Bruns T, Lindor KD, Chazouillères O, Invernizzi P, Hansen BE, Hirschfield GM, GLOBAL PBC Study Group. **Simplified care-pathway selection for nonspecialist practice: the GLOBAL Primary Biliary Cholangitis Study Group Age, Bilirubin, Alkaline phosphatase risk assessment tool.** *European Journal of Gastroenterology & Hepatology.* I.F.: 2.251

GRANTS FOR RESEARCH IN PROGRESS

Parés A. **Efecto del bezafibrato sobre el prurito de la colestasis. Mecanismos patogénicos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00797
Duration: 01/01/2016-30/11/2021

3.24 Protective strategies against hepatic ischemia reperfusion injury

LOCATION
CEK building, floor 3

KEYWORDS
1. **Ischemia-reperfusion**
2. **Liver transplantation**
3. **Organ, tissue and cell preservation**
4. **Hepatic resections**
5. **Steatosis**
6. **NAFLD**
7. **NASH**
8. **Preservation solutions**
9. **BD donors**
10. **LRLT**
11. **DCD donors**

RELATED DISEASES
1. **Liver transplantation from standard and extended donors**
2. **Organ , tissue and cell preservation**
3. **Hepatic resections associated with tumours**
4. **Diseases related with diabetes and metabolic syndrome**
5. **Nafld/nash and liver surgery**
6. **Preclinical experimental models in different liver diseases**
7. **Pharmacological modulation and different surgical strategies in different liver diseases**

GROUP INVOLVED IN
AGAUR_SGR17: 00551

Original publications

TOTAL	5
IF	38,07
Mean IF	7,61
Q1	100%
D1	60%
MA	80%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Carmen Peralta (IDIBAPS)
T. 93 227 54 00 (Ext.: 4177)
cperalta@clinic.cat

ASSISTANT RESEARCHERS
Emilia Juan (UB)
Miguel Ángel López-Boado (HCB)
Joana M. Planas (UB)

POST-DOCTORAL RESEARCHERS
María Eugenia Cornide (IDIBAPS)
Monica Bibiana Jiménez Castro (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Marc Micó (IDIBAPS)
Carlos Rojano Alfonso (IDIBAPS)

TECHNICIANS
Albert Caballeria (UB)

PROBLEM

Organs available for transplant are insufficient to meet demand and many patients die while waiting. The majority of organs for a transplant come from deceased donors but, given the shortage of donors, the criteria have been expanded and steatosis (fatty liver and donors from acardiac arrest) is also now accepted.

Both brain death, cardiac arrest and steatosis negatively affect graft quality, as well as post-transplant results. In addition, many organs are rejected precisely due to steatosis, which increases the problem of donor liver shortages.

Liver diseases, including the use of livers such as liver from diabetic, NAFLD/NASH and other liver diseases shows more vulnerability to heptic ischemia-reperfusion injury and to regenerative failure when such livers are submitted to liver surgery.

APPROACH

The group's research focuses on the investigations aimed at evaluating pharmacological, technological and surgical strategies in different liver diesases (livers with NAFLD/NASH, cirrhosis among other diseases) with or without liver sugery (transplantation and hepatic resections) to protect such livers against damage, the progession of liver disease, and regenerative failure.

The knowledge of the different liver pathologies in preclinical models that mimic as soon as possible the clinical conditions (with or without liver surgery) will provide new target of potential therapeutic action as well as the establishment of pharmacological, surgical and technological strategies useful in the clinical practice.

IMPACT

The group's goal is to transfer to clinical practice the most effective and least invasive therapies for people who need a liver, improve the post-operative outcomes in patients that are submitted to hepatic resections of tumours-which show poor regenerative response and exacerbated ischemia-reperfusion injury-, as well as to improve the life quality of patients with different liver pathologies (NAFLD/NASH, cirrhosis, liver diseases related with diabetes, among others) using preclinical models that mimic as soon as possible the clinical conditions.

The application of its results may solve a problem of social and clinical significance: improving the survival and quality of life of those patients with the mentioned pathologies, as well reduce the ischemia-reperfusion injury and improve liver regeneration in patients submitted to liver surgery of hepatic resections associated with tumour as well as liver transplantation, therefore, reducing waiting lists.

RESEARCH LINES

- A new medical device for transporting abdominal organs in clinical practice.

- Innovations for organ preservation during long times.

- New preservation solutions in liver transplantation.

- Pharmacological, technological and surgical strategies in liver transplantation and surgery

PUBLICATIONS

Originals / I.F.: 38.065

1. Gulfo J, Rotondo F, Ávalos de León CG, Cornide-Petronio ME, Fuster C, Gracia-Sancho J, Jiménez-Castro MB, Peralta C. **FGF15 improves outcomes after brain dead donor liver transplantation with steatotic and non-steatotic grafts in rats**. *Journal of Hepatology.* 73(5):1131-1143. I.F.: 20.582

2. Hide D, Warren A, Fernández-Iglesias A, Maeso-Díaz R, Peralta C, Le Couteur DG, Bosch J, Cogger VC, Gracia-Sancho J. **Ischemia/reperfusion injury in the aged liver: The importance of the sinusoidal endothelium in developing therapeutic strategies for the elderly.** *Journals of Gerontology Series A-Biological Sciences and Medical Sciences.* 75(2):268-277. I.F.: 5.236

3. Kundisova, Ivana; Emilia Juan, M; Planas, Joana M. **Simultaneous Determination of Phenolic Compounds in Plasma by LC-ESI-MS/MS and Their Bioavailability after the Ingestion of Table Olives.** *Journal of Agricultural and Food Chemistry.* 68(37):10213-10222. I.F.: 4.192

4. Moreno-Gonzalez, Rocio; Emilia Juan, M; Planas, Joana M. **Table olive polyphenols: A simultaneous determination by liquid chromatography-mass spectrometry.** *Journal of Chromatography a.* 1609:460434. I.F.: 4.049

5. Moreno-Gonzalez, Rocio; Emilia Juan, M; Planas, Joana M. **Profiling of pentacyclic triterpenes and polyphenols by LC-MS in Arbequina and Empeltre table olives.** *Lwt-Food Science and Technology.* 126:109310. I.F.: 4.006

Review / I.F.: 9.102

1. Heydari M; Cornide-Petronio ME; Jiménez-Castro MB; Peralta C. **Data on adiponectin from 2010 to 2020: Therapeutic target and prognostic factor for liver diseases?** *International Journal of Molecular Sciences.* 21(15):5242. I.F.: 4.556

2. Cornide-Petronio ME; Álvarez-Mercado AI; Jiménez-Castro MB; Peralta C. **Current knowledge about the effect of nutritional status, supplemented nutrition diet, and gut microbiota on hepatic ischemia-reperfusion and regeneration in liver surgery.** *Nutrients.* 12(2):284. I.F.: 4.546

GRANTS FOR RESEARCH IN PROGRESS

Peralta C. **Preservació del l'empelt hepatic (Hepatic graft perseveration).**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00551
Duration: 01/01/2017-30/09/2021

Peralta C. **Nuevas estrategias en el trasplante de injertos hepáticos esteatósicos y no esteatósicos procedentes de donantes con muerte cerebral.**
Sponsored by: Ministerio de Ciencia e Innovación (es). MCIU_R-TI2018-095114-B-I00
Duration: 01/01/2019-31/12/2021

DOCTORAL THESES

Peralta C. **Mecanismos de señalización y estrategias terapéuticas de protección en los donantes con parada cardiaca en el trasplante hepático.**
PhD student: Cindy Guadalupe Avalos de León

3.25 Inherited metabolic diseases

LOCATION
HCB building

KEYWORDS
1. **Mitochondrial diseases**
2. **Mitochondrial cofactors**
3. **Lysosomal diseases**
4. **Inherited metabolic diseases**
5. **Inborn errors of metabolism**
6. **Organic acidurias**
7. **CDG**
8. **Genomics**
9. **RNAseq**
10. **Functional Genomics**

RELATED DISEASES
1. **Diseases of the mitochondrial energy metabolism**
2. **Lysosomal diseases**
3. **Congenital disorders of glycosilation (CDG)**

GROUP INVOLVED IN
AGAUR_SGR17: 01428
CIBERER

Original publications

TOTAL	8
IF	29,67
Mean IF	3,71
Q1	50%
D1	0%
MA	38%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Antonia Ribes (HCB)
T. 93 227 54 00 (Ext.: 9340)
aribes@clinic.cat

RESEARCHERS
Mª José Coll (HCB)
Judit Garcia Villoria (HCB)
Laura Gort (HCB)
Rosa Lopez Galera Mª (HCB)

ASSISTANT RESEARCHERS
Frederic Tort (CIBER)

PRE-DOCTORAL RESEARCHERS
Blai Morales (HCB)
Gerard Muñoz (IDIBAPS)
Eulàlia Segur (FCRB)
Olatz Ugarteburu (CIBER)

COLLABORATORS
Ana Argudo (HCB)
Jose Manuel Gonzalez de Aledo (HCB)
Sonia Pajares (HCB)

PROBLEM

According to the latest data, fifty per cent of people who suffer from inherited genetic diseases are not diagnosed.

The main reason lies in the clinical diversity of their symptoms: not all genetic alterations can be easily detected and although it is now possible to perform genomic studies on each person, the pathological significance of many of the genetic variants identified is not known and this makes it difficult to obtain a conclusive diagnosis.

Inherited diseases generally require personalised therapies that cannot be offered without a conclusive diagnosis, and the absence of a clear diagnosis makes it difficult to access treatment and adequate genetic counselling.

APPROACH

The group's strategy to improve the diagnosis and treatment of inherited genetic diseases consists of the combined use of modern, innovative techniques (genomics, transcriptomics, proteomics and metabolomics) with traditional biochemical studies and cell biology.

It has implemented methods that make it possible to determine whether or not the genetic variants identified cause a particular disorder, so that a conclusive diagnosis can be established. These studies are conducted using samples obtained directly from patients and cell generated identified in the laboratory.

IMPACT

The group has identified new genes associated with different diseases. Its objective is to continue to identify new genes to improve the diagnosis of inherited metabolic diseases.

It will also continue its research and development of drugs that improve the quality of life of patients and their families. In some cases, new therapeutic options may become available, and in others, adequate genetic counselling.

RESEARCH LINES

- Identification of genes responsible for Mendelian disorders.

- Physiopathology of the identified inherited genetic diseases.

- Therapeutic approaches in inherited metabolic diseases.

PUBLICATIONS

Originals / I.F.: 29.673

1. Benetó N; Cozar M; Gort L; Pacheco L; Vilageliu L; Grinberg D; Canals I. **Generation of two NAGLU-mutated homozygous cell lines from healthy induced pluripotent stem cells using CRISPR/Cas9 to model Sanfilippo B syndrome.** *Stem Cell Research.* 42:101668. I.F.: 4.495

2. Tort F, Barredo E, Parthasarathy R, Ugarteburu O, Ferrer-Cortès X, García-Villoria J, Gort L, González-Quintana A, Martín MA, Fernández-Vizarra E, Zeviani M, Ribes A . **Biallelic mutations in NDUFA8 cause complex I deficiency in two siblings with favorable clinical evolution.** *Molecular Genetics and Metabolism.* 131(3):349-357. I.F.: 4.170

3. Mingirulli N, Pyle A, Hathazi D, Alston CL, Kohlschmidt N, O'Grady G, Waddell L, Evesson F, Cooper SBT, Turner C, Duff J, Topf A, Yubero D, Jou C, Nascimento A, Ortez C, García-Cazorla A, Gross C, O'Callaghan M, Santra S, Preece MA, Champion M, Korenev S, Chronopoulou E, Anirban M, Pierre G, McArthur D, Thompson K, Navas P, Ribes A, Tort F, Schlüter A, Pujol A, Montero R, Sarquella G, Lochmüller H, Jiménez-Mallebrera C, Taylor RW, Artuch R, Kirschner J, Grünert SC, Roos A, Horvath R. **Clinical presentation and proteomic signature of patients with TANGO2 mutations**. *Journal of Inherited Metabolic Disease.* 43(2):297-308. I.F.: 4.036

4. Ugarteburu O, Teresa Garcia-Silva M, Aldamiz-Echevarria L, Gort L, Garcia-Villoria J, Tort F, Ribes A. **Complex I deficiency, due to NDUFAF4 mutations, causes severe mitochondrial dysfunction and is associated to early death and dysmorphia**. *Mitochondrion.* 55:78-84. I.F.: 3.992

5. Habbane M, Llobet L, Bayona-Bafaluy MP, Bárcena JE, Ceberio L, Gómez-Díaz C, Gort L, Artuch R, Montoya J, Ruiz-Pesini E. **Leigh Syndrome in a Pedigree Harboring the m.1555A>G Mutation in the Mitochondrial 12S rRNA.** *Genes.* 11(9):1007. I.F.: 3.759

6. Ugarteburu O, Sánchez-Vilés M, Ramos J, Barcos-Rodríguez T, Garrabou G, García-Villoria J, Ribes A, Tort F. **Physiopathological Bases of the Disease Caused by HACE1 Mutations: Alterations in Autophagy, Mitophagy and Oxidative Stress Response**. *Journal of Clinical Medicine.* 9(4):913. I.F.: 3.303

7. Benetó N, Cozar M, Castilla-Vallmanya L, Zetterdahl OG, Sacultanu M, Segur-Bailach E, García-Morant M, Ribes A, Ahlenius H, Grinberg D, Vilageliu L, Canals I. **Neuronal and Astrocytic Differentiation from Sanfilippo C Syndrome iPSCs for Disease Modeling and Drug Development.** *Journal of Clinical Medicine.* 9(3):644. I.F.: 3.303

8. Guiñón L, Soler A, Molina A, Marín JL, López RM, García-Villoria J, Sahuquillo Á, Alvarez L. **Analytical performance specifications based on the state-of-the-art for the newborn screening.** *Clinica Chimica Acta.* 510:117-120. I.F.: 2.615

Case Reports / I.F.: 4.044

1. Pajares S, López RM, Gort L, Argudo-Ramírez A, Marín JL, González de Aledo-Castillo JM, García-Villoria J, Arranz JA, Del Toro M, Tort F, Ugarteburu O, Casellas MD, Fernández R, Ribes A. **An incidental finding in newborn screening leading to the diagnosis of a patient with ECHS1 mutations.** *Molecular Genetics and Metabolism Reports.* 22:100553. I.F.: 2.022

2. Sala-Coromina J; Miguel LDd; de las Heras J; Lasa-Aranzasti A; Garcia-Arumi E; Carreño L; Arranz JA; Carnicer C; Unceta-Suárez M; Sanchez-Montañez A; Gort L; Tort F; del Toro M. **Leigh syndrome associated with TRMU gene mutations.** *Molecular Genetics and Metabolism Reports.* 26:100690. I.F.: 2.022

Consortium Publications / I.F.: 5.553

1. Matalonga L, Laurie S, Papakonstantinou A, Piscia D, Mereu E, Bullich G, Thompson R, Horvath R, Pérez-Jurado L, Riess O, Gut I, van Ommen GJ, Lochmüller H, Beltran S, RD–Connect Genome-Phenome Analysis Platform and URD-Cat Data Contributors. **Improved Diagnosis of Rare Disease Patients through Systematic Detection of Runs of Homozygosity.** *Journal of Molecular Diagnostics.* 22(9):1205-1215. I.F.: 5.553

GRANTS FOR RESEARCH IN PROGRESS

Ribes A. **Identificación y caracterización de nuevos defectos del metabolismo energético mitocondrial asociados a 3-metilglutacónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01048
Duration: 01/01/2017-30/11/2020

Ribes A, Gort L. **Desarrollo de una plataforma para demostrar patogenicidad de variantes de significado incierto y nuevos genes causantes de enfermedad en pacientes con trastornos del metabolismo energético mitocondrial.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01310
Duration: 01/01/2020-31/12/2022

3.26 Liver cell plasticity and tissue repair

LOCATION
CEK building, floor 3

KEYWORDS
1. **Chronic liver disease**
2. **Cell plasticity**
3. **In vitro liver modelling**
4. **Stem cells**
5. **Organoids**

RELATED DISEASES
1. **Liver disease**

GROUP INVOLVED IN
AGAUR_SGR17: 01456

Original publications

TOTAL	3
IF	21,71
Mean IF	7,24
Q1	67%
D1	33%
MA	0%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Pau Sancho-Bru (IDIBAPS)
T. 93 227 54 00 (Ext.: 3371)
psancho@clinic.cat

POST-DOCTORAL RESEARCHERS
Delia Blaya (IDIBAPS)
Joan Pallares (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Beatriz Aguilar (IDIBAPS)
Silvia Ariño (IDIBAPS)
Raquel Martínez García de la Torre (IDIBAPS)
Julia Vallverdú (IDIBAPS)

TECHNICIANS
Andrea Martí (IDIBAPS)
Ana Teresa Rubio (IDIBAPS)

PROBLEM

In advanced liver diseases, the mechanisms for tissue repair and liver regeneration are compromised, resulting in organ dysfunction and, ultimately, in liver failure.

Which factors compromise hepatic repair? How is liver regeneration regulated? What do the cells do to maintain their characteristics and function?

These are some of the questions that the group wants to answer in order to be able to develop new therapeutic strategies enabling improved regeneration and liver function in chronic liver disease.

APPROACH

Based on human samples, experimental models of liver disease, and in vitro systems with primary cells and stem cells, the group seeks to identify the factors responsible for impaired regeneration of the liver and the mechanisms that alter tissue repair.

Within this context, it is particularly interested in studying cellular plasticity and maintaining the identity of liver cells in response to damage and disease, as well as in the mechanisms and factors that promote inflammation and hepatic fibrosis.

IMPACT

The group has described key mechanisms involved in the progression of chronic liver disease and identified potential new therapeutic targets.

One of the main findings of the group has been the association of impaired liver regeneration and proliferation of immature cells with an increase in liver inflammation and a poor outcome of the patients. In addition, the group has described the methodology to obtain hepatic stellate cells from pluripotent stem cells and showed their potential for disease modelling.

RESEARCH LINES

- In vitro disease modeling.

- Liver cell plasticity.

- Mechanisms of liver inflammation and fibrosis.

PUBLICATIONS

Originals / I.F.: 21.712

1. Pose E, Coll M, Martínez-Sánchez C, Zeng Z, Surewaard BGJ, Català C, Velasco M, Lozano J, Ariño S, Fuster D, Niñerola-Bazán A, Graupera I, Muñoz É, Lozano F, Sancho-Bru P, Kubes P, Ginès P. **PD-L1 is overexpressed in liver macrophages in chronic liver diseases and its blockade improves the antibacterial activity against infections.** *Hepatology*. I.F.: 14.679

2. Chen J, Argemi J, Odena G, Xu MJ, Cai Y, Massey V, Parrish A, Vadigepalli R, Altamirano J, Cabezas J, Gines P, Caballeria J, Snider N, Sancho-Bru P, Akira S, Rusyn I, Gao B, Bataller R. **Hepatic lipocalin 2 promotes liver fibrosis and portal hypertension**. *Scientific Reports*. 10(1):15558. I.F.: 3.998

3. Palma E, Riva A, Moreno C, Odena G, Mudan S, Manyakin N, Miquel R, Degré D, Trepo E, Sancho-Bru P, Altamirano J, Caballeria J, Zamalloa A, Menon K, Heaton N, Williams R, Bataller R, Chokshi S. **Perturbations in mitochondrial dynamics are closely involved in the progression of Alcoholic Liver Disease.** *Alcoholism-Clinical and Experimental Research*. 44(4):856-865. I.F.: 3.035

GRANTS FOR RESEARCH IN PROGRESS

Sancho-Bru P. **Cèl·lules hepàtiques estrellades per aplicacions biomèdiques i tecnològiques.**
Sponsored by: Generalitat de Catalunya.
2019_PROD_00055
Duration: 23/07/2020-22/01/2022

Sancho-Bru P. **Mecanismos implicados en la deficiente reparación tisular del hígado en enfermedades crónicas hepáticas. Nuevas dianas terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00673
Duration: 01/01/2018-30/06/2021

Sancho-Bru P. **Desarrollo de una herramienta de cribado de nuevos fármacos para el tratamiento de la enfermedad hepática crónica a partir de un sistema in vitro hepático organotípico derivado de iPSC.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_DTS18/00088
Duration: 01/01/2019-31/12/2021

Sancho-Bru P. **Understanding hepatoblastoma to design new personalized treatments.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_Proyectos19
Duration: 01/12/2019-30/11/2022

Sancho-Bru P. **Liver-enriched Transcription Factors as Prognostic Markers and Therapeutic Targets in Alcoholic Hepatitis.**
Sponsored by: National Institutes of Health.
INT_NIH_AA-18-003
Duration: 22/09/2018-30/06/2023

3.27 Pathogenesis and treatment of autoimmunity

LOCATION
CEK building, floor 5

KEYWORDS
1. **Autoimmunity**
2. **Diabetes**
3. **Nanoparticle**
4. **Tolerance**
5. **T-cell development**
6. **T-cell re-programming**
7. **Epigenetics**

RELATED DISEASES
1. **Diabetes**
2. **Multiple sclerosis**
3. **Inflammatory bowel disease**
4. **Obesity**
5. **Systemic lupus erythematosus**
6. **Rheumatoid arthritis**
7. **Psoriasis**
8. **Uveitis**
9. **Sjogren's disease**

GROUP INVOLVED IN
AGAUR_SGR17: 00338
RETIC RD16/0015/0020

Original publications

TOTAL	3
IF	26,29
Mean IF	8,76
Q1	67%
D1	33%
MA	33%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Pere Santamaria (IDIBAPS)
T. 93 227 54 00 (Ext.: 4558)
pesantam@clinic.cat

RESEARCHERS
Pau Serra (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Edgar Angelats (IDIBAPS)
Maria Nahir Garabatos (IDIBAPS)
Meritxell Tort (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Antonio Jesús Blanco (IDIBAPS)
Josep Garnica (IDIBAPS)
José Javier Montaño (IDIBAPS)
Daniel Parras (IDIBAPS)
Patricia Solé (IDIBAPS)

TECHNICIANS
Juan Antonio Arranz (IDIBAPS)
César Fandos (IDIBAPS)
Rocío Martín Álvarez (IDIBAPS)
Sandra Pérez Ramos (IDIBAPS)

ADMINISTRATIVE STAFF
Mireia Ortega (IDIBAPS)

PROBLEM

Autoimmune diseases such as type 1 diabetes (T1D), multiple sclerosis (MS) and many others result from chronic autoimmune responses involving T- and B-cells recognizing numerous antigenic epitopes on incompletely defined lists of autoantigens.

Eliminating or suppressing all polyclonal autoreactive T-cell specificities (known and unknown) in each individual autoimmune disorder without compromising systemic immunity is not currently possible.

Our group focusses on a new class of drugs, based on nanomedicine, that can comprehensively blunt several experimental autoimmune diseases without compromising normal immunity to infections and cancer.

We investigate the underlying mechanisms, in particular the molecular changes that result in the conversion of pathogenic T-cells into disease-suppressing progeny, with a major focus on mice humanized with peripheral blood mononuclear cells or hematopoietic stem cells. In addition, we enumerate the presence of, and clone autoantigen-specific T-cell specificities in patients with various autoimmune diseases.

APPROACH

We employ peptide-major histocompatibility complex-based nanomedicines to elicit the formation of disease-specific immunoregulatory cell networks in vivo, both in experimental animal models of autoimmune disease as well as in humanized mice.

In addition, we study the developmental biology of diabetogenic T cell specificities in transgenic mice in the presence/absence of genetic modifications of the antigen-presenting machinery in both thymic and peripheral antigen-presenting cells.

We use a variety of approaches to identify target epitope specificities of both murine and human autoreactive T-cells.

IMPACT

Our approach offers a new class of drugs potentially capable of treating many autoimmune diseases without impairing normal immunity. In addition, these drugs re-program cognate autoreactive T-cells into regulatory cells followed by the formation of multi-cellular regulatory cell networks.

Studies of this process at the transcriptional and epigenetic level provides clues about these new cellular lineages and the underlying mechanisms. A major focus is on translational aspects of these processes, using humanized mice as a tool.

RESEARCH LINES

- Advancing antigen-specific nanomedicines for the treatment of organ-specific and systemic autoimmune diseases.

- Engineering of recombinant peptide-major histocompatibility complexes suitable for eliciting autoreactive T-regulatory type 1 cells in vivo.

- Lineage-specification of pMHC-NP-induced antigen-specific T-regulatory type 1 (TR1) cells.

- Phenotypic, transcriptional and epigenetic make up of pMHC-NP-induced human autoantigen-specific TR1 cells in humanized mouse models.

- Role of autophagy in autoantigen presentation during T-cell ontogeny and autoimmunity.

PUBLICATIONS

Originals / I.F.: 26.292

1. Umeshappa, Channakeshava Sokke; Mbongue, Jacques; Singha, Santiswarup; Mohapatra, Saswat; Yamanouchi, Jun; Lee, Justin A; Nanjundappa, Roopa Hebbandi; Shao, Kun; Christen, Urs; Yang, Yang; Ellestad, Kristofor K; Santamaria, Pere. **Ubiquitous antigen-specific T regulatory type 1 cells variably suppress hepatic and extrahepatic autoimmunity.** *Journal of Clinical Investigation.* 130(4):1823-1829. I.F.: 11.864

2. Tang S; Zhang M; Zeng S; Huang Y; Qin M; Nasri U; Santamaria P; Riggs AD; Jin L; Zeng D. **Reversal of autoimmunity by mixed chimerism enables reactivation of β cells and transdifferentiation of α cells in diabetic NOD mice.** *Proceedings of the National Academy of Sciences of the United States of America.* 117(49):31219-31230. I.F.: 9.412

3. Jamaleddine H; Santamaria P; Khadra A. **Quantifying immunoregulation by autoantigen-specific T-regulatory type 1 cells in mice with simultaneous hepatic and extra-hepatic autoimmune disorders.** *Immunology.* 161(3):209-229. I.F.: 5.016

GRANTS FOR RESEARCH IN PROGRESS

Santamaria P. **Grup de Recerca en autoimmunitat.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00338
Duration: 01/01/2017-30/09/2021

Santamaria P. **Red Temática de Investigación Cooperativa en Salud - Esclerosis múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0015/0020
Duration: 01/01/2017-31/12/2021

Santamaria P. **pMHC-based nanomedicines for the treatment of progressive multiple sclerosis.**
Sponsored by: Asociación Esclerosis Múltiple España. FCRB_5401-20
Duration: 01/07/2020-30/06/2022

Santamaria P, Serra P. **The role of autophagy in central tolerance and peripheral activation of diabetogenic T-cells.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
MCIU_RTI2018-093964-B-I00
Duration: 01/01/2019-31/12/2021

Santamaria P. **Decision on optimal combinatorial therapies in imids using systems approaches.**
Sponsored by: European Commission.
CE_H2020-SC1_2019_2s
Duration: 01/01/2020-31/12/2024

DOCTORAL THESES

Santamaria P, Serra P. **Transcriptional and epigenetic re-programming of autoantigen-specific CD4+ T-cells by pMHC class II-based nanomedicines.**
PhD student: Patricia Solé Sánchez

3.28 Translational research in diabetes, lipids and obesity

LOCATION
CEK building, floor 5

KEYWORDS
1. **Type 1 diabetes**
2. **Type 2 diabetes**
3. **Obesity**
4. **Dyslipidaemia**
5. **Nutrition**
6. **Bariatric surgery**

RELATED DISEASES
1. **Type 1 diabetes**
2. **Type 2 diabetes**
3. **Obesity**
4. **Dyslipidaemia**

GROUP INVOLVED IN
AGAUR_SGR17: 01166
CIBERDEM

Original publications

TOTAL	34
IF	182,57
Mean IF	5,37
Q1	74%
D1	15%
MA	32%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep Vidal (HCB)
T. 93 227 57 39
jovidal@clinic.cat

EMERITUS
Ramon Gomis (IDIBAPS)

RESEARCHERS
Ignacio Conget (HCB)
Ana María De Hollanda (HCB)
Enric Esmatjes (HCB)
Lilliam Flores (HCB)
Rosa Maria Gasa (IDIBAPS)
Margarita Giménez Álvarez (IDIBAPS)
Amanda Jiménez Pineda (IDIBAPS)
Emilio Ortega (HCB)

ASSISTANT RESEARCHERS
Montserrat Cofán (CIBER)
Rebeca Fernández Ruíz (CIBER)

POST-DOCTORAL RESEARCHERS
Gemma Chiva Blanch (CIBEROBN)
Marta Fontcuberta (IDIBAPS)
Violeta Moize (HCB)
Óscar Osorio (CIBER)

TECHNICIANS
Ainhoa García Alamán (CIBER)
Èlia Prades (FCRB)

NURSING STAFF
Judith Viaplana (FCRB)

PROBLEM

Metabolic diseases constitute one of the main health problems in our society. Diabetes, dyslipidaemia and obesity are highly prevalent diseases that are also risk factors for cardiovascular disease, cognitive deterioration and certain types of cancer.

Characterizing these diseases correctly, understanding why they can lead to other severe diseases, and designing better treatments for them, are priorities.

APPROACH

The group carries out research on diabetes (type 1, type 2 and other forms), obesity and dyslipidaemia from the perspective of epidemiology, clinical research and laboratory research. In studies in humans, it uses a broad range of clinical and metabolic characterization techniques, vascular ultrasound, neuroimaging, molecular techniques and computational techniques.

It integrates this information to provide a better description of the diseases in their field of research, with the understanding that thorough knowledge of the diseases is the basis for effective, personalized medicine. The group also uses this information to improve currently available treatments. Finally, it seeks new therapeutic alternatives based on cell-biology studies and studies in animal models. The group's goal is to translate this knowledge obtained in the laboratory into clinical practice in the near future.

The group consists of a multidisciplinary research team of biologists, physicians, nutritionists and nurses, and creates ad hoc teams based on the questions to be answered at any given moment. It also works in collaboration with other IDIBAPS groups and with groups from other universities around the country.

IMPACT

Improving knowledge of diseases with a high prevalence is a priority for the group if we want the healthcare system to be sustainable.

RESEARCH LINES

- Nutrition, obesity, diabetes, and cardiovascular disease: from epidemiology to mechanistic studies.

- Detection of atherosclerosis: a road to personalized medicine in dyslipidemia and diabetes.

- Monogenic forms of diabetes.

- Impact of bariatric surgery on health.

- Advanced therapies for type 1 diabetes. The artificial pancreas concept.

- Hypoglycemia and its consequences in patients with diabetes.

- Regenerative medicine strategies to treat beta cell deficiency in diabetes.

- Advancing antigen-specific nanomedicines for the treatment of type 1 diabetes.

PUBLICATIONS

Originals / I.F.: 182.572

1. Lázaro I; Rueda F; Cediel G; Ortega E; García-García C; Sala-Vila A; Bayés-Genís A. **Circulating Omega-3 Fatty Acids and Incident Adverse Events in Patients With Acute Myocardial Infarction.** *Journal of the American College of Cardiology.* 76(18):2089-2097. I.F.: 20.589

2. Aminian A, Vidal J, Salminen P, Still CD, Nor Hanipah Z, Sharma G, Tu C, Wood GC, Ibarzabal A, Jimenez A, Brethauer SA, Schauer PR, Mahawar K. **Late Relapse of Diabetes After Bariatric Surgery: Not Rare, but Not a Failure.** *Diabetes Care.* 43(3):534-540. I.F.: 16.019

3. Fernandez-Ruiz R; García-Alamán A; Esteban Y; Mir-Coll J; Serra-Navarro B; Fontcuberta-PiSunyer M; Broca C; Armanet M; Wojtusciszyn A; Kram V; Young MF; Vidal J; Gomis R; Gasa R. **Wisp1 is a circulating factor that stimulates proliferation of adult mouse and human beta cells.** *Nature Communications.* 11(1):5982. I.F.: 12.121

4. Amor AJ, Castelblanco E, Hernández M, Gimenez M, Granado-Casas M, Blanco J, Soldevila B, Esmatjes E, Conget I, Alonso N, Ortega E, Mauricio D. **Advanced lipoprotein profile disturbances in type 1 diabetes mellitus: a focus on LDL particles.** *Cardiovascular Diabetology.* 19(1):126. I.F.: 7.332

5. Martínez-González MA; Fernandez-Lazaro CI; Toledo E; Díaz-López A; Corella D; Goday A; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA; Serra-Majem L; Estruch R; Tinahones FJ; Lapetra J; Pintó X; Tur JA; López-Miranda J; Cano-Ibáñez N; Delgado-Rodríguez M; Matía-Martín P; Daimiel L; Sánchez VM; Vidal J; Vázquez C; Ros E; Buil-Cosiales P; Portoles O; Soria-Florido M; Konieczna J; Navarrete-Muñoz EM; Tojal-Sierra L; Fernández-García JC; Abete I; Henríquez-Sánchez P; Muñoz-Garach A; Santos-Lozano JM; Corbella E; Bibiloni MDM; Becerra-Tomás N; Martínez-González MA; Fernandez-Lazaro CI; Toledo E; Díaz-López A; Corella D; Goday A; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA. **Carbohydrate quality changes and concurrent changes in cardiovascular risk factors: a longitudinal analysis in the PREDIMED-Plus randomized trial.** *American Journal of Clinical Nutrition.* 111(2):291-306. I.F.: 6.766

6. Cano-Ibáñez N; Gea A; Ruiz-Canela M; Corella D; Salas-Salvadó J; Schröder H; Navarrete-Muñoz EM; Romaguera D; Martínez JA; Barón-López FJ; López-Miranda J; Estruch R; Riquelme-Gallego B; Alonso-Gómez Á; Tur JA; Tinahones FJ; Serra-Majem L; Martín V; Lapetra J; Vázquez C; Pintó X; Vidal J; Daimiel L; Gaforio JJ; Matía P; Ros E; Fernández-Carrión R; Díaz-López A; Zomeño MD; Candela I; Konieczna J; Abete I; Buil-Cosiales P; Basora J; Fitó M; Martínez-González MA; Bueno-Cavanillas A. Diet quality and nutrient density in subjects with metabolic syndrome: Influence of socioeconomic status and lifestyle factors. **A cross-sectional assessment in the PREDIMED-Plus study.** *Clinical Nutrition.* 39(4):1161-1173. I.F.: 6.360

7. Bibiloni MdM; Bouzas C; Abbate M; Martínez-González MA; Corella D; Salas-Salvadó J; Zomeño MD; Vioque J; Romaguera D; Martínez JA; Wärnberg J; López-Miranda J; Estruch R; Bueno-Cavanillas A; Alonso-Gómez Á; Tinahones F; Serra-Majem L; Martín V; Lapetra J; Vázquez C; Pintó X; Vidal J; Daimiel L; Delgado-Rodríguez M; Matía P; Ros E; Fernández-Carrión R; Garcia-Rios A; Zulet MA; Asensio A; Schröder H; Fitó M; Becerra-Tomás N; Basora J; Cenoz JC; Diez-Espino J; Toledo E; Tur JA. **Nutrient adequacy and diet quality in a Mediterranean population with metabolic syndrome: A cross-sectional study.** *Clinical Nutrition.* 39(3):853-861. I.F.: 6.360

8. Fuentes GC; Castañer O; Warnberg J; Subirana I; Buil-Cosiales P; Salas-Salvadó J; Corella D; Serra-Majem L; Romaguera D; Estruch R; Martínez JA; Pintó X; Vázquez C; Vidal J; Tur JA; Arós F; Bullo M; Fitó M; Schröder H. **Prospective association of physical activity and inflammatory biomarkers in older adults from the PREDIMED-Plus study with overweight or obesity and metabolic syndrome.** *Clinical Nutrition.* 39(10):3092-3098. I.F.: 6.360

9. Díaz-Rizzolo D; Kostov B; López-Siles M; Serra A; Colungo C; González-de-Paz L; Martinez-Medina M; Sisó-Almirall A; Gomis R. **Healthy dietary pattern and their corresponding gut microbiota profile are linked to a lower risk of type 2 diabetes, independent of the presence of obesity.** *Clinical Nutrition.* 39(2):524-532. I.F.: 6.360

10. Amor AJ; Vinagre I; Valverde M; Pané A; Urquizu X; Meler E; López E; Quirós C; Giménez M; Codina L; Conget I; Barahona MJ; Perea V. **Preeclampsia Is Associated With Increased Preclinical Carotid Atherosclerosis in Women With Type 1 Diabetes.** *Journal of Clinical Endocrinology & Metabolism.* 105(1):dgz031. I.F.: 5.399

11. Martín-Campos JM; Ruiz-Nogales S; Ibarretxe D; Ortega E; Sánchez-Pujol E; Royuela-Juncadella M; Vila À; Guerrero C; Zamora A; Soler i Ferrer C; Arroyo JA; Carreras G; Martínez-Figueroa S; Roig R; Plana N; Blanco-Vaca F. **Polygenic markers in patients diagnosed of autosomal dominant hypercholesterolemia in Catalonia: Distribution of weighted LDL-c-raising SNP scores and refinement of variant selection.** *Biomedicines.* 8(9):353. I.F.: 4.717

12. Cano-Ibáñez N, Bueno-Cavanillas A, Martínez-González MÁ, Salas-Salvadó J, Corella D, Freixer GL, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Tinahones FJ, Lapetra J, Pintó X, Tur JA, García-Ríos A, García-Molina L, Delgado-Rodríguez M, Matía-Martín P, Daimiel L, Martín-Sánchez V, Vidal J, Vázquez C, Ros E, Bartolomé-Resano J, Palau-Galindo A, Portoles O, Torres L, Miquel-Fiol , Sánchez MTC, Sorto-Sánchez C, Moreno-Morales N, Abete I, Álvarez-Pérez J, Sacanella E, Bernal-López MR, Santos-Lozano JM, Fanlo-Maresma M, Bouzas C, Razquin C, Becerra-Tomás N, Ortega-Azorin C, LLimona R, Morey M, Román-Maciá J, Goicolea-Güemez L, Vázquez-Ruiz Z, Barrubés L, Fitó M, Gea A . **Effect of changes in adherence to Mediterranean diet on nutrient density**

after 1-year of follow-up: results from the PREDIMED-Plus Study. *European Journal of Nutrition.* 59(6):2395-2409. I.F.: 4.664

13. Alvarez-Alvarez I; Toledo E; Lecea O; Salas-Salvadó J; Corella D; Buil-Cosiales P; Zomeño MD; Vioque J; Martinez JA; Konieczna J; Barón-López FJ; López-Miranda J; Estruch R; Bueno-Cavanillas A; Alonso-Gómez ÁM; Tur JA; Tinahones FJ; Serra-Majem L; Martín V; Ortega-Calvo M; Vázquez C; Pintó X; Vidal J; Daimiel L; Delgado-Rodríguez M; Matía P; González JI; Díaz-López A; Paz-Graniel I; Muñoz MA; Fito M; Pertusa-Martinez S; Abete I; García-Ríos A; Ros E; Ruiz-Canela M; Martínez-González M. **Adherence to a priori dietary indexes and baseline prevalence of cardiovascular risk factors in the PREDIMED-Plus randomised trial.** *European Journal of Nutrition.* 59(3):1219-1232. I.F.: 4.664

14. Paz-Graniel I, Babio N, Becerra-Tomás N, Toledo E, Camacho-Barcia L, Corella D, Castañer-Niño O, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Tinahones FJ, Fernandez-Aranda F, Lapetra J, Pintó X, Tur JA, García-Rios A, Bueno-Cavanillas A, Gaforio JJ, Matía-Martín P, Daimiel L, Sánchez VM, Vidal J, Prieto-Sanchez L, Ros E, Razquin C, Mestres C, Sorli JV, Cuenca-Royo AM, Rios A, Torres-Collado L, Vaquero-Luna J, Pérez-Farinós N, Zulet MA, Sanchez-Villegas A, Casas R, Bernal-Lopez MR, Santos-Lozano JM, Corbella X, Mateos D, Buil-Cosiales P, Jiménez-Murcia S, Fernandez-Carrion R, Forcano-Gamazo L, López M, Sempere-Pascual MÁ, Moreno-Rodriguez A, Gea A, de la Torre-Fornell R, Salas-Salvadó J, PREDIMED-Plus Investigators. **Association between coffee consumption and total dietary caffeine intake with cognitive functioning: cross-sectional assessment in an elderly Mediterranean population.** *European Journal of Nutrition.* I.F.: 4.664

15. Becerra-Tomás N, Mena-Sánchez G, Díaz-López A, Martínez-González MÁ, Babio N, Corella D, Freixer G, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Fernández-García JC, Lapetra J, Pintó X, Tur JA, López-Miranda J, Bueno-Cavanillas A, Gaforio JJ, Matía-Martín P, Daimiel L, Martín-Sánchez V, Vidal J, Vázquez C, Ros E, Razquin C, Abellán Cano I, Sorli JV, Torres L, Morey M, Navarrete-Muñoz EM, Tojal Sierra L, Crespo-Oliva E, Zulet MÁ, Sanchez-Villegas A, Casas R, Bernal-Lopez MR, Santos-Lozano JM, Corbella E, Del Mar Bibiloni M, Ruiz-Canela M, Fernández-Carrión R, Quifer M, Prieto RM, Fernandez-Brufal N, Salaverria Lete I, Cenoz JC, Llimona R, Salas-Salvadó J, PREDIMED-Plus Investigators. **Cross-sectional association between non-soy legume consumption, serum uric acid and hyperuricemia: the PREDIMED-Plus study.** *European Journal of Nutrition.* 59(5):2195-2206. I.F.: 4.664

16. Chiva-Blanch G; Jiménez C; Pinyol M; Herreras Z; Catalán M; Martínez-Huélamo M; Lamuela-Raventos RM; Sala-Vila A; Cofán M; Gilabert R; Jiménez A; Ortega E. **5-CIS-, trans-and total lycopene plasma concentrations inversely relate to atherosclerotic plaque burden in newly diagnosed type 2 diabetes subjects.** *Nutrients.* 12(6):1696. I.F.: 4.546

17. Castro-Barquero S; Tresserra-Rimbau A; Vitelli-Storelli F; Doménech M; Salas-Salvadó J; Martín-Sánchez V; Rubín-García M; Buil-Cosiales P; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA; Serra-Majem L; Tinahones FJ; Lapetra J; Pintó X; Tur JA; Garcia-Rios A; García-Molina L; Delgado-Rodriguez M; Matía-Martín P; Daimiel L; Vidal J; Vázquez C; Cofán M; Romanos-Nanclares A; Becerra-Tomas N; Barragan R; Castañer O; Konieczna J; González-Palacios S; Sorto-Sánchez C; Pérez-López J; Zulet MA; Bautista-Castaño I; Casas R; Gómez-Perez AM; Castro-Barquero S; Tresserra-Rimbau A; Vitelli-Storelli F; Doménech M; Salas-Salvadó J; Martín-Sánchez V; Rubín-García M; Buil-Cosiales P; Corella D; Fitó M; Romaguera D; Vioque J; Alonso-Gómez ÁM; Wärnberg J; Martínez JA. **Dietary polyphenol intake is associated with HDL-cholesterol and a better profile of other components of the metabolic syndrome: A PREDIMED-plus sub-study.** *Nutrients.* 12(3):689. I.F.: 4.546

18. Papandreou C; Bulló M; Díaz-López A; Martínez-González MA; Corella D; Castañer O; Vioque J; Romaguera D; Martínez AJ; Pérez-Farinós N; López-Miranda J; Estruch R; Bueno-Cavanillas A; Alonso-Gómez A; Tur JA; Tinahones FJ; Serra-Majem L; Martin V; Lapetra J; Vazquez C; Pintó X; Vidal J; Damiel L; Delgado-Rodriguez M; Ros E; Abete I; Barón-López J; Garcia-Arellano A; Sorli JV; Babio N; Schröder H; Toledo E; Fitó M; Salas-Salvadó J. **High sleep variability predicts a blunted weight loss response and short sleep duration a reduced decrease in waist circumference in the PREDIMED-Plus Trial.** *International Journal of Obesity.* 44(2):330-339. I.F.: 4.419

19. Mesa A; Viñals C; Pueyo II; Roca D; Vidal M; Giménez M; Conget I. **The impact of strict COVID-19 lockdown in Spain on glycemic profiles in patients with type 1 Diabetes prone to hypoglycemia using standalone continuous glucose monitoring.** *Diabetes Research and Clinical Practice.* 167:108354. I.F.: 4.234

20. Ruiz S; Amor AJ; Pané A; Molina-Andujar A; Montagud-Marrahi E; Ventura-Aguiar P; Ferrer-Fàbrega J; Esmatjes E. **Cardiovascular risk factors and cardiovascular disease in patients with type 1 diabetes and end-stage renal disease candidates for kidney-pancreas transplantation: Trends from 1999 to 2017.** *Diabetes Research and Clinical Practice.* 163:108135. I.F.: 4.234

21. Daimiel L; Martínez-González MA; Corella D; Salas-Salvadó J; Schröder H; Vioque J; Romaguera D; Martínez JA; Wärnberg J; Lopez-Miranda J; Estruch R; Cano-Ibáñez N; Alonso-Gómez A; Tur JA; Tinahones FJ; Serra-Majem L; Micó-Pérez RM; Lapetra J; Galdón A; Pintó X; Vidal J; Micó V; Colmenarejo G; Gaforio JJ; Matía P; Ros E; Buil-Cosiales P; Vázquez-Ruiz Z; Sorlí JV; Graniel IP; Cuenca-Royo A; Gisbert-Sellés C; Galmes-Panades AM; Zulet MA; García-Ríos A; Díaz-López A; de la Torre R; Galilea-Zabalza I; Ordovás JM. **Physical fitness and physical activity association with cognitive function and quality of life: baseline cross-sectional analysis of the PREDIMED-Plus trial.** *Scientific Reports.* 10(1):3472. I.F.: 3.998

22. Rojo-Martínez G; Valdés S; Soriguer F; Vendrell J; Urrutia I; Pérez V; Ortega E; Ocón P; Montanya E; Menéndez E; Lago-Sampedro A; González- Frutos T; Gomis R; Goday A; García-Serrano S; García-Escobar E; Galán-García JL; Castell C; Badía-Guillén R; Aguilera-Venegas G; Girbés J; Gaztambide S; Franch-Nadal J; Delgado E; Chaves FJ; Castaño L; Calle-Pascual A. **Incidence of diabetes mellitus in Spain as results of the nation-wide cohort di@bet.es study.** *Scientific Reports.* 10(1):2765. I.F.: 3.998

23. Fernandez-Garcia, Jose Carlos; Munoz-Garach, Araceli; Martinez-Gonzalez, Miguel angel; Salas-Salvado, Jordi; Corella,

Dolores; Hernaez, Alvaro; Romaguera, Dora; Vioque, Jesus; Alonso-Gomez, Angel M; Warnberg, Julia; Martinez, J Alfredo; Serra-Majem, Luis; Estruch, Ramon; Lapetra, Jose; Pinto, Xavier; Tur, Josep A; Garcia-Rios, Antonio; Garcia Molina, Laura; Gaforio, Jose Juan; Matia-Martin, Pilar; Daimiel, Lidia; Martin Sanchez, Vicente; Vidal, Josep; Prieto, Lucia; Ros, Emilio; Goni, Nuria; Babio, Nancy; Ortega-Azorin, Carolina; Castaner, Olga; Konieczna, Jadwiga; Notario Barandiaran, Leyre; Vaquero-Luna, Jessica; Benavente-Marin, Juan Carlos; Zulet, M Angeles; Sanchez-Villegas, Almudena; Sacanella, Emilio; Gomez Huelgas, Ricardo; Miro-Moriano, Leticia; Gimenez-Gracia, Mariano; Julibert, Alicia; Razquin, Cristina; Basora, Josep; Portoles, Olga; Goday, Albert; Galmes-Panades, Aina M; Lopez-Garcia, Carmen M; Moreno-Rodriguez, Anai; Toledo, Estefania; Diaz-Lopez, Andres; Fito, Montserrat; Tinahones, Francisco J; Bernal-Lopez, M Rosa; PREDIMED-Plus Investigators. **Association Between Lifestyle and Hypertriglyceridemic Waist Phenotype in the PREDIMED-Plus Study.** *Obesity*. 28(3):537-543. I.F.: 3.742

24. Mena-Sánchez G, Babio N, Becerra-Tomás N, Martínez-González MÁ, Díaz-López A, Corella D, Zomeño MD, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Bernal R, Lapetra J, Pintó X, Tur JA, Lopez-Miranda J, Cano-Ibáñez N, Gaforio JJ, Matía-Martín P, Daimiel L, Caro JLL, Vidal J, Vázquez C, Ros E, Arellano AG, Palau A, Fernández-Carrión R, Pérez-Vega KA, Morey M, de la Hera MG, Vaquero-Luna J, Carmona-González FJ, Abete I, Álvarez-Pérez J, Casas R, Fernández-García JC, Santos-Lozano JM, Corbella E, Sureda A, Ruiz-Canela M, Barragán R, Goday A, Martín M, Altozano Rodado MC, Toledo E, Fitó M, Salas-Salvadó J, PREDIMED-PLUS investigators. **Association between dairy product consumption and hyperuricemia in an elderly population with metabolic syndrome.** *Nutrition Metabolism and Cardiovascular Diseases*. 30(2):214-222. I.F.: 3.700

25. Andreu A; Jimenez A; Vidal J; Ibarzabal A; De Hollanda A; Flores L; Cañizares S; Molero J; Moizé V. **Bariatric Support Groups Predicts Long-term Weight Loss.** *Obesity Surgery*. 30(6):2118-2123. I.F.: 3.412

26. Molero, Judit; Moize, Violeta; Flores, Lilliam; De Hollanda, Ana; Jimenez, Amanda; Vidal, Josep. **The Impact of Age on the Prevalence of Sarcopenic Obesity in Bariatric Surgery Candidates.** *Obesity Surgery*. 30(6):2158-2164. I.F.: 3.412

27. Viñals C; Conget I; Pané A; Boswell L; Perea V; Blanco AJ; Ruiz S; Giménez M; Vinagre I; Esmatjes E; Ortega E; Amor AJ. **Steno type 1 risk engine and preclinical atherosclerosis in Mediterranean individuals with type 1 diabetes.** *Diabetes-Metabolism Research and Reviews*. I.F.: 3.314

28. De Hollanda, Ana; Lecube, Albert; Angel Rubio, Miguel; Sanchez, Enric; Vilarrasa, Nuria; Gregorio Oliva, Jose; Luisa Fernandez-Soto, Maria; Salas-Salvado, Jordi; Ballesteros-Pomar, Maria D; Ciudin, Andreea; Torres, Ferran; Vidal, Concepcion; Jose Morales, Maria; Valdes, Sergio; Pellitero, Silvia; Minambres, Inka; Masmiquel, Lluis; Goday, Albert; Suarez, Lorena; Flores, Liliam; Bueno, Marta; Caixas, Assumpta; Breton, Irene; Camara, Rosa; Olbeyra, Romina; Penso, Rona; Jose de la Cruz, Maria; Simo-Servat, Andreu; Maria Pereyra-Garcia, Francisca; Teresa Lopez-Mezquita, Elena; Gils, Anna; Fidilio, Enzamaria; Bandres, Orosia; Martinez, Angel; Abuin, Jose; Marques-Pamies, Montserrat; Tuneu, Laura; Arteaga, Magdalena; Castaner, Olga; Goni, Fernando; Arrizabalaga, Cristina; Antonio Botana, Manuel; Calanas, Alfonso; Rebollo, Angel. **New Metrics to Assess Type 2 Diabetes after Bariatric Surgery: The Time-Within-Remission Range.** *Journal of Clinical Medicine*. 9(4):1070. I.F.: 3.303

29. Montagud-Marrahi, Enrique; Molina-Andujar, Alicia; Pane, Adriana; Jose Ramirez-Bajo, Maria; Amor, Antonio; Esmatjes, Enric; Ferrer, Joana; Musquera, Mireia; Diekmann, Fritz; Ventura-Aguiar, Pedro. **Outcomes of pancreas transplantation in older diabetic patients.** *Bmj Open Diabetes Research & Care*. 8(1):e000916. I.F.: 3.183

30. Cuesta M, Fuentes M, Rubio M, Bordiu E, Barabash A, Garcia de la Torre N, Rojo-Martinez G, Valdes S, Soriguer F, Vendrell JJ, Urrutia IM, Ortega E, Montanya E, Menendez E, Lago-Sampedro A, Gomis R, Goday A, Castell C, Badia-Guillen R, Girbés J, Gaztambide S, Franch-Nadal J, Delgado Álvarez E, Chaves FJ, Castano L, Calle-Pascual AL. **Incidence and regression of metabolic syndrome in a representative sample of the Spanish population: results of the cohort di@bet.** *Bmj Open Diabetes Research & Care*. 8(1):e001715. I.F.: 3.183

31. Bratseth, Vibeke; Margeirsdottir, Hanna D; Chiva-Blanch, Gemma; Heier, Martin; Solheim, Svein; Arnesen, Harald; Dahl-Jorgensen, Knut; Seljeflot, Ingebjorg. **Annexin V+ Microvesicles in Children and Adolescents with Type 1 Diabetes: A Prospective Cohort Study.** *Journal of Diabetes Research*. I.F.: 2.965

32. Barraso M, Alé-Chilet A, Hernández T, Oliva C, Vinagre I, Ortega E, Figueras-Roca M, Sala-Puigdollers A, Esquinas C, Esmatjes E, Adán A, Zarranz-Ventura J. **Optical Coherence Tomography Angiography in Type 1 Diabetes Mellitus.** *Translational Vision Science & Technology*. 9(10):34. I.F.: 2.112

33. Cabré C, Colungo C, Vinagre I, Jansà M, Conget I. **Frequency and awareness of hypoglycemia in patients with Type 2 Diabetes treated with two or more insulin injections in primary care outpatient clinics.** *Primary Care Diabetes*. 14(2):168-172. I.F.: 2.052

34. Vidal M; Jansà M; Roca D; Yoldi C; Cardona-Hernández R; Giménez M; Conget I. **Hypoglycaemia unawareness in young people with type 1 diabetes transferred to an adult center.** *Endocrinología Diabetes y Nutrición*. 67(6):394-400. I.F.: 1.180

Review / I.F.: 8.574

1. Amor AJ; Gómez-Guerrero C; Ortega E; Sala-Vila A; Lázaro I. **Ellagic acid as a tool to limit the diabetes burden: Updated evidence.** *Antioxidants*. 9(12):1226. I.F.: 5.014

2. Cornejo-Pareja IM, Gómez-Pérez AM, Fernández-García JC, Barahona San Millan R, Aguilera Luque A, de Hollanda A, Jiménez A, Jimenez-Murcia S, Munguia L, Ortega E, Fernandez-Aranda F, Fernández Real JM, Tinahones F. **Coronavirus disease 2019 (COVID-19) and obesity.** *European Eating Disorders Review*. 28(6):799-815. I.F.: 3.560

GRANTS FOR RESEARCH IN PROGRESS

Flores L. **Mecanismo de recompensa cerebral en la recuperación ponderal y el mantenimiento del peso perdido tras la gastrectomía tubular. Un estudio mutimodal con resonancia magnética funcional.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01138
Duration: 01/01/2020-31/12/2022

Gasa R, Gomis R. **Fibroblastos humanos como fuente de células productoras de insulina.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00896
Duration: 01/01/2020-31/12/2022

Gasa R. **Direct reprogramming of human fibroblasts towards insulin-producing cells.**
Sponsored by: European Foundation for the Study of Diabetes. INT_EFSD_GASA_17_001
Duration: 01/01/2018-31/12/2020

Giménez-Álvarez M. **Personalización de un sistema de páncreas artificial en pacientes con diabetes tipo 1 y alto riesgo cardiovascular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01865
Duration: 01/01/2020-31/12/2022

Hollanda A. **Efecte d'una dieta mediterrània complementada amb oli d#oliva extra verge o fruits secs sobre la funció del teixit adipós en persones amb obesitat greu.**
Sponsored by: Fundació Acadèmia de les Ciències Mèdiques. ACD_PROJECTES18_02
Duration: 06/04/2018-31/12/-

Jiménez-Pineda A. **Pre-clinical Alzheimer's disease and Type 2 diabetes and obesity. Effects of bariatric surgery: a multimodal study.**
Sponsored by: Fundació la Marató de TV3. Diabet_16
Duration: 10/03/2017-31/12/2020

Jiménez-Pineda A. **Inflamación hipotalámica en obesidad., Papel de la dieta y efectos de la cirugía bariátrica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00279
Duration: 01/01/2018-31/12/2021

Jiménez-Pineda A. **Walnuts as a means to reverse the metabolic alterations caused by the western type diet: The Akt-FOXO pathway in liver and adipose tissue.**
Sponsored by: Fundación SEEN. SEEN_JOVINV_18_01
Duration: 01/02/2019-31/01/2021

Ortega E. **Cambios en la microcirculación retiniana y carotidea tras restauración de normoglicemia en pacientes con diabetes tipo 2: angiografia retiniana mediante tomografía de coherencia óptica y ultrasonido carotideo con contraste.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01479
Duration: 01/01/2018-31/12/2021

Vidal J. **Diabetis: xarxes metabòliques i moleculars.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01166
Duration: 01/01/2017-30/09/2021

Vidal J. **PREDIMED+DM: Efecto de una pérdida de peso con dieta mediterránea hipocalórica y promoción de la actividad física en la prevención de diabetes tipo 2 en personas con síndrome metabólico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00215
Duration: 01/01/2018-30/09/2021

DOCTORAL THESES

Vidal J. **Consum de nous i envelliment saludable.**
PhD student: Tania Marisa Freitas Simoes

ANNUAL SCIENTIFIC REPORT 2020

AREA 4

CLINICAL
AND EXPERIMENTAL
NEUROSCIENCE



4

© Saül Pascual-Diaz

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

4.1 **Pathophysiology and treatment of neurodegenerative disorders**
Jordi Alberch

4.2 **Systems neuropharmacology**
Francesc Artigas

4.3 **Schizophrenia**
Miquel Bernardo

4.4 **Child and adolescent psychiatry and psychology**
Josefina Castro

4.5 **Brain ischemia: clinical and experimental studies**
Ángel Chamorro

4.6 **Theoretical neurobiology of cortical circuits**
Albert Compte

4.7 **Pathogenesis of autoimmune neuronal disorders**
Josep Dalmau

4.8 **Cortical circuit dynamics**
Jaime de la Rocha

4.9 **Neurophysiology**
Xavier Gasull

4.10 **Muscular research and mitochondrial function**
Josep Maria Grau

4.11 **Clinical addictions**
Antoni Gual

4.12 **Clinical neurophysiology**
Alejandro Iranzo

4.13 **Neuropsychology**
Carme Junqué

4.14 **Advanced imaging in neuroimmunological diseases (ImaginEM)**
Sara Llufriu

4.15 **Parkinson disease and other neurodegenerative movement disorders: clinical and experimental research**
M Josep Martí

4.16 **Molecular neuropharmacology**
Guadalupe Mengod

4.17 **Imaging of mood - and anxiety - related disorders (IMARD)**
Joaquim Raduà

4.18 **Alzheimer's disease and other cognitive disorders**
Raquel Sánchez-Valle

4.19 **Systems neuroscience**
Maria Victoria Sanchez Vives

4.20 **Mechanisms of neurotoxicity and neurodegeneration**
Coral Sanfeliu

4.21 **Cellular neurobiology**
Josep Saura

4.22 **Multimodal neuroimaging in high risk and early psychosis**
Gisela Sugranyes

4.23 **Neurobiology**
Ramon Trullàs

4.24 **Bipolar and depressive disorders**
Eduard Vieta

4.25 **Pathogenesis and new treatments in multiple sclerosis**
Pablo Villoslada

4.1 Pathophysiology and treatment of neurodegenerative disorders

LOCATION
CELLEX building, floor 3B
UB School of Medicine

KEYWORDS
1. **Huntington's disease**
2. **Motor and cognitive function**
3. **Psychiatric disturbances**
4. **Neuroprotection**
5. **Trophic factors**
6. **Neurodevelopment**
7. **Regenerative medicine**

RELATED DISEASES
1. **Huntington's disease**
2. **Schizophrenia**
3. **Chorea acanthocytosis**
4. **Stroke**

GROUP INVOLVED IN
AGAUR_SGR17: 01408, 01095
CIBERNED
HD-iPSCs Consortium
RETICS-Terapia Celular
Unit of Excellence María de Maeztu

Original publications

TOTAL	15
IF	112,20
Mean IF	7,48
Q1	80%
D1	27%
MA	67%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Jordi Alberch (UB)
T. 93 403 52 85
alberch@ub.edu

RESEARCHERS
Veronica Brito (UB)
Josep M. Canals (UB)
Daniel del Toro (UB)
Silvia Ginés (UB)
Albert Giralt (UB)
Mercè Masana (UB)
Esther Pérez Navarro (UB)
Daniel Tornero (UB)

ASSISTANT RESEARCHERS
Philip Gordon Thomas Sanders (UB)

POST-DOCTORAL RESEARCHERS
Andres Miguez (IDIBAPS-UB)

PRE-DOCTORAL RESEARCHERS
Carla Castany (UB)
Sara Conde (UB)
Marc Espina (IDIBAPS-UB)
Anna Guisado (UB)
Clelia Introna (UB)
Laura López Molina (UB)
Francisco José Molina (UB)
Anika Pupak (UB)
Ened Rodríguez Urgelles (UB)
Cristina Salado (UB)
Laia Sitjà (UB)
Cristina Vila (UB)

TECHNICIANS
Silvia Artigas (UB)
Georgina Bombau (UB)
Felipe Chiappe (UB)
Albert Coll (UB)
Mireia Galofre (UB)
Cristina Herranz (UB)
Andrea Honrubia (UB)
Ana Maria López Alonso (CIBER)
Verònica Monforte (UB)
Maite Muñoz (UB)
Myriam Olive (UB)
Unai Perpiña (UB)

ADMINISTRATIVE STAFF
Clara Farrés (UB)
Paola Lucero (UB)
David Vanneste (UB)

PROBLEM

The incidence of nervous system disorders has considerably increased in recent years owing to the higher life expectancy. These diseases not only cause suffering to patients and their families but also have a major social and economic impact.

Unfortunately, there is currently no treatment for halting neurodegenerative processes.

APPROACH

The group studies the pathophysiologic mechanisms involved in neuronal dysfunction and neurodegeneration in different brain areas, which cause impairment in motor activity and/or cognitive functions. Using new and innovative technology, these studies make it possible to design new gene, cell and drug therapies.

The group is using a multidisciplinary and translational approach to develop new treatments to halt or slow neurodegenerative processes in diseases such as Huntington´s disease, chorea acanthocytosis or stroke, and also to recover neuronal network activity in schizophrenia.

The group essentially uses two strategies to achieve this: neuroprotective therapies and neuro-regenerative therapies. The former are based on the study of the mechanisms that regulate neuronal plasticity, which maintain the connectivity of the neuron networks in different areas of the brain and neuronal function and survival to understand the cell-specific vulnerability in different neurodegenerative processes.

Neuro-regenerative therapies focus on the differentiation of human pluripotent stem cells and somatic stem cells in neurons with the same profile as those affected in Huntington disease. It is thus possible to perform transplants that replace the dead neurons and recover motor function.

IMPACT

The group has determined several intracellular pathways involved in neuronal function and plasticity within the basal ganglia and the hippocampus, which are abnormal in Huntington disease (BDNF/TrkB/p75, Cdk5, STEP, etc.).

This has allowed the group to identify new therapeutic targets and to develop new treatments that have been tested in preclinical studies in cellular and animals models. Some have already been used in international clinical trials.

Cell-therapy studies in Huntington disease have also advanced with the differentiation of human neurons with the structural and physiological characteristics of the neurons of the putamen/caudate nucleus, which can be transplanted to recover motor function.

RESEARCH LINES

- Neuronal connectivity in Huntington's disease and other basal ganglia disorders. *PI: Dr. Jordi Alberch*

- Epitranscriptomic regulation in brain disorders. *PI: Dr Veronica Brito*

- Stem cells and regenerative medicine. *PI: Dr. Josep M Canals*

- In vivo reprogramming during cortex development. *PI: Daniel del Toro*

- Glia-neuron crosstalk in Huntington's disease. *PI: Dr. Silvia Ginés*

- Neural plasticity in neurological and neuropsychiatric disorders. *PI: Albert Giralt*

- Modulation of neuronal circuitry in brain disorders. *PI: Dr. Mercè Masana*

- Kinases and phosphatases in neuronal function and dysfunction. *PI: Dr. Esther Pérez-Navarro*

- Neural Stem Cells and Brain Damage. *PI: Dr. Daniel Tornero*

PUBLICATIONS

Originals / I.F.: 112.20

1. Del Toro D; Carrasquero-Ordaz M; Chu A; Ruff T; Shahin M; Jackson V; Chavent M; Berbeira-Santana M; Seyit-Bremer G; Brignani S; Kaufmann R; Lowe E; Klein R; Seiradake E. **Structural Basis of Teneurin-Latrophilin Interaction in Repulsive Guidance of Migrating Neurons**. *Cell*. 180(2):323-339.e19. I.F.: 38.637

2. Fernández-García S, Conde-Berriozabal S, García-García E, Gort-Paniello C, Bernal-Casas D, García-Díaz Barriga G, López-Gil J, Muñoz-Moreno E, Soria G, Campa L, Artigas F, Rodríguez MJ, Alberch J, Masana M. **M2 cortex-dorsolateral striatum stimulation reverses motor symptoms and synaptic deficits in Huntington's disease.** *Elife*. 9:e57017. I.F.: 7.080

3. Moreno-Delgado D, Puigdellívol M, Moreno E, Rodríguez-Ruiz M, Botta J, Gasperini P, Chiarlone A, Howell LA, Scarselli M, Casadó V, Cortés A, Ferré S, Guzmán M, Lluís C, Alberch J, Canela EI, Ginés S, McCormick PJ. **Modulation of dopamine D1 receptors via histamine H3 receptors is a novel therapeutic target for Huntington's disease.** *Elife*. 9:e51093. I.F.: 7.080

4. Fernández-García S; Orlandi JG; García-Díaz Barriga GA; Rodríguez MJ; Masana M; Soriano J; Alberch J. **Deficits in coordinated neuronal activity and network topology are striatal hallmarks in Huntington's disease.** *Bmc Biology*. 18(1):58. I.F.: 6.765

5. Martín-Flores N, Pérez-Sisqués L, Creus-Muncunill J, Masana M, Ginés S, Alberch J, Pérez-Navarro E, Malagelada C. **Synaptic RTP801 contributes to motor-learning dysfunction in Huntington's disease.** *Cell Death & Disease*. 11(7):569. I.F.: 6.304

6. Fernández-García S; Sancho-Balsells A; Longueville S; Hervé D; Gruart A; Delgado-García JM; Alberch J; Giralt A. **Astrocytic BDNF and TrkB regulate severity and neuronal activity in mouse models of temporal lobe epilepsy.** *Cell* Death & Disease. 11(6):411. I.F.: 8.45

7. Cherubini M; Lopez-Molina L; Gines S. **Mitochondrial fission in Huntington's disease mouse striatum disrupts ER-mitochondria contacts leading to disturbances in Ca2+ efflux and Reactive Oxygen Species (ROS) homeostasis.** *Neurobiology of Disease*. 136:104741. I.F.: 5.332

8. Castella M; Caballero-Baños M; Ortiz-Maldonado V; González-Navarro EA; Suñé G; Antoñana-Vidósola A; Boronat A; Marzal B; Millán L; Martín-Antonio B; Cid J; Lozano M; García E; Tabera J; Trias E; Perpiña U; Canals JM; Baumann T; Benítez-Ribas D; Campo E; Yagüe J; Urbano-Ispizua Á; Rives S; Delgado J; Juan M. **Point-of-care CAR T-cell production (ARI-0001) using a closed semi-automatic bioreactor: Experience from an academic phase i clinical trial.** *Frontiers in Immunology*. 11:482. I.F.: 5.085

9. Giralt A, Brito V, Pardo M, Rubio SE, Marion-Poll L, Martín-Ibáñez R, Zamora-Moratalla A, Bosch C, Ballesteros JJ, Blasco E, García-Torralba A, Pascual M, Pumarola M, Alberch J, Ginés S, Martín ED, Segovia J, Soriano E, Canals JM. **Helios modulates the maturation of a CA1 neuronal subpopulation required for spatial memory formation.** *Experimental Neurology*. 323:113095. I.F.: 5.330

10. Comella-Bolla, Andrea; Orlandi, Javier G; Miguez, Andres; Straccia, Marco; Garcia-Bravo, Maria; Bombau, Georgina; Galofre, Mireia; Sanders, Phil; Carrere, Jordi; Carlos Segovia, Jose; Blasi, Joan; Allen, Nicholas D; Alberch, Jordi; Soriano, Jordi; Canals, Josep M. **Human Pluripotent Stem Cell-Derived Neurons Are Functionally Mature In Vitro and Integrate into the Mouse Striatum Following Transplantation.** *Molecular Neurobiology*. 57(6):2766-2798. I.F.: 4.500

11. Vidal-Sancho L, Fernández-García S, Solés-Tarrés I, Alberch J, Xifró X. **Decreased Myocyte Enhancer Factor 2 Levels in the Hippocampus of Huntington's Disease Mice Are Related to Cognitive Dysfunction.** *Molecular Neurobiology*. 57(11):4549-4562. I.F.: 4.500

12. Llorach-Pares L; Rodriguez-Urgelles E; Nonell-Canals A; Alberch J; Avila C; Sanchez-Martinez M; Giralt A. **Meridianins and lignarenone B as potential GSK3β inhibitors and inductors of structural neuronal plasticity.** *Biomolecules*. 10(4):639. I.F.: 4.879

13. De Pins B; Montalban E; Vanhoutte P; Giralt A; Girault JA. **The non-receptor tyrosine kinase Pyk2 modulates acute locomotor effects of cocaine in D1**

receptor-expressing neurons of the nucleus accumbens. *Scientific Reports.* 10(1):6619. I.F.: 4.379

14. Kim A; García-García E; Straccia M; Comella-Bolla A; Miguez A; Masana M; Alberch J; Canals JM; Rodríguez MJ. **Reduced Fractalkine Levels Lead to Striatal Synaptic Plasticity Deficits in Huntington's Disease.** *Frontiers in Cellular Neuroscience.* 14:163. I.F.: 3.921

15. Sancho-Balsells A; Brito V; Fernández B; Pardo M; Straccia M; Ginés S; Alberch J; Hernández I; Arranz B; Canals JM; Giralt A. **Lack of Helios During Neural Development Induces Adult Schizophrenia-Like Behaviors Associated With Aberrant Levels of the TRIF-Recruiter Protein WDFY1**. *Frontiers in Cellular Neuroscience.* 14:93. I.F.: 3.921

Review / I.F.: 9.107

1. Peregrina C; del Toro D. **FLRTing Neurons in Cortical Migration During Cerebral Cortex Development.** *Frontiers in Cell and Developmental Biology.* 8:578506. I.F.: 5.186

2. Salado-Manzano C, Perpiña U, Straccia M, Molina-Ruiz FJ, Cozzi E, Rosser AE, Canals JM. **Is the Immunological Response a Bottleneck for Cell Therapy in Neurodegenerative Diseases?** *Frontiers in Cellular Neuroscience.* 14:250. I.F.: 3.921

GRANTS FOR RESEARCH IN PROGRESS

Alberch J, Rodríguez-Alue M. **Neuronal network dynamics modulation as therapeutic strategy to recover basal ganglia dysfunction in movement disorders.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO-SAF2017-88076-R
Duration: 01/01/2018-31/12/2020

Canals JM. **Red temática de investigación cooperativa en salud - terapia celular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0011/0012
Duration: 01/01/2017-31/12/2021

Canals JM. **Study of the role of neurodevelopment alterations in Huntington's disease.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-099001-B-I00
Duration: 01/01/2019-31/12/2021

Canals JM. **Modelización de enfermedades neurodegenerativas.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
AEI_EIN2020-112381
Duration: 01/11/2020-31/10/2022

Canals JM, Alberch J. **European Training Network for Cell-Based Regenerative Medicine (Training4CRM).**
Sponsored by: European Commission.
CE_H2020_ MSCA-ITN
Duration: 01/01/2016-31/12/2020

Canals JM. **Training on Advanced Stem Cell Technologies in Neurology.**
Sponsored by: European Commission.
CE_H2020_MSCA-ITN
Duration: 01/11/2016-31/10/2020

del Toro D. **Novel mechanism of neuronal migration leading to cortex folding.**
Sponsored: Ministerio de Economía y Competitividad. MINECO_R-TI2018-095580-A-100
Duration: 01/01/2019-31/12/2021

Gines S. **Transmitophagy between astrocytes and neurons: A new step of neuroglia crosstalk in Huntington´s disease.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-094374-B-I00
Duration: 01/01/2019-31/12/2021

Giralt A. **Defining the role of the ikaros family in schizophrenia (DISC).**
Sponsored: Ministerio de Economía y Competitividad. MINECO_R-TI2018-094678-A-100
Duration: 01/01/2019-31/12/2021

Masana M. **Non-invasive dynamic neural control by laser-based technology (NEUROPA).**
Sponsored by: European Commission.
CE_H2020_Fet Open
Duration: 01/01/2020-31/12/2023

Pérez-Navarro E. **La enfermedad de Huntington como una laminopatía: Interacción entre el cerebro y la periferia.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
MCIU_PID2019-106447RB-100
Duration: 01/06/2020-31/05/2022

4.2 Systems neuropharmacology

LOCATION
IIBB-CSIC labs

KEYWORDS
1. **Neuropsychiatric disorders**
2. **Parkinson's disease**
3. **Brain circuits**
4. **Neuropsychopharmacology**
5. **Oligonucleotide therapeutics**
6. **Animal models**

RELATED DISEASES
1. **Major depressive disorder**
2. **Schizophrenia**
3. **Parkinson's disease**

GROUP INVOLVED IN
AGAUR_SGR17: 00717
CIBERSAM

Original publications

TOTAL	5
IF	26,96
Mean IF	5,39
Q1	100%
D1	20%
MA	60%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Francesc Artigas (IIBB-CSIC)
T. 93 363 83 15
francesc.artigas@iibb.csic.es

RESEARCHERS
Analía Bortolozzi (IIBB-CSIC)
Anna Castañé (IIBB-CSIC)

ASSISTANT RESEARCHERS
Noemí Santana (CIBER)

POST-DOCTORAL RESEARCHERS
Rubén Pavía (IIBB-CSIC)

PRE-DOCTORAL RESEARCHERS
Elena López Terrones (IIBB-CSIC)
Lluís Miquel (IIBB-CSIC)

TECHNICIANS
Leticia Campa (IIBB-CSIC)
Verónica Paz (CIBER)
Esther Ruíz Bronchal (IIBB-CSIC)

ADMINISTRATIVE STAFF
María Jaramillo (CIBER)

VISITING SCIENTISTS
Sharon Manashirov
(miCURE Therapeutics Israel)

PROBLEM

Depression and schizophrenia are very likely the two mental illnesses with the greatest socioeconomic and personal impact. Current treatments, based on the same pharmacological principles that first generation drugs are slow-acting and ineffective, which reduces the quality of life of patients and increases the risk of suicide among those who fail to respond.

Likewise, psychiatric and cognitive disturbances in Parkinson's disease lack appropriate treatment. Hence, one of the great challenges of translational neuroscience in the 21st century is to understand the alterations of the neural circuits responsible for such diseases and design new therapies that are more efficient.

APPROACH

The group studies brain circuits and the synaptic processes involved in the pathophysiology and treatment of severe mental illnesses and also analyses the psychiatric and cognitive aspects of Parkinson's disease.

To achieve this, the group uses a wide array of experimental strategies in animal models, including molecular, cellular, electrophysiological, neurochemical, and behavioural approaches, which makes it possible to obtain a detailed vision of how brain circuits function at different levels of complexity. The main aim of our research is to identify new molecular targets for therapeutic intervention and biomarkers for diagnosis and early detection or response to treatment.

IMPACT

Over the years, the group has consolidated as an international reference in the field of Neuropsychopharmacology, with a special relevance on their studies on the role of serotonin receptors in the mechanism of action of antidepressant drugs.

These studies have led to the development of new drugs by pharmaceutical companies. The group has also developed new animal models to identify potential antipsychotic drugs. More recent accomplishments include the development and use of translational oligonucleotide strategies in Major Depressive Disorder and Parkinson's disease.

RESEARCH LINES

- Neurobiological bases of severe mental disorders such as schizophrenia and depression: synaptic function, neurotransmitters, receptors and brain circuits involved.

- Identification of biomarkers and new targets for therapeutic action. Mechanism of action of

fast-acting antidepressant drugs: glutamatergic agents, inhibitory oligonucleotides, microRNAs.

- Role of synucleins in the control of monoaminergic neurotransmission: Implication in cognitive and psychiatric symptoms of Parkinson's disease.

- Development of new animal models of depression and Parkinson's disease based on astrocyte-neuron communication and on gene over-expression using adeno-associated viral vectors.

- Neurochemistry and neuropharmacology of brain neurotransmission systems.

PUBLICATIONS

Originals / I.F.: 26.958

1. Fernández-García S, Conde-Berriozabal S, García-García E, Gort-Paniello C, Bernal-Casas D, García-Díaz Barriga G, López-Gil J, Muñoz-Moreno E, Soria G, Campa L, Artigas F, Rodríguez MJ, Alberch J, Masana M. **M2 cortex-dorsolateral striatum stimulation reverses motor symptoms and synaptic deficits in Huntington's disease.** *Elife*. 9:e57017. I.F.: 7.080

2. Alarcón-Arís D, Pavia-Collado R, Miquel-Rio L, Coppola-Segovia V, Ferrés-Coy A, Ruiz-Bronchal E, Galofré M, Paz V, Campa L, Revilla R, Montefeltro A, Kordower JH, Vila M, Artigas F, Bortolozzi A. **Anti-α-synuclein ASO delivered to monoamine neurons prevents α-synuclein accumulation in a Parkinson's disease-like mouse model and in monkeys.** *Ebiomedicine*. 59:102944.I.F.: 5.736

3. Tarrés-Gatius M, Miquel-Rio L, Campa L, Artigas F, Castañé A. **Involvement of NMDA receptors containing the GluN2C subunit in the psychotomimetic and antidepressant-like effects of ketamine.** *Translational Psychiatry*. 10(1):427. I.F.: 5.280

4. Cathala A; Devroye C; Robert É; Vallée M; Revest JM; Artigas F; Spampinato U. **Serotonin2B receptor blockade in the rat dorsal raphe nucleus suppresses cocaine-induced hyperlocomotion through an opposite control of mesocortical and mesoaccumbens dopamine pathways.** *Neuropharmacology*. 180:108309. I.F.: 4.431

5. Riga MS, Sanchez C, Celada P, Artigas F. **Sub-chronic vortioxetine (but not escitalopram) normalizes brain rhythm alterations and memory deficits induced by serotonin depletion in rats.** *Neuropharmacology*. 178:108238. I.F.: 4.431

Review / I.F.: 4.431

1. Fullana N; Gasull-Camós J; Tarrés-Gatius M; Castañé A; Bortolozzi A; Artigas F. **Astrocyte control of glutamatergic activity: Downstream effects on serotonergic function and emotional behavior.** *Neuropharmacology*. 166:107914. I.F.: 4.431

GRANTS FOR RESEARCH IN PROGRESS

Artigas F. **Grup de Recerca Consolidat, Neuroquímica i Neurofarmacologia.**
Sponsored by: Generalitat de Catalunya.
2017SGR717
Duration: 01/01/2017-31/12/2020

Bortolozzi A. **Linking between endoplasmic reticulum stress and alpha-synucleinopathy in brain disorders.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
MCIU_PID2019-105136RB-I00
Duration: 01/06/2020-31/05/2023

DOCTORAL THESES

Bortolozzi A, Artigas F. **Rol de las proteínas α- y γ-sinucleína en la regulación de la neurotransmisión dopaminérgica nigroestriatal y mesocortical. Implicación en enfermedades neurodegenerativas y trastornos neuropsiquiátricos.**
PhD student: Rubén Pavía Collado

4.3 Schizophrenia

LOCATION
HCB building
Mallorca 183 building

KEYWORDS
1. **Schizophrenia**
2. **First episode psychosis**
3. **Psychosis**

RELATED DISEASES
1. **Psychosis**

GROUP INVOLVED IN
AGAUR_SGR17: 01355, 01562
CIBERSAM

Original publications

TOTAL	33
IF	154,86
Mean IF	4,69
Q1	70%
D1	45%
MA	36%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Miquel Bernardo (HCB)
T. 93 227 54 00 (Ext.: 3142)
bernardo@clinic.cat

RESEARCHERS
Miquel Bioque (HCB-UB)
Rosa Catalán (HCB-UB)
Clemente García Rizo (HCB-UB)
Patricia Gassó (UB)
Amalia Lafuente (UB)
Sergi Mas (UB)
Guillem Masana (HCB)
Eduard Parellada (HCB-UB)
Rafael Penadés (HCB-UB)
Mercè Torra (HCB-UB)

POST-DOCTORAL RESEARCHERS
Silvia Amoretti (FCRB)
Gisela Mezquida (UB-FCRB)
Natalia Rodríguez Ferret (UB)

NURSING STAFF
Ana Meseguer (CIBER)

ADMINISTRATIVE STAFF
Alicia Durán (FCRB)

PROBLEM

The group considers schizophrenia as a complex, heterogeneous disorder resulting from the interaction between genetic variables and environmental variants with important social determinants.

As a disease, schizophrenia raises some health needs that are not covered from the patient care angle, and which the group is attempting to tackle from a clinical research position. The group does this by researching and generating scientific evidence on new, more valid and effective procedures and treatments, as the prognosis of this disease depends, largely, on early and effective intervention.

APPROACH

The group is developing longitudinal follow-up studies of initial psychotic episodes and defining the factors involved and the determinants of their evolution.

This is a task that it carries out while analysing the clinical, neurocognitive, neurobiological, neuroimaging and environmental correlates that condition the therapeutic response and the risk of relapse.

It also puts into practice techniques and procedures to analyse genetic and neurobiological variants, especially related with inflammatory balance and oxidative stress, in order to look for biomarkers and predictive models that enable identification of new therapeutic targets.

IMPACT

The identification of biochemical, genetic, neuroimaging or neuropsychological biomarkers contributes to more effective and efficient treatment and rehabilitation.

The group's research in the field of schizophrenia has allowed it to validate strategies that have been incorporated into clinical guides, improving prognoses and reducing burden.

In patient care in practice, reducing the period for the implementation of the proven results obtained in the research, as well as early intervention, have shown clear benefits that have enabled a reduction in the individual, family and social burden of the disease.

RESEARCH LINES

- First episodes and second schizophrenia episodes.

- Molecular neurobiology of schizophrenia.

- Neuropsychology.

- Phisical health.

- Animal model.

PUBLICATIONS

Originals / I.F.: 154.858

1. Ferraro L, La Cascia C, Quattrone D, Sideli L, Matranga D, Capuccio V, Tripoli G, Gayer-Anderson C, Morgan C, Sami MB, Sham P, de Haan L, Velthorst E, Jongsma HE, Kirkbride JB, Rutten BPF, Richards AL, Roldan L, Arango C, Bernardo M, Bobes J, Sanjuan J, Santos JL, Arrojo M, Tarricone I, Tortelli A, Szöke A, Del-Ben CM, Selten JP, Lynskey M, Jones PB, Van Os J, La Barbera D,, Murray RM, Di Forti M WP2 EU-GEI GROUP. **Premorbid Adjustment and IQ in Patients With First-Episode Psychosis: A Multisite Case-Control Study of Their Relationship With Cannabis Use**. *Schizophrenia Bulletin.* 46(3):517-529. I.F.: 7.958

2. Mas S, Boloc D, Rodríguez N, Mezquida G, Amoretti S, Cuesta MJ, González-Peñas J, García-Alcón A, Lobo A, González-Pinto A, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Saiz-Ruiz J, Gassó P, Bioque M, Bernardo M, PEPs Group. **Examining Gene-Environment Interactions Using Aggregate Scores in a First-Episode Psychosis Cohort.** *Schizophrenia Bulletin.* 46(4):1019-1025. I.F.: 7.958

3. Bergé D, Mané A, Lesh TA, Bioque M, Barcones F, Gonzalez-Pinto AM, Parellada M, Vieta E, Castro-Fornieles J, Rodriguez-Jimenez R, García-Portilla MP, Usall J, Carter CS, Cabrera B, Bernardo M, Janssen J, PEPs group. **Elevated Extracellular Free-Water in a Multicentric First-Episode Psychosis Sample, Decrease During the First 2 Years of Illness.** *Schizophrenia Bulletin.* 46(4):846-856. I.F.: 7.958

4. Sugranyes G; de la Serna E; Ilzarbe D; Pariente JC; Borras R; Romero S; Rosa M; Baeza I; Moreno MD; Bernardo M; Vieta E; Castro-Fornieles J. **Brain structural trajectories in youth at familial risk for schizophrenia or bipolar disorder according to development of psychosis spectrum symptoms**. *Journal of Child Psychology and Psychiatry.* I.F.: 7.035

5. LK Pries, GA dal Ferro, J van Os, P Delespaul, G Kenis, BD Lin, JJ Luykx, AL Richards, B Akdede, T Binbay, V Altınyazar, B Yalınçetin, G Gümüş-Akay, B Cihan, H Soygür, H Ulaş, E Şahin Cankurtaran, S Ulusoy-Kaymak, MM Mihaljevic, S Andric-Petrovic, T Mirjanic, M Bernardo, G Mezquida, S Amoretti, J Bobes, PA Saiz, MP García-Portilla, J Sanjuan, EJ Aguilar, JL Santos, E Jiménez-López, M Arrojo, A Carracedo, G López, J González-Peñas, M Parellada, NP Maric, C Atbaşoğlu, A Ucok, K Alptekin, M can Saka, Genetic Risk and Outcome of Psychosis (GROUP) investigators, C Arango, M O'Donovan, S Tosato, BPF Rutten, S Gülöksüz. **Examining the independent and joint effects of genomic and exposomic liabilities for schizophrenia across the psychosis spectrum.** *Epidemiology and Psychiatric Sciences.* 29:e182. I.F.: 5.876

6. Van Os J, Pries LK, Delespaul P, Kenis G, Luykx JJ, Lin BD, Richards AL, Akdede B, Binbay T, Altınyazar V, Yalınçetin B, Gümüş-Akay G, Cihan B, Soygür H, Ulaş H, Cankurtaran E Şahin, Kaymak SU, Mihaljevic MM, Petrovic SA, Mirjanic T, Bernardo M, Cabrera B, Bobes J, Saiz PA, García-Portilla MP, Sanjuan J, Aguilar EJ, Santos JL, Jiménez-López E, Arrojo M, Carracedo A, López G, González-Peñas J, Parellada M, Maric NP, Atbaşoğlu C, Ucok A, Alptekin K, Saka MC, Arango C, O'Donovan M, Rutten BPF, Gülöksüz S, Genetic Risk and Outcome Investigators (GROUP). **Replicated evidence that endophenotypic expression of schizophrenia polygenic risk is greater in healthy siblings of patients compared to controls, suggesting gene-environment interaction. the EUGEI study.** *Psychological Medicine.* 50(11):1884-1897. I.F.: 5.811

7. Henquet C, van Os J, Pries LK, Rauschenberg C, Delespaul P, Kenis G, Luykx JJ, Lin BD, Richards AL, Akdede B, Binbay T, Altınyazar V, Yalınçetin B, Gümüş-Akay G, Cihan B, Soygür H, Ulaş H, Cankurtaran ES, Kaymak SU, Mihaljevic MM, Petrovic SS, Mirjanic T, Bernardo M, Mezquida G, Amoretti S, Bobes J, Saiz PA, García-Portilla MP, Sanjuan J, Aguilar EJ, Santos JL, Jiménez-López E, Arrojo M, Carracedo A, López G, González-Peñas J, Parellada M, Maric NP, Atbaşoğlu C, Ucok A, Alptekin K, Saka MC, Arango C, O'Donovan M, Rutten BPF, Gülöksüz S. **A replication study of JTC bias, genetic liability for psychosis and delusional ideation.** *Psychological Medicine.* 1-7. I.F.: 5.811

8. Van Os J, Pries LK, Ten Have M, de Graaf R, van Dorsselaer S, Delespaul P, Bak M, Kenis G, Lin BD, Luykx JJ, Richards AL, Akdede B, Binbay T, Altınyazar V, Yalınçetin B, Gümüş-Akay G, Cihan B, Soygür H, Ulaş H, Cankurtaran E Şahin, Kaymak SU, Mihaljevic MM, Petrovic SA, Mirjanic T, Bernardo M, Mezquida G, Amoretti S, Bobes J, Saiz PA, García-Portilla MP, Sanjuan J, Aguilar EJ, Santos JL, Jiménez-López E, Arrojo M, Carracedo A, López G, González-Peñas J, Parellada M, Maric NP, Atbaşoğlu C, Ucok A, Alptekin K, Saka MC, Arango C, O'Donovan M, Rutten BPF, Gülöksüz S. **Evidence, and replication thereof, that molecular-genetic and environmental risks for psychosis impact through an affective pathway.** *Psychological Medicine.* :1-13. I.F.: 5.811

9. Quattrone D, Ferraro L, Tripoli G, La Cascia C, Quigley H, Quattrone A, Jongsma HE, Del Peschio S, Gatto G, Gayer-Anderson C, Jones PB, Kirkbride JB, La Barbera D, Tarricone I, Berardi D, Tosato S, Lasalvia A, Szöke A, Arango C, Bernardo M, Bobes J, Del Ben CM, Menezes PR, Llorca PM, Santos JL, Sanjuán J, Tortelli A, Velthorst E, de Haan L, Rutten BPF, Lynskey MT, Freeman TP, Sham PC, Cardno AG, Vassos E, van Os J, Morgan C, Reininghaus U, Lewis CM, Murray RM, Di Forti M EU-GEI group. **Daily use of high-potency cannabis is associated with more positive symptoms in first-episode psychosis patients: The EU-GEI case-control study.** *Psychological Medicine.* 1-9. I.F.: 5.811

10. Ballesteros A, Sánchez Torres AM, López-Ilundáin J, Mezquida G, Lobo A, González-Pinto A, Pina-Camacho L, Corripio I, Vieta E, de la Serna E, Mané A, Bioque M, Moreno-Izco L, Espliego A, Lorente-Omeñaca R, Amoretti S, Bernardo M, Cuesta MJ, PEPs Group. **The longitudinal effect of antipsychotic burden on psychosocial functioning in first-episode psychosis patients: The role of verbal memory.** *Psychological Medicine.* 1-10. I.F.: 5.811

11. Sami M; Quattrone D; Ferraro L; Tripoli G; Cascia E; Gayer-Anderson C; Selten JP; Arango C; Bernardo M; Tarricone I; Tortelli A; Gatto G; Del Peschio S; Del-Ben CM; Rutten BP; Jones PB; van Os J; de Haan L; Morgan C; Lewis C; Bhattacharyya S; Freeman TP; Lynskey M; Murray RM; Forti MD. **Association of extent of cannabis use and psychotic like intoxication experiences in a multi-national sample of first episode psychosis patients and controls.** *Psychological Medicine.* 1-9. I.F.: 5.811

12. Jongsma HE, Gayer-Anderson C, Tarricone I, Velthorst E, van der Ven E, Quattrone D, di Forti M,, Menezes PR, Del-Ben CM, Arango C, Lasalvia A, Berardi D, La Cascia C, Bobes J, Bernardo M, Sanjuán J,

Santos JL, Arrojo M, de Haan L, Tortelli A, Szöke A, Murray RM, Rutten BP, van Os J, Morgan C, Jones PB, Kirkbride JB EU-GEI WP2 Group. **Social disadvantage, linguistic distance, ethnic minority status and first-episode psychosis: results from the EU-GEI case-control study.** *Psychological Medicine.* 1-13. I.F.: 5.811

13. Amoretti S, Rosa AR, Mezquida G, Cabrera B, Ribeiro M, Molina M, Bioque M, Lobo A, González-Pinto A, Fraguas D, Corripio I, Vieta E, de la Serna E, Morro L, Garriga M, Torrent C, Cuesta MJ, Bernardo M, PEPs Group. **The impact of cognitive reserve, cognition and clinical symptoms on psychosocial functioning in first-episode psychoses.** *Psychological Medicine.* 1-12. I.F.: 5.811

14. Termorshuizen F, van der Ven E, Tarricone I, Jongsma HE, Gayer-Anderson C, Lasalvia A, Tosato S, Quattrone D, La Cascia C, Szöke A, Berardi D, Llorca PM, de Haan L, Velthorst E, Bernardo M, Sanjuán J, Arrojo M, Murray RM, Rutten BP, Jones PB, van Os J, Kirkbride JB, Morgan C, Selten JP . **The incidence of psychotic disorders among migrants and minority ethnic groups in Europe: findings from the multinational EU-GEI study.** *Psychological Medicine.* 1-10. I.F.: 5.811

15. Mas S, Gassó P, Rodríguez N, Cabrera B, Mezquida G, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Bobes J, Usall J, Saiz-Ruiz J, Contreras F, Parellada E, Bernardo M, PEPs group. **Personalized medicine begins with the phenotype: identifying antipsychotic response phenotypes in a first-episode psychosis cohort.** *Acta Psychiatrica Scandinavica.* 141(6):541-552. I.F.: 5.362

16. Bioque M, Parellada E, García-Rizo C, Amoretti S, Fortea A, Oriolo G, Palau P, Boix-Quintana E, Safont G, Bernardo M. **Clozapine and paliperidone palmitate antipsychotic combination in treatment-resistant schizophrenia and other psychotic disorders: a retrospective 6-month mirror-image study.** *European Psychiatry.* 63(1):e71. I.F.: 4.464

17. De la Serna E, Camprodon-Boadas P, Ilzarbe D, Sugranyes G, Baeza I, Moreno D, Díaz-Caneja CM, Rosa-Justicia M, Llorente C, Ayora M, Borras R, Torrent C, Bernardo M, Castro-Fornieles J. **Neuropsychological development in the child and adolescent offspring of patients diagnosed with schizophrenia or bipolar disorder: A two-year follow-up comparative study.** *Progress in Neuro-Psychopharmacology & Biological Psychiatry.* 103:109972. I.F.: 4.361

18. Salagre E, Grande I, Vieta E, Mezquida G, Cuesta MJ, Moreno C, Bioque M, Lobo A, González-Pinto A, Moreno DM, Corripio I, Verdolini N, Castro-Fornieles J, Mané A, Pinzon-Espinosa J, Bonnin CDM, Bernardo M, Group P. **Predictors of Bipolar Disorder Versus Schizophrenia Diagnosis in a Multicenter First Psychotic Episode Cohort: Baseline Characterization and a 12-Month Follow-Up Analysis.** *Journal of Clinical Psychiatry.* 81(6):19m12996. I.F.: 4.204

19. Gil-Badenes J, Valero R, Valentí M, Macau E, Bertran MJ, Claver G, Bioque M, Baeza I, Bastidas Salvadó A, Lombraña Mencia M, Pacchiarotti I, Bernardo M, Vieta E. **Electroconvulsive therapy protocol adaptation during the COVID-19 pandemic.** *Journal of Affective Disorders.* 276:241-248. I.F.: 3.892

20. Pujol N, Mané A, Bergé D, Mezquida G, Amoretti S, Pérez L, González-Pinto A, Barcones F, Cuesta MJ, Sánchez-Tomico G, Vieta E, Castro-Fornieles J, Bernardo M, Parellada M, PEPs GROUP. **Influence of BDNF and MTHFR polymorphisms on hippocampal volume in first-episode psychosis.** *Schizophrenia Research.* 223:345-352. I.F.: 3.759

21. Bowie C; Bell M; Fiszdon J; Johannesen J; Lindenmayer J; McGurk S; Medalia A; Penadés R; Saperstein A; Twamley E; Ueland T; Wykes T. **Cognitive remediation for schizophrenia: An expert working group white paper on core techniques.** *Schizophrenia Research.* 215:49-53. I.F.: 3.759

22. Martínez-Pinteño A; García-Cerro S; Mas S; Torres T; Boloc D; Rodríguez N; Lafuente A; Gassó P; Arnaiz JA; Parellada E. **The positive allosteric modulator of the mGlu2 receptor JNJ-46356479 partially improves neuropathological deficits and schizophrenia- like behaviors in a postnatal ketamine mice model.** *Journal of Psychiatric Research.* 126:8-18. I.F.: 3.745

23. Torres T, Boloc D, Rodríguez N, Blázquez A, Plana MT, Varela E, Gassó P, Martinez-Pinteño A, Lázaro L, Arnaiz JA, Mas S. **Response to fluoxetine in children and adolescents: a weighted gene co-expression network analysis of peripheral blood.** *American Journal of Translational Research.* 12(5):2028-2040. I.F.: 3.375

24. Gayer-Anderson C, Jongsma HE, Di Forti M, Quattrone D, Velthorst E, de Haan L, Selten JP, Szöke A, Llorca PM, Tortelli A, Arango C, Bobes J, Bernardo M, Sanjuán J, Santos JL, Arrojo M, Parellada M, Tarricone I, Berardi D, Ruggeri M, Lasalvia A, Ferraro L, La Cascia C, La Barbera D, Menezes PR, Del-Ben CM,, Rutten BP, van Os J, Jones PB, Murray RM, Kirkbride JB, Morgan C EU-GEI WP2 Group. **The EUropean Network of National Schizophrenia Networks Studying Gene–Environment Interactions (EU-GEI): Incidence and First-Episode Case-Control Programme.** *Social Psychiatry and Psychiatric Epidemiology.* 55(5):645-657. I.F.: 3.335

25. Soda T, McLoughlin DM, Clark SR, Oltedal L, Kessler U, Haavik J, Bousman C, Smith DJ, Bioque M, Clements CC, Loo C, Vila-Rodriguez F, Minelli A, Mickey BJ, Milev R, Docherty AR, Langan Martin J, Achtyes ED, Arolt V, Redlich R, Dannlowski U, Cardoner N, Clare E, Craddock N, Di Florio A, Dmitrzak-Weglarz M, Forty L, Gordon-Smith K, Husain M, Ingram WM, Jones L, Jones I, Juruena M, Kirov G, Landén M, Müller DJ, Nordensköld A, Pålsson E, Paul M, Permoda A, Pliszka B, Rea J, Schubert KO, Sonnen JA, Soria V, Stageman W, Takamiya A, Urretavizcaya M, Watson S, Zavorotny M, Young AH, Vieta E, Rybakowski JK, Gennarelli M, Zandi PP, Sullivan PF, Baune BT. **International Consortium on the Genetics of Electroconvulsive Therapy and Severe Depressive Disorders (Gen-ECT-ic).** *European Archives of Psychiatry and Clinical Neuroscience.* 270(7):921-932. I.F.: 3.288

26. Boloc D, Rodríguez N, Torres T, García-Cerro S, Parellada M, Saiz-Ruiz J, Cuesta MJ, Bernardo M, Gassó P, Lafuente A, Mas S, Arnaiz JA. **Identifying key transcription factors for pharmacogenetic studies of antipsychotics induced extrapyramidal symptoms.** *Psychopharmacology.* 237(7):2151-2159. I.F.: 3.130

27. Arnaiz JA, Rodrigues-Silva C, Mezquida G, Amoretti S, Cuesta MJ, Fraguas D, Lobo A, González-Pinto A, Díaz-Caneja MC, Corripio I, Vieta E, Baeza I, Mané A, García-Rizo C, Bioque M, Saiz J, Bernardo M, Mas S, PEPs group. **The usefulness of Olanzapine plasma concentrations in monitoring treatment efficacy and metabolic disturbances in first-episode psychosis.** *Psychopharmacology.* 238(3):665-676. I.F.: 3.130

28. Gassó P, Arnaiz JA, Mas S, Lafuente A, Bioque M, Cuesta MJ, Díaz-Caneja CM, García C, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Rodríguez N, Boloc D, Saiz-Ruiz J, Bernardo M, PEPs Group. **Association study of candidate genes with obesity and metabolic traits in antipsychotic-treated patients with first-episode psychosis over a 2-year period.** *Journal of Psychopharmacology.* 34(5):514-523. I.F.: 3.121

29. González-Rodríguez A, Cobo J, Soria V, Usall J, Garcia-Rizo C, Bioque M, Monreal JA, Labad J. **Women Undergoing Hormonal Treatments for Infertility: A Systematic Review on Psychopathology and Newly Diagnosed Mood and Psychotic Disorders.** *Frontiers in Psychiatry.* 11:479. I.F.: 2.849

30. Bioque M; Mac-Dowell KS; Font C; Meseguer A; Macau E; Garcia-Orellana M; Valentí M; Leza JC; Bernardo M. **Acute effects of a session of electroconvulsive therapy on brain-derived neurotrophic factor plasma levels.** *Revista de Psiquiatría y Salud Mental.* S1888-9891(20):30069. I.F.: 2.630

31. Bernardo M, Amoretti S, Cuesta MJ, Parellada M, Mezquida G,, González-Pinto A, Bergé D, Lobo A, Aguilar EJ, Usall J, Corripio I, Bobes J, Rodríguez-Jiménez R, Sarró S, Contreras F, Ibáñez Á, Gutiérrez M, Micó JA 2EPs Group, acronym 2EPs Group responds to the authorship of the principal investigators of the fifteen centres that have participated in this coordinated multicenter project. **The prevention of relapses in first episodes of schizophrenia: The 2EPs Project, background, rationale and study design.** *Revista de Psiquiatría y Salud Mental.* S1888-9891(20):30098-7. I.F.: 2.630

32. Turrion M; Perez J; Bernardo M; Fernandez-Egea E. **Intra-individual variation of clozapine and norclozapine plasma levels in clinical practice.** *Revista de Psiquiatría y Salud Mental.* 13(1):31-35. I.F.: 2.630

33. Penadés R; Segura B; Inguanzo A; García-Rizo C; Catalán R; Masana G; Bernardo M; Junqué C. **Cognitive remediation and brain connectivity: A resting-state fMRI study in patients with schizophrenia.** *Psychiatry Research-Neuroimaging.* 303:111140. I.F.: 2.063

Review / I.F.: 17.445

1. Costas-Carrera A, Garcia-Rizo C, Bitanihirwe B, Penadés R. **Obstetric Complications and Brain Imaging in Schizophrenia: A Systematic Review.** *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging.* 5(12):1077-1084. I.F.: 5.335

2. Garcia-Rizo, Clemente; Bitanihirwe, Byron KY. **Implications of early life stress on fetal metabolic programming of schizophrenia: A focus on epiphenomena underlying morbidity and early mortality.** *Progress in Neuro-Psychopharmacology & Biological Psychiatry.* 101:109910. I.F.: 4.361

3. Turner DT, Reijnders M, van der Gaag M, Karyotaki E, Valmaggia LR, Moritz S, Lecomte T, Turkington D, Penadés R, Elkis H, Cather C, Shawyer F, O'Connor K, Li ZJ, de Paiva Barretto EM, Cuijpers P. **Efficacy and Moderators of Cognitive Behavioural Therapy for Psychosis Versus Other Psychological Interventions: An Individual-Participant Data Meta-Analysis.** *Frontiers in Psychiatry.* 11:402. I.F.: 2.849

4. Fernández-Candil J, Castelltort Mascó L, Fàbregas Julià N, Urretavizcaya Sarachaga M, Bernardo Arroyo M, Valero Castell R. **Anaesthesia in electroconvulsive therapy. Special conditions.** *Revista de Psiquiatria y Salud Mental.* 13(1):36-46. I.F.: 2.630

5. Tost, Meritxell; Antonio Monreal, Jose; Armario, Antonio; David Barbero, Juan; Cobo, Jesus; Garcia-Rizo, Clemente; Bioque, Miquel; Usall, Judith; Huerta-Ramos, Elena; Soria, Virginia; Alvarez, Pilar; del Cacho, Nuria; Martin-Blanco, Ana; Montalvo, Itziar; Portella, Maria; Real, Eva; Rubio, Elena; Labad, Javier;PNECAT Grp. **Targeting Hormones for Improving Cognition in Major Mood Disorders and Schizophrenia: Thyroid Hormones and Prolactin.** *Clinical Drug Investigation.* 40(1):1-14. I.F.: 2.267

Letters / I.F.: 16.178

1. Jongsma HE, Gayer-Anderson C, van der Ven E, Quattrone D, di Forti M, Arango C, Cascia C, Bernardo M, Morgan C, Jones PB, Kirkbride JB . **Authors' reply to 'on the existence of a linguistic distance in schizophrenia'**. *Psychological Medicine.* 1-2. I.F.: 5.811

2. García-Rizo C, Bioque M, Mezquida G, Amoretti S, Cuesta MJ, Díaz-Caneja CM, Mas S, Lobo A, González-Pinto A, Fraguas D, Corripio I, Vieta E, Baeza I, Bergé D, Fernandez-Egea E, Garriga M, Bernardo M, PEPs GROUP. **Birth weight and antipsychotic induced weight gain: A prenatal programming approach in the PEPs study.** *Schizophrenia Research.* 218:292-294. I.F.: 3.759

3. Berendsen S, Kapitein P, Schirmbeck F, van Tricht MJ, McGuire P, Morgan C, Gayer-Anderson C, Kempton MJ, Valmaggia L, Quattrone D, di Forti M, van der Gaag M, Kirkbride JB, Jongsma HE, Jones PB, Parellada M, Arango C, Arrojo M, Bernardo M, Sanjuán J, Santos JL, Szöke A, Tortelli A, Llorca PM, Tarricone I, Tripoli G, Ferraro L, La Cascia C, Lasalvia A, Tosato S, Menezes PR, Del-Ben CM, Nelson B, Riecher-Rössler A, Bressan R, Barrantes-Vidal N, Krebs MO, Nordentoft M, Ruhrmann S, Sachs G, Rutten BPF, van Os J, Velthorst E, de Haan L, EU-GEI High Risk Study. **Pre-training inter-rater reliability of clinical instruments in an international psychosis research project.** *Schizophrenia Research.* S0920-9964(20):30429-1. I.F.: 3.759

4. Garcia-Rizo, Clemente. **Antipsychotic-Induced Weight Gain and Clinical Improvement: A Psychiatric Paradox.** *Frontiers in Psychiatry.* 11:560006. I.F.: 2.849

Case Reports / I.F.: 2.454

1. Sagué-Vilavella M; Gil-Badenes J; Baeza NB; Gómez SM; Pacchiarotti I; Cabrera MTP; Ribas MV; Bioque M. **The other victims of covid-19: the value of electroconvulsive therapy**. *Journal of Ect.* 37(1):e1-e2. I.F.: 2.454

GRANTS FOR RESEARCH IN PROGRESS

Bernardo M. **Identificación y caracterización del valor predictivo de la reserva cognitiva en el curso evolutivo y respuesta en terapéutica en personas con un primer episodio psicótico.**
Sponsored by: Generalitat de Catalunya.
PERIS_SLT006/17/00345
Duration: 17/02/2018-31/03/2021

Catalán R. **Diferencias de género en la respuesta a antipsicóticos: analizando el rol de la menopausia, los cambios epigenéticos en los receptores de estrógenos y los niveles de hormonas sexuales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01029
Duration: 01/01/2017-30/06/2021

Lafuente A, Arnaiz JA. **Mecanismos moleculares implicados en la Farmacogenética del síndrome metabólico inducido por antipsicóticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01222
Duration: 01/01/2017-30/06/2021

Parellada E. **Cellular, molecular, genetic and cognitive-behavioural characterization of the antiapoptotic effect of clozapine and glutamate inhibitors in a postnatal ketamine animal model of schizophrenia.**
Sponsored by: Fundació Clínic per a la Recerca Biomèdica. FCRB_PB2_2018
Duration: 25/04/2018-25/04/2022

Parellada E, Gassó P. **Estudio convergente en modelo celular, animal y humano del efecto y mecanismos de acción de la clozapina e inhibidores de glutamato en los síntomas negativos-cognitivos de la esquizofrenia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01005
Duration: 01/01/2019-31/12/2021

Penadés R. **Rehabilitación cognitiva en la esquizofrenia: variación genética en los genes BDNF (Val66Met) y COMT (Val158-Met) como posible modulador de la respuesta al tratamiento.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00872
Duration: 01/01/2018-30/06/2022

Penadés R. **Epigenetic regulation of bdnf expression according to response to cognitive remediation in schizophrenia.**
Sponsored by: Brain & Behavior Research Foundation. INT_NARSAD16_IIG_002
Duration: 15/09/2016-14/03/2020

DOCTORAL THESES

Mas S, Lázaro L. **Farmacogenética y farmacogenómica de la respuesta terapéutica a fluoxetina en niños y adolescentes.**
PhD student: Teresa Torres Moral

4.4 Child and adolescent psychiatry and psychology

LOCATION
HCB building

KEYWORDS
1. **Children**
2. **Adolescents**
3. **Psychopathology**
4. **Neuroimaging**
5. **Genetics**
6. **Neuropsychology**

RELATED DISEASES
1. **Psychotic and affective disorders**
2. **Anorexia nervosa and other eating disorders**
3. **Obsessive-compulsive disorder**
4. **Tourette syndrome**
5. **Autism spectrum disorder**

GROUP INVOLVED IN
AGAUR_SGR17: 00287, 00881
CIBERSAM

Original publications

TOTAL	38
IF	198,74
Mean IF	5,23
Q1	84%
D1	53%
MA	21%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josefina Castro (HCB)
T. 93 227 20 70
jcastro@clinic.cat

RESEARCHERS
Susana Andrés (HCB)
Inmaculada Baeza (HCB)
Rosa Calvo (HCB)
Itziar Flamarique (HCB)
Luisa Lázaro (HCB)
Astrid Morer (HCB)
Soledad Romero (HCB)

POST-DOCTORAL RESEARCHERS
Ana Blázquez (HCB)
Elena de la Serna (CIBER)
Ana Encarnación Ortiz (HCB)
Ana Pérez Vigil (HCB)
Maria Teresa Plana (HCB)
Olga Puig (HCB)
Mireia Rosa (IDIBAPS)
Pilar Santamaria (HCB)

PRE-DOCTORAL RESEARCHERS
Patricia Camprodon Boadas (FCRB)
Blanca García Delgar (HCB)
Daniel Ilzarbe (HCB)
Iria Méndez (HCB)

PROBLEM

The presence of psychiatric and psychological disorders with varying degrees of severity is observed in approximately 15% of children and adolescents. This means that 15 out of every 100 minors experience psychiatric and psychological difficulties at a time of vital importance, when the psychological traits and functional bases of the future adult are in the process of being formed.
Studying the characteristics of disorders at these ages and their possible treatments is of primordial importance in early diagnosis and intervention in order to improve their prognosis.

APPROACH

The group investigates the most common psychiatric and psychological diseases among children and adolescents: disorders related to eating, obsessive-compulsive, depression, anxiety, emotional upsets, attention deficit and hyperactivity, autistic disorders, and psychotic disorders, among others.

The studies include children and adolescents with a very high risk of developing mental disorders. This enables the group to study disorders before they develop and above all, to detect their symptoms in advance and take preventive action.The group's objectives also include the study of genetic bases and of clinical, cognitive, and neuroimaging characteristics.

IMPACT

In recent years the research group has made important progress in researching risk markers related to the development of psychotic disorders, in the characteristics and prognosis of minors with psychotic symptoms.

RESEARCH LINES

- Anorexia and other eating disorders.

- Autism spectrum disorders (ASD).

- Obsessive-compulsive disorder (OCD) and tourette syndrome.

- Psychotic and affective disorders in children and adolescents.

PUBLICATIONS

Originals / I.F.: 198.738

1. Stein H; Barbosa J; Rosa-Justicia M; Prades L; Morató A; Galan-Gadea A; Ariño H; Martinez-Hernandez E; Castro-Fornieles J; Dalmau J; Compte A. **Reduced serial dependence suggests deficits in synaptic potentiation in anti-NMDAR encephalitis and schizophrenia.** *Nature Communications.* 11(1):4250. I.F.: 12.121

2. Kong XZ, Boedhoe PSW, Abe Y, Alonso P, Ameis SH, Arnold PD, Assogna F, Baker JT, Batistuzzo MC, Benedetti F, Beucke JC, Bollettini I, Bose A, Brem S, Brennan BP, Buitelaar J, Calvo R, Cheng Y, Cho KIK, Dallaspezia S, Denys D, Ely BA, Feusner J, Fitzgerald KD, Fouche JP, Fridgeirsson EA, Glahn DC, Gruner P, Gürsel DA, Hauser TU, Hirano Y, Hoexter MQ, Hu H, Huyser C, James A, Jaspers-Fayer F, Kathmann N, Kaufmann C, Koch K, Kuno M, Kvale G, Kwon JS, Lazaro L, Liu Y, Lochner C, Marques P, Marsh R, Martínez-Zalacaín I, Mataix-Cols D, Medland SE, Menchón JM, Minuzzi L, Moreira PS, Morer A, Morgado P, Nakagawa A, Nakamae T, Nakao T, Narayanaswamy JC, Nurmi EL, O'Neill J, Pariente JC, Perriello C, Piacentini J, Piras F, Pittenger C, Reddy YCJ, Rus-Oswald OG, Sakai Y, Sato JR, Schmaal L, Simpson HB, Soreni N, Soriano-Mas C, Spalletta G, Stern ER, Stevens MC, Stewart SE, Szeszko PR, Tolin DF, Tsuchiyagaito A, van Rooij D, van Wingen GA, Venkatasubramanian G, Wang Z, Yun JY,, Thompson PM, Stein DJ, van den Heuvel OA, Francks C, ENIGMA OCD Working Group. **Mapping Cortical and Subcortical Asymmetry in Obsessive-Compulsive Disorder: Findings From the ENIGMA Consortium**. *Biological Psychiatry*. 87(12):1022-1034. I.F.: 12.095

3. Yun JY, Boedhoe PSW, Vriend C, Jahanshad N, Abe Y, Ameis SH, Anticevic A, Arnold PD, Batistuzzo MC, Benedetti F, Beucke JC, Bollettini I, Bose A, Brem S, Calvo A, Cheng Y, Cho KIK, Ciullo V, Dallaspezia S, Denys D, Feusner JD, Fouche JP, Giménez M, Gruner P, Hibar DP, Hoexter MQ, Hu H, Huyser C, Ikari K, Kathmann N, Kaufmann C, Koch K, Lazaro L, Lochner C, Marques P, Marsh R, Martínez-Zalacaín I, Mataix-Cols D, Menchón JM, Minuzzi L, Morgado P, Moreira P, Nakamae T, Nakao T, Narayanaswamy JC, Nurmi EL, O'Neill J, Piacentini J, Piras F, Reddy YCJ, Sato JR, Simpson HB, Soreni N, Soriano-Mas C, Spalletta G, Stevens MC, Szeszko PR, Tolin DF, Venkatasubramanian G, Walitza S, Wang Z, van Wingen GA, Xu J, Xu X, Zhao Q,, Thompson PM, Stein DJ, van den Heuvel OA, Kwon JS, ENIGMA-OCD working group. **Brain structural covariance networks in obsessive-compulsive disorder: a graph analysis from the ENIGMA Consortium.** *Brain*. 143(2):684-700. I.F.: 11.337

4. Ariño H, Muñoz-Lopetegi A, Martinez-Hernandez E, Armangue T, Rosa-Justicia M, Escudero D, Matos N, Graus F, Sugranyes G, Castro-Fornieles J, Compte A, Dalmau J, Santamaria J. **Sleep disorders in anti-NMDAR encephalitis.** *Neurology*. 95(6):e671-e684. I.F.: 8.770

5. Mas S, Boloc D, Rodríguez N, Mezquida G, Amoretti S, Cuesta MJ, González-Peñas J, García-Alcón A, Lobo A, González-Pinto A, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Saiz-Ruiz J, Gassó P, Bioque M, Bernardo M, PEPs Group. **Examining Gene-Environment Interactions Using Aggregate Scores in a First-Episode Psychosis Cohort**. *Schizophrenia Bulletin*. 46(4):1019-1025. I.F.: 7.958

6. Bergé D, Mané A, Lesh TA, Bioque M, Barcones F, Gonzalez-Pinto AM, Parellada M, Vieta E, Castro-Fornieles J, Rodriguez-Jimenez R, García-Portilla MP, Usall J, Carter CS, Cabrera B, Bernardo M, Janssen J, PEPs group. **Elevated Extracellular Free-Water in a Multicentric First-Episode Psychosis Sample, Decrease During the First 2 Years of Illness.** *Schizophrenia Bulletin*. 46(4):846-856. I.F.: 7.958

7. Sugranyes G; de la Serna E; Ilzarbe D; Pariente JC; Borras R; Romero S; Rosa M; Baeza I; Moreno MD; Bernardo M; Vieta E; Castro-Fornieles J. **Brain structural trajectories in youth at familial risk for schizophrenia or bipolar disorder according to development of psychosis spectrum symptoms.** *Journal of Child Psychology and Psychiatry*. I.F.: 7.035

8. Cervin M; Perrin S; Olsson E; Aspvall K; Geller D; Wilhelm S; McGuire J; Lázaro L; Martínez-González A; Barcaccia B; Pozza A; Goodman W; Murphy T; Seçer İ; Piqueras J; Rodríguez-Jiménez T; Godoy A; Rosa-Alcázar A; Rosa-Alcázar Á; Ruiz-García B; Storch E; Mataix-Cols D. **The Centrality of Doubting and Checking in the Network Structure of Obsessive-Compulsive Symptom Dimensions in Youth.** *Journal of the American Academy of Child and Adolescent Psychiatry*. 59(7):880-889. I.F.: 6.936

9. Aggensteiner PM, Holz NE, Böttinger BW, Baumeister S, Hohmann S, Werhahn JE, Naaijen J, Ilbegi S, Glennon JC, Hoekstra PJ, Dietrich A, Deters RK, Saam MC, Schulze UME, Lythgoe DJ, Sethi A, Craig MC, Mastroianni M, Sagar-Ouriaghli I, Santosh PJ, Rosa M, Bargallo N, Castro-Fornieles J, Arango C, Penzol MJ, Vidal J, Franke B, Zwiers MP, Buitelaar JK, Walitza S, Banaschewski T, Brandeis D. **The effects of callous-unemotional traits and aggression subtypes on amygdala activity in response to negative faces**. *Psychological Medicine*. 1-9. I.F.: 5.811

10. Ballesteros A, Sánchez Torres AM, López-Ilundáin J, Mezquida G, Lobo A, González-Pinto A, Pina-Camacho L, Corripio I, Vieta E, de la Serna E, Mané A, Bioque M, Moreno-Izco L, Espliego A, Lorente-Omeñaca R, Amoretti S, Bernardo M, Cuesta MJ, PEPs Group. **The longitudinal effect of antipsychotic burden on psychosocial functioning in first-episode psychosis patients: The role of verbal memory.** *Psychological Medicine*. 1-10. I.F.: 5.811

11. Amoretti S, Rosa AR, Mezquida G, Cabrera B, Ribeiro M, Molina M, Bioque M, Lobo A, González-Pinto A, Fraguas D, Corripio I, Vieta E, de la Serna E, Morro L, Garriga M, Torrent C, Cuesta MJ, Bernardo M, PEPs Group. **The impact of cognitive reserve, cognition and clinical symptoms on psychosocial functioning in first-episode psychoses.** *Psychological Medicine*. 1-12. I.F.: 5.811

12. Mas S, Gassó P, Rodríguez N, Cabrera B, Mezquida G, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Bobes J, Usall J, Saiz-Ruiz J, Contreras F, Parellada E, Bernardo M, PEPs group. **Personalized medicine begins with the phenotype: identifying antipsychotic response phenotypes in a first-episode psychosis cohort.** *Acta Psychiatrica Scandinavica*. 141(6):541-552. I.F.: 5.362

13. Bruin WB, Taylor L, Thomas RM, Shock JP, Zhutovsky P, Abe Y, Alonso P, Ameis SH, Anticevic A, Arnold PD, Assogna F, Benedetti F, Beucke JC, Boedhoe PSW, Bollettini I, Bose A, Brem S, Brennan BP, Buitelaar JK, Calvo R, Cheng Y, Cho KIK, Dallaspezia S, Denys D, Ely BA, Feusner JD, Fitzgerald KD, Fouche JP, Fridgeirsson EA, Gruner P, Gürsel DA, Hauser TU, Hirano Y, Hoexter MQ, Hu H, Huyser C, Ivanov I, James A, Jaspers-Fayer F, Kathmann N, Kaufmann C, Koch K, Kuno M, Kvale G, Kwon JS, Liu Y, Lochner C, Lázaro L, Marques P, Marsh R, Martínez-Zalacaín I, Mataix-Cols D, Menchón JM, Minuzzi L, Moreira PS, Morer A, Morgado P, Nakagawa A, Nakamae T, Nakao T, Narayanaswamy JC, Nurmi EL, O'Neill J, Pariente JC, Perriello C, Piacentini J, Piras F, Reddy YCJ, Rus-Oswald OG, Sakai Y, Sato JR, Schmaal L, Shimizu E, Simpson HB, Soreni N, Soriano-Mas C, Spalletta G, Stern ER, Stevens MC, Stewart SE, Szeszko PR, Tolin DF, Venkatasubramanian G, Wang Z, Yun JY, van Rooij D,,

Thompson PM, van den Heuvel OA, Stein DJ, van Wingen GA, ENIGMA-OCD Working Group. **Structural neuroimaging biomarkers for obsessive-compulsive disorder in the ENIGMA-OCD consortium: medication matters.** *Translational Psychiatry.* 10(1):342. I.F.: 5.280

14. Vigón L, Rodríguez-Mora S, Luna A, Sandonís V, Mateos E, Bautista G, Steegmann JL, Climent N, Plana M, Pérez-Romero P, de Ory F, Alcamí J, García-Gutierrez V, Planelles V, López-Huertas MR, Coiras M. **Cytotoxic cell populations developed during treatment with tyrosine kinase inhibitors protect autologous CD4+ T cells from HIV-1 infection.** *Biochemical Pharmacology.* 182(114203):114203. I.F.: 4.960

15. Fontenelle LF, Oldenhof E, Eduarda Moreira-de-Oliveira M, Abramowitz JS, Antony MM, Cath D, Carter A, Dougherty D, Ferrão YA, Figee M, Harrison BJ, Hoexter M, Soo Kwon J, Küelz A, Lazaro L, Lochner C, Marazziti D, Mataix-Cols D, McKay D, Miguel EC, Morein-Zamir S, Moritz S, Nestadt G, O'Connor K, Pallanti S, Purdon C, Rauch S, Richter P, Rotge JY, Shavitt RG, Soriano-Mas C, Starcevic V, Stein DJ, Steketee G, Storch EA, Taylor S, van den Heuvel OA, Veale D, Woods DW, Verdejo-Garcia A, Yücel M. **A transdiagnostic perspective of constructs underlying obsessive-compulsive and related disorders: An international Delphi consensus study.** *Australian and New Zealand Journal of Psychiatry.* 54(7):719-731. I.F.: 4.657

16. Wierenga LM, Doucet GE, Dima D, Agartz I, Aghajani M, Akudjedu TN, Albajes-Eizagirre A, Alnaes D, Alpert KI, Andreassen OA, Anticevic A, Asherson P, Banaschewski T, Bargallo N, Baumeister S, Baur-Streubel R, Bertolino A, Bonvino A, Boomsma DI, Borgwardt S, Bourque J, den Braber A, Brandeis D, Breier A, Brodaty H, Brouwer RM, Buitelaar JK, Busatto GF, Calhoun VD, Canales-Rodríguez EJ, Cannon DM, Caseras X, Castellanos FX, Chaim-Avancini TM, Ching CR, Clark VP, Conrod PJ, Conzelmann A, Crivello F, Davey CG, Dickie EW, Ehrlich S, Van't Ent D, Fisher SE, Fouche JP, Franke B, Fuentes-Claramonte P, de Geus EJ, Di Giorgio A, Glahn DC, Gotlib IH, Grabe HJ, Gruber O, Gruner P, Gur RE, Gur RC, Gurholt TP, de Haan L, Haatveit B, Harrison BJ, Hartman CA, Hatton SN, Heslenfeld DJ, van den Heuvel OA, Hickie IB, Hoekstra PJ, Hohmann S, Holmes AJ, Hoogman M, Hosten N, Howells FM, Hulshoff Pol HE, Huyser C, Jahanshad N, James AC, Jiang J, Jönsson EG, Joska JA, Kalnin AJ,, Klein M, Koenders L, Kolskår KK, Krämer B, Kuntsi J, Lagopoulos J, Lazaro L, Lebedeva IS, Lee PH, Lochner C, Machielsen MW, Maingault S, Martin NG, Martínez-Zalacaín I, Mataix-Cols D, Mazoyer B, McDonald BC, McDonald C, McIntosh AM, McMahon KL, McPhilemy G, van der Meer D, Menchón JM, Naaijen J, Nyberg L, Oosterlaan J, Paloyelis Y, Pauli P, Pergola G, Pomarol-Clotet E, Portella MJ, Radua J, Reif A, Richard G, Roffman JL, Rosa PG, Sacchet MD, Sachdev PS, Salvador R, Sarró S, Satterthwaite TD, Saykin AJ, Serpa MH, Sim K, Simmons A, Smoller JW, Sommer IE, Soriano-Mas C, Stein DJ, Strike LT, Szeszko PR, Temmingh HS, Thomopoulos SI, Tomyshev AS, Trollor JN, Uhlmann A, Veer IM, Veltman DJ, Voineskos A, Völzke H, Walter H, Wang L, Wang Y, Weber B, Wen W, West JD, Westlye LT, Whalley HC, Williams SC, Wittfeld K, Wolf DH, Wright MJ, Yoncheva YN, Zanetti MV, Ziegler GC, de Zubicaray GI, Thompson PM, Crone EA, Frangou S, Tamnes CK, Karolinska Schizophrenia Project (KaSP) Consortium. **Greater male than female variability in regional brain structure across the lifespan.** *Human Brain Mapping.* I.F.: 4.421

17. De Zwarte SMC; Brouwer RM; Agartz I; Alda M; Alonso-Lana S; Bearden CE; Bertolino A; Bonvino A; Bramon E; Buimer EEL; Cahn W; Canales-Rodríguez EJ; Cannon DM; Cannon TD; Caseras X; Castro-Fornieles J; Chen Q; Chung Y; De la Serna E; Del Mar Bonnin C; Demro C; Di Giorgio A; Doucet GE; Eker MC; Erk S; Fatjó-Vilas M; Fears SC; Foley SF; Frangou S; Fullerton JM; Glahn DC; Goghari VM; Goikolea JM; Goldman AL; Gonul AS; Gruber O; Hajek T; Hawkins EL; Heinz A; Hidiroglu Ongun C; Hillegers MHJ; Houenou J; Hulshoff Pol HE; Hultman CM; Ingvar M; Johansson V; Jönsson EG; Kane F; Kempton MJ; Koenis MMG; Kopecek M; Krämer B; Lawrie SM; Lenroot RK; Marcelis M; Mattay VS; McDonald C; Meyer-Lindenberg A; Michielse S; Mitchell PB; Moreno D; Murray RM; Mwangi B; Nabulsi L; Newport J; Olman CA; van Os J; Overs BJ; Ozerdem A; Pergola G; Picchioni MM; Piguet C; Pomarol-Clotet E; Radua J; Ramsay IS; Richter A; Roberts G; Salvador R; Saricicek Aydogan A; Sarró S; Schofield PR; Simsek EM; Simsek F; Soares JC; Sponheim SR; Sugranyes G; Toulopoulou T; Tronchin G; Vieta E; Walter H; Weinberger DR; Whalley HC; Wu MJ; Yalin N; Andreassen OA; Ching CRK; Thomopoulos SI; van Erp TGM; Jahanshad N; Thompson PM; Kahn RS; van Haren NEM. **Intelligence, educational attainment, and brain structure in those at familial high-risk for schizophrenia or bipolar disorder.** *Human Brain Mapping.* I.F.: 4.421

18. De la Serna E, Camprodon-Boadas P, Ilzarbe D, Sugranyes G, Baeza I, Moreno D, Díaz-Caneja CM, Rosa-Justicia M, Llorente C, Ayora M, Borras R, Torrent C, Bernardo M, Castro-Fornieles J. **Neuropsychological development in the child and adolescent offspring of patients diagnosed with schizophrenia or bipolar disorder: A two-year follow-up comparative study.** *Progress in Neuro-Psychopharmacology & Biological Psychiatry.* 103:109972. I.F.: 4.361

19. Naaijen J; Mulder LM; Ilbegi S; de Bruijn S; Kleine-Deters R; Dietrich A; Hoekstra PJ; Marsman JC; Aggensteiner PM; Holz NE; Boettinger B; Baumeister S; Banaschewski T; Saam MC; M E Schulze U; Santosh PJ; Sagar-Ouriaghli I; Mastroianni M; Castro Fornieles J; Bargallo N; Rosa M; Arango C; Penzol MJ; Werhahn JE; Walitza S; Brandeis D; Glennon JC; Franke B; Zwiers MP; Buitelaar JK. **Specific cortical and subcortical alterations for reactive and proactive aggression in children and adolescents with disruptive behavior.** *Neuroimage-Clinical.* 27:102344. I.F.: 4.350

20. Salagre E, Grande I, Vieta E, Mezquida G, Cuesta MJ, Moreno C, Bioque M, Lobo A, González-Pinto A, Moreno DM, Corripio I, Verdolini N, Castro-Fornieles J, Mané A, Pinzon-Espinosa J, Bonnin CDM, Bernardo M, Group P. **Predictors of Bipolar Disorder Versus Schizophrenia Diagnosis in a Multicenter First Psychotic Episode Cohort: Baseline Characterization and a 12-Month Follow-Up Analysis.** *Journal of Clinical Psychiatry.* 81(6):19m12996. I.F.: 4.204

21. Olga Puig, Melissa Fisher, Rachel Loewy, Kathleen Miley, Ian S Ramsay, Cameron S Carter, John D Ragland, Tara Niendam, Sophia Vinogradov. **Early- Versus Adult-Onset Schizophrenia as a Predictor of Response to Neuroscience-Informed Cognitive Training.** *Journal of Clinical Psychiatry.* 81(2):18m12369. I.F.: 4.204

22. Kleine Deters R; Naaijen J; Rosa M; Aggensteiner PM; Banaschewski T; Saam MC; Schulze UME; Sethi A; Craig MC; Sagar-Ouriaghli I; Santosh P; Castro-Fornieles J; Penzol MJ; Arango C; Werhahn JE; Brandeis D; Franke B; Glennon J; Buitelaar JK;

Hoekstra PJ; Dietrich A. **Executive functioning and emotion recognition in youth with oppositional defiant disorder and/or conduct disorder.** *World Journal of Biological Psychiatry.* 21(7):539-551. I.F.: 4.164

23. Rodríguez-Quiroga A, Flamarique I, Castro-Fornieles J, Lievesley K, Buitelaar JK, Coghill D, Díaz-Caneja CM, Dittmann RW, Gupta A, Hoekstra PJ, Kehrmann L, Llorente C, Purper-Ouakil D, Schulze UME, Zuddas A, Sala R, Singh J, Fiori F, Arango C, Santosh P, STOP Consortium. **Development and psychometric properties of the "Suicidality: Treatment Occurring in Paediatrics (STOP) Risk and Resilience Factors Scales" in adolescents.** *European Child & Adolescent Psychiatry.* 29(2):153-165. I.F.: 3.941

24. Openneer TJC; Tárnok Z; Bognar E; Benaroya-Milshtein N; Garcia-Delgar B; Morer A; Steinberg T; Hoekstra PJ; Dietrich A; and the EMTICS collaborative group. **The Premonitory Urge for Tics Scale in a large sample of children and adolescents: psychometric properties in a developmental context. An EMTICS study.** *European Child & Adolescent Psychiatry.* 29(10):1411-1424. I.F.: 3.941

25. Soler J; Lera-Miguel S; Lázaro L; Calvo R; Ferentinos P; Fañanás L; Fatjó-Vilas M. **Familial aggregation analysis of cognitive performance in early-onset bipolar disorder.** *European Child & Adolescent Psychiatry.* 29(12):1705-1716. I.F.: 3.941

26. Tor J, Dolz M, Sintes-Estevez A, de la Serna E, Puig O, Muñoz-Samons D, Pardo M, Rodríguez-Pascual M, Sugranyes G, Sánchez-Gistau V, Baeza I. **Neuropsychological profile of children and adolescents with psychosis risk syndrome: the CAPRIS study.** *European Child & Adolescent Psychiatry.* 29(9):1311-1324. I.F.: 3.941

27. Werhahn JE, Mohl S, Willinger D, Smigielski L, Roth A, Hofstetter C, Stämpfli P, Naaijen J, Mulder LM, Glennon JC, Hoekstra PJ, Dietrich A, Kleine Deters R, Aggensteiner PM, Holz NE, Baumeister S, Banaschewski T, Saam MC, Schulze UME, Lythgoe DJ, Sethi A, Craig MC, Mastroianni M, Sagar-Ouriaghli I, Santosh PJ, Rosa M, Bargallo N, Castro-Fornieles J, Arango C, Penzol MJ, Zwiers MP, Franke B, Buitelaar JK, Walitza S, Brandeis D. **Aggression subtypes relate to distinct resting state functional connectivity in children and adolescents with disruptive behavior.** *European Child & Adolescent Psychiatry.* I.F.: 3.941

28. Camprodon-Boadas P, de la Serna E, Baeza I, Puig O, Ilzarbe D, Sugranyes G, Borras R, Castro-Fornieles J. **Cognitive reserve in patients with first-episode psychosis as outcome predictor at 5-year follow-up.** *European Child & Adolescent Psychiatry.* I.F.: 3.941

29. Rosa-Justicia M; Saam MC; Flamarique I; Borràs R; Naaijen J; Dietrich A; Hoekstra PJ; Banaschewski T; Aggensteiner P; Craig MC; Sethi A; Santosh P; Sagar-Ouriaghli I; Arango C; Penzol MJ; Brandeis D; Werhahn JE; Glennon JC; Franke B; Zwiers MP; Buitelaar JK; Schulze UME; Castro-Fornieles J. **Subgrouping children and adolescents with disruptive behaviors: symptom profiles and the role of callous–unemotional traits.** *European Child & Adolescent Psychiatry.* I.F.: 3.941

30. Gil-Badenes J, Valero R, Valentí M, Macau E, Bertran MJ, Claver G, Bioque M, Baeza I, Bastidas Salvadó A, Lombraña Mencia M, Pacchiarotti I, Bernardo M, Vieta E. **Electroconvulsive therapy protocol adaptation during the COVID-19 pandemic.** *Journal of Affective Disorders.* 276:241-248. I.F.: 3.892

31. Cervin M; Lázaro L; Martínez-González AE; Piqueras JA; Rodríguez-Jiménez T; Godoy A; Aspvall K; Barcaccia B; Pozza A; Storch EA. **Obsessive-compulsive symptoms and their links to depression and anxiety in clinic- and community-based pediatric samples: A network analysis.** *Journal of Affective Disorders.* 271:9-18. I.F.: 3.892

32. Santamarina-Perez P, Mendez I, Singh MK, Berk M, Picado M, Font E, Moreno E, Martínez E, Morer A, Borràs R, Cosi A, Romero S. **Adapted dialectical behavior therapy for adolescents with a high risk of suicide in a community clinic: A pragmatic randomized controlled trial.** *Suicide and Life-Threatening Behavior.* 50(3):652-667. I.F.: 3.867

33. Pujol N, Mané A, Bergé D, Mezquida G, Amoretti S, Pérez L, González-Pinto A, Barcones F, Cuesta MJ, Sánchez-Tomico G, Vieta E, Castro-Fornieles J, Bernardo M, Parellada M, PEPs GROUP. **Influence of BDNF and MTHFR polymorphisms on hippocampal volume in first-episode psychosis.** *Schizophrenia Research.* 223:345-352. I.F.: 3.759

34. Torres T, Boloc D, Rodríguez N, Blázquez A, Plana MT, Varela E, Gassó P, Martinez-Pinteño A, Lázaro L, Arnaiz JA, Mas S. **Response to fluoxetine in children and adolescents: a weighted gene co-expression network analysis of peripheral blood.** *American Journal of Translational Research.* 12(5):2028-2040. I.F.: 3.375

35. Sánchez-Gutiérrez T; Rodríguez-Toscano E; Llorente C; de la Serna E; Moreno C; Sugranyes G; Romero S; Calvo A; Baeza I; Sánchez-Gistau V; Espliego A; Castro-Fornieles J; Moreno D. **Neuropsychological, clinical and environmental predictors of severe mental disorders in offspring of patients with schizophrenia**. *European Archives of Psychiatry and Clinical Neuroscience.* 270(6):739-748. I.F.: 3.288

36. Gassó P, Arnaiz JA, Mas S, Lafuente A, Bioque M, Cuesta MJ, Díaz-Caneja CM, García C, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Rodríguez N, Boloc D, Saiz-Ruiz J, Bernardo M, PEPs Group. **Association study of candidate genes with obesity and metabolic traits in antipsychotic-treated patients with first-episode psychosis over a 2-year period.** *Journal of Psychopharmacology.* 34(5):514-523. I.F.: 3.121

37. Forcadell E; Garcia-Delgar B; Nicolau R; Pérez-Vigil A; Cordovilla C; Lázaro L; Ibáñez L; Mir P; Madruga-Garrido M; Correa-Vela M; Morer A. **Tic disorders and premonitory urges: validation of the Spanish-language version of the Premonitory Urge for Tics Scale in children and adolescents.** *Neurología.* S0213-4853(20):30427-8. I.F.: 2.283

38. Andrés-Pepiñá S, Plana MT, Flamarique I, Romero S, Borràs R, Julià L, Gárriz M, Castro-Fornieles J. **Long-term outcome and psychiatric comorbidity of adolescent-onset anorexia nervosa.** *Clinical Child Psychology and Psychiatry.* 25(1):33-44. I.F.: 1.647

Review / I.F.: 21.112

1. Fullana MA, Abramovitch A, Via E, López-Sola C, Goldberg X, Reina N, Fortea L, Solanes A, Buckley MJ, Ramella-Cravaro V, Carvalho AF, Tortella-Feliu M, Vieta E, Soriano-Mas C, Lázaro L, Stein DJ, Fernández de la Cruz L, Mataix-Cols D, Radua J. **Diagnostic biomarkers for obsessive-compulsive disorder: A reasonable quest or ignis fatuus?** *Neuroscience and Biobehavioral Reviews.* 118:504-513. I.F.: 8.329

2. Van den Heuvel OA, Boedhoe PSW, Bertolin S, Bruin WB, Francks C, Ivanov I, Jahanshad N, Kong XZ, Kwon JS, O'Neill J, Paus T, Patel Y, Piras F, Schmaal L, Soriano-Mas C, Spalletta G, van Wingen GA, Yun JY, Vriend C, Simpson HB, van Rooij D, Hoexter MQ, Hoogman M, Buitelaar JK, Arnold P, Beucke JC, Benedetti F, Bollettini I, Bose A, Brennan BP, De Nadai AS, Fitzgerald K, Gruner P, Grünblatt E, Hirano Y, Huyser C, James A, Koch K, Kvale G, Lazaro L, Lochner C, Marsh R, Mataix-Cols D, Morgado P, Nakamae T, Nakao T, Narayanaswamy JC, Nurmi E, Pittenger C, Reddy YCJ, Sato JR, Soreni N, Stewart SE, Taylor SF, Tolin D, Thomopoulos SI, Veltman DJ, Venkatasubramanian G, Walitza S, Wang Z, Thompson PM, Stein DJ, ENIGMA-OCD working group. **An overview of the first 5 years of the ENIGMA obsessive-compulsive disorder working group: The power of worldwide collaboration.** *Human Brain Mapping.* I.F.: 4.421

3. Hoogman M; van Rooij D; Klein M; Boedhoe P; Ilioska I; Li T; Patel Y; Postema MC; Zhang-James Y; Anagnostou E; Arango C; Auzias G; Banaschewski T; Bau CHD; Behrmann M; Bellgrove MA; Brandeis D; Brem S; Busatto GF; Calderoni S; Calvo R; Castellanos FX; Coghill D; Conzelmann A; Daly E; Deruelle C; Dinstein I; Durston S; Ecker C; Ehrlich S; Epstein JN; Fair DA; Fitzgerald J; Freitag CM; Frodl T; Gallagher L; Grevet EH; Haavik J; Hoekstra PJ; Janssen J; Karkashadze G; King JA; Konrad K; Kuntsi J; Lazaro L; Lerch JP; Lesch KP; Louza MR; Luna B; Mattos P; McGrath J; Muratori F; Murphy C; Nigg JT; Oberwelland-Weiss E; O'Gorman Tuura RL; O'Hearn K; Oosterlaan J; Parellada M; Pauli P; Plessen KJ; Ramos-Quiroga JA; Reif A; Reneman L; Retico A; Rosa PGP; Rubia K; Shaw P; Silk TJ; Tamm L; Vilarroya O; Walitza S; Jahanshad N; Faraone SV; Francks C; van den Heuvel OA; Paus T; Thompson PM; Buitelaar JK; Franke B. **Consortium neuroscience of attention deficit/hyperactivity disorder and autism spectrum disorder: The ENIGMA adventure.** *Human Brain Mapping.* I.F.: 4.421

4. Carballo JJ, Llorente C, Kehrmann L, Flamarique I, Zuddas A, Purper-Ouakil D, Hoekstra PJ, Coghill D, Schulze UME, Dittmann RW, Buitelaar JK, Castro-Fornieles J, Lievesley K, Santosh P, Arango C, STOP Consortium. **Psychosocial risk factors for suicidality in children and adolescents.** *European Child & Adolescent Psychiatry.* 29(6):759-776. I.F.: 3.941

Letters / I.F.: 3.759

1. García-Rizo C, Bioque M, Mezquida G, Amoretti S, Cuesta MJ, Díaz-Caneja CM, Mas S, Lobo A, González-Pinto A, Fraguas D, Corripio I, Vieta E, Baeza I, Bergé D, Fernandez-Egea E, Garriga M, Bernardo M, PEPs GROUP. **Birth weight and antipsychotic induced weight gain: A prenatal programming approach in the PEPs study**. *Schizophrenia Research.* 218:292-294. I.F.: 3.759

GRANTS FOR RESEARCH IN PROGRESS

Baeza I. **Estudio multicéntrico longitudinal sobre el papel de marcadores neurobiológicos e estrés en niños y adolescentes con síndrome de riesgo de psicosis y la transición a psicosis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00444
Duration: 01/01/2016-30/11/2020

Baeza I. **Estudio longitudinal sobre marcadores nutricionales y de estrés en niños y adolescentes con síndrome de riesgo de psicosis y su capacidad predictiva de la transición a psicosis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00242
Duration: 01/01/2019-31/12/2021

Calvo R. **Autism Innovative Medicine Studies 2 Trials.**
Sponsored by: European Commission. CE_IMI2_10th_2stg
Duration: 01/06/2018-31/05/2023

Castro-Fornieles J. **Grup de recerca en Psiquiatria i Psicologia Infantil Clínic (GRUPPIC).**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_00881
Duration: 01/01/2017-30/09/2021

Castro-Fornieles J. **Detecció del risc per esquizofrènia mitjançant PGRS en nens i adolescents fills de pacients amb esquizofrènia o trastorn bipolar.**
Sponsored by: Generalitat de Catalunya. PERIS_SLT006/17/00346
Duration: 17/02/2018-31/03/2021

Castro-Fornieles J. **Early intervention to improve cognitive reserve in subjects at risk and early stages of phychosis.**
Sponsored by: Fundació Clínic per a la Recerca Biomèdica. FCRB_PB2_2020
Duration: 04/05/2020-03/05/2022

Castro-Fornieles J. **Estudio de seguimiento a 8 años de la primera evaluación de niños y adolescents hijos de pacientes con esquizofrenia o trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00467
Duration: 01/01/2016-30/11/2020

Castro-Fornieles J, Compte A, Dalmau J. **Inmune-mediated diseases of the synapse: symptoms, brain networks, and the link to human memory.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PIE16/00014
Duration: 01/01/2017-30/06/2021

Castro-Fornieles J. **Características comunes y diferenciales en hijos de pacientes con esquizofrenia diagnosticados de TDAH, hijos de padres sanos diagnosticados de TDAH y controles.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00696
Duration: 01/01/2019-31/12/2021

Lázaro L. **Caracterització mitjançant neuroimatge de predictors i mecanismes de resposta a la teràpia cognitiu-conductual en el trastorn obsessivocompulsiu.**
Sponsored by: Generalitat de Catalunya. PERIS_SLT006/17/00249
Duration: 17/02/2018-09/04/2021

Lázaro L. **Microbiota i Factors (Epi)genètics en els trastorns del Neurodesenvolupament: TDAH i Autisme al Llarg de la vida a Catalunya (MENTAL-Cat).**
Sponsored by: Generalitat de Catalunya. PERIS_SLT006/17/00287
Duration: 17/02/2018-09/04/2021

Lázaro L. **Influencia de la genética y la epigenética en la eficacia del tratamiento del Trastorno Obsesivo-Compulsivo con terapia cognitivo-conductual o tratamiento farmacológico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01086
Duration: 01/01/2017-31/12/2020

Lázaro L. **Fenomenología y vias neuroinmunes de los comportamientos repetitivos y restrictivos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01122
Duration: 01/01/2020-31/12/2022

Méndez I. **Autolesió no suïcida en adolescents i adults joves a Catalunya: prevalença, característiques i implicacions clíniques.**
Sponsored by: Generalitat de Catalunya.
PERIS_SLT006/17/00159
Duration: 17/02/2018-31/12/2020

Morer A. **1/7-Collaborative Genomics Studies of Tourette Disorder.**
Sponsored by: National Institutes of Health.
INT_NIH_PAR-17-256
Duration: 15/06/2018-31/03/2023

Romero S. **Estudio multicéntrico del maltrato infantil en niños y adolescentes con trastornos psiquiátricos. Modificaciones epigénicas y correlatos con marcadores periféricos de inmunidad innata.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00685
Duration: 01/01/2016-30/11/2020

DOCTORAL THESES

Lázaro L, Mas S. **Farmacogenética y farmacogenómica de la respuesta terapéutica a fluoxetina en niños y adolescentes.**
PhD student: Teresa Torres Moral

4.5 Brain ischemia: clinical and experimental studies

LOCATION
CELLEX building, floor 3B

KEYWORDS
1. **Brain**
2. **Stroke**
3. **Cerebrovascular diseases**
4. **Neuroinflammation**
5. **Oxidative stress**

RELATED DISEASES
1. **Cerebrovascular diseases**
2. **Subarachnoid hemorrhage**
3. **Intraparenchymal hemorrhage**
4. **Ischemic stroke**
5. **Vascular cognitive impairment**
6. **Small vessel disease**

GROUP INVOLVED IN
AGAUR_SGR17: 00645, 01704
RED INVICTUSPLUS

Original publications

TOTAL	24
IF	134,04
Mean IF	5,59
Q1	88%
D1	29%
MA	50%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Ángel Chamorro (HCB)
T. 93 227 54 00 (Ext.: 2118)
achamorro@clinic.cat

RESEARCHERS
Sergio Amaro (HCB-IDIBAPS)
Josep Juan González Sánchez (HCB)
Carles Justicia (IIBB-CSIC)
Laura Llull (HCB)
Valerie Petegnief (IIBB-CSIC)
Anna M. Planas (IIBB-CSIC)
Arturo Renú (HCB)
Ramon Torné (HCB)
Xabier Urra (HCB-IDIBAPS)

ASSISTANT RESEARCHER
Ricard Valero (HCB)

POST-DOCTORAL RESEARCHERS
Jordi Pedragosa (IIBB-CSIC)
Salvatore Rudilosso (FCRB)

PRE-DOCTORAL RESEARCHERS
Maria Arbaizar (IIBB-CSIC)
Sara Figuerola (IIBB-CSIC)
Mattia Gallizioli (IIBB-CSIC)
Carlos Laredo (IDIBAPS)
Marina Purroy (IIBB-CSIC)

TECHNICIANS
Leonardo Márquez (IIBB-CSIC)
Francisca Ruíz Jaén (IDIBAPS)

NURSING STAFF
Elisabet Gonzalez Ribelles (HCB)
Yolanda Gonzalez Romero (HCB-FCRB)

ADMINISTRATIVE STAFF
Martha Elena Vargas (HCB-FCRB)

COLLABORATORS
Judit Nova (IDIBAPS)
Víctor Obach (HCB)
Angélica Salas (FCRB)
Víctor Vera (HCB)

PROBLEM

Strokes are caused by a sudden interruption of brain blood flow due to the obstruction or rupture of a cerebral artery. They represent the leading cause of permanent disability in adults, the second leading cause of mortality among people aged over 60, the leading cause of death among Spanish women and between 3% -7% of national health expenditure.

Despite the great progress in our ability to reopen obstructed arteries, we need to discover new strategies that protect poorly irrigated cells and allow us to minimise this serious health problem.

APPROACH

The group brings together clinical and basic researchers who plan a joint approach to learn about the problems of patients with cerebral vascular disorders. It studies, both in the laboratory and at the patient's bedside, the underlying basic mechanisms and the strategies for obtaining a better diagnosis and treatment.

Its interest focuses, in particular, on a more in-depth knowledge of the bi-directional relationship between the nervous system and the immune system, as well as on the search for new neuroprotective treatments.

IMPACT

The group's studies reveal the existence of a sophisticated interaction between an injured nervous system due to an alteration in blood supply and the immune system. They also show the great relevance of oxidative and nitrosative mechanisms in the pathogenesis of brain damage.

The group hypothesizes a role of immune cells in stroke progression. Moreover, the group identified antioxidant treatments sand provided robust experimental and clinical evidence supportive of beneficial effect that may have significant social health consequences.

The group's studies reveal the existence of a sophisticated interaction between an injured nervous system due to an alteration in blood supply and the immune system.

They also show the great relevance of oxidative and nitrosative mechanisms in the pathogenesis of brain damage. The group hypothesizes a role of immune cells in stroke progression. Moreover, the group identified antioxidant treatments sand provided robust experimental and clinical evidence supportive of beneficial effect that may have significant social health consequences.

RESEARCH LINES

- Blood-brain barrier disruption in cerebrovascular diseases.

- Brain-gut cross-talk in stroke: targeting gut barrier dysfunction and immune responses to improve stroke outcome.

- Inflammatory and immune responses to stroke.

- The chemical optimization of cerebral embolectomy.

- Therapeutic use of uric acid as peroxynitrite scavenger in acute ischemic stroke.

- Vascular changes with aging and in animal models of vascular dementia.

PUBLICATIONS

Originals / I.F.: 134.04

1. Veltkamp R, Pearce LA, Korompoki E, Sharma M, Kasner SE, Toni DS, Ameriso SF, Mundl H, Tatlisumak T, Hankey GJ, Lindgren A, Berkowitz SD, Arauz A, Ozturk S, Muir KW, Chamorro Á, Perera K, Shuaib A, Rudilosso S, Shoamanesh A, Connolly SJ, Hart RG. **Characteristics of Recurrent Ischemic Stroke After Embolic Stroke of Undetermined Source: Secondary Analysis of a Randomized Clinical Trial.** *Jama Neurology.* 77(10):1233-1240. I.F.: 13.608

2. Guasp M, Laredo C, Urra X. **Higher solar irradiance is associated with a lower incidence of COVID-19.** *Clinical Infectious Diseases.* 71(16):2269-2271. I.F.: 8.313

3. Gallizioli M, Miró-Mur F, Otxoa-de-Amezaga A, Cugota R, Salas-Perdomo A, Justicia C, Brait VH, Ruiz-Jaén F, Arbaizar-Rovirosa M, Pedragosa J, Bonfill-Teixidor E, Gelderblom M, Magnus T, Cano E, Del Fresno C, Sancho D, Planas AM. **Dendritic Cells and Microglia Have Non-redundant Functions in the Inflamed Brain with Protective Effects of Type 1 cDCs.** *Cell Reports.* 33(3):108291. I.F.: 8.109

4. Rudilosso S, Rodríguez A, Amaro S, Obach V, Renú A, Llull L, Laredo C, Marín ÁA, Vargas A, Urra X, Chamorro Á. **Value of Vascular and Non-Vascular Pattern on Computed Tomography Perfusion in Patients With Acute Isolated Aphasia.** *Stroke.* 51(8):2480-2487. I.F.: 7.190

5. Rudilosso S, Laredo C, Vera V, Vargas M, Renú A, Llull L, Obach V, Amaro S, Urra X, Torres F, Jiménez-Fàbrega FX, Chamorro Á. **Acute Stroke Care Is at Risk in the Era of COVID-19: Experience at a Comprehensive Stroke Center in Barcelona.** *Stroke.* 51(7):1991-1995. I.F.: 7.190

6. Mikulík R, Eckstein J, Pearce LA, Mundl H, Rudilosso S, Olavarría VV, Shoamanesh A, Chamorro Á, Martí-Fàbregas J, Veltkamp R, Öztürk Ş, Tatlisumak T, Peacock WF, Berkowitz SD, Connolly SJ, Hart RG. **Frequency and Predictors of Major Bleeding in Patients With Embolic Strokes of Undetermined Source: NAVIGATE-ESUS Trial.** *Stroke.* 51(7):2139-2147. I.F.: 7.190

7. Olive-Gadea M; Crespo C; Granes C; Hernandez-Perez M; Pérez de la Ossa N; Laredo C; Urra X; Carlos Soler J; Soler A; Puyalto P; Cuadras P; Marti C; Ribo M. **Deep Learning Based Software to Identify Large Vessel Occlusion on Noncontrast Computed Tomography**. *Stroke.* 51(10):3133-3137. I.F.: 7.190

8. Santana D; Laredo C; Renú A; Rudilosso S; Llull L; Urra X; Obach V; López-Rueda A; Macías N; Amaro S; Chamorro A. **"Incidence and Clinico-Radiological Correlations of Early Arterial Reocclusion After Successful Thrombectomy in Acute Ischemic Stroke".** *Translational Stroke Research.* 11(6):1314-1321. I.F.: 5.780

9. Jiménez-Xarrié E, Pérez B, Dantas AP, Puertas-Umbert L, Martí-Fabregas J, Chamorro Á, Planas AM, Vila E, Jiménez-Altayó F. **Uric Acid Treatment After Stroke Prevents Long-Term Middle Cerebral Artery Remodelling and Attenuates Brain Damage in Spontaneously Hypertensive Rats.** *Translational Stroke Research.* 11(6):1332-1347. I.F.: 5.780

10. Laredo C, Renú A, Tudela R, Lopez-Rueda A, Urra X, Llull L, Macías NG, Rudilosso S, Obach V, Amaro S, Chamorro Á. **The accuracy of ischemic core perfusion thresholds varies according to time to recanalization in stroke patients treated with mechanical thrombectomy: A comprehensive whole-brain computed tomography perfusion study.** *Journal of Cerebral Blood Flow and Metabolism.* 40(5):966-977. I.F.: 5.681

11. Pedragosa, Jordi; Miro-Mur, Francesc; Otxoa-de-Amezaga, Amaia; Justicia, Carles; Ruiz-Jaen, Francisca; Ponsaerts, Peter; Pasparakis, Manolis; Planas, Anna M. **CCR2 deficiency in monocytes impairs angiogenesis and functional recovery after ischemic stroke in mice.** *Journal of Cerebral Blood Flow And Metabolism.* 40(1):S98-S116. I.F.: 5.681

12. Rajan, Wenson D; Wojtas, Bartosz; Gielniewski, Bartlomiej; Miro-Mur, Francesc; Pedragosa, Jordi; Zawadzka, Malgorzata; Pilanc, Paulina; Planas, Anna M; Kaminska, Bozena. **Defining molecular identity and fates of CNS-border associated macrophages after ischemic stroke in rodents and humans.** *Neurobiology of Disease.* 137:104722. I.F.: 5.332

13. Siegler JE, Cardona P, Arenillas JF, Talavera B, Guillen AN, Chavarría-Miranda A, de Lera M, Khandelwal P, Bach I, Patel P, Singla A, Requena M, Ribo M, Jillella DV, Rangaraju S, Nogueira RG, Haussen DC, Vazquez AR, Urra X, Chamorro Á, Román LS, Thon JM, Then R, Sanborn E, de la Ossa NP, Millàn M, Ruiz IN, Mansour OY, Megahed M, Tiu C, Terecoasa EO, Radu RA, Nguyen TN, Curiale G, Kaliaev A, Czap AL, Sebaugh J, Zha AM, Liebeskind DS, Ortega-Gutierrez S, Farooqui M, Hassan AE, Preston L, Patterson MS, Bushnaq S, Zaidat O, Jovin TG. **EXPRESS: Cerebrovascular events and outcomes in hospitalized patients with COVID-19: The SVIN COVID-19 Multinational Registry.** *International Journal of Stroke.* I.F.: 4.882

14. Requena M, Olivé-Gadea M, Boned S, Ramos A, Cardona P, Urra X, Serena J, Silva Y, Purroy F, Ustrell X, Abilleira S, Tomasello A, Perez de la Ossa N, Molina CA, Ribo M, Rubiera M, Catalan Stroke Code and Reperfusion Consortium (Cat-SCR). **Clinical and neuroimaging criteria to improve the workflow in transfers for endovascular treatment evaluation.** *International Journal of Stroke.* 15(9):988-994. I.F.: 4.882

15. Terceño M, Silva Y, Bashir S, Vera-Monge VA, Cardona P, Molina C, Chamorro Á, de la Ossa NP, Hernández-Pérez M, Werner M, Camps-Renom P, Rodríguez-Campello A, Cánovas D, Purroy F, Serena J, Catalan Stroke Code and Reperfusion Consortium (Cat-SCR). **Impact of general anesthesia on posterior circulation large vessel occlusions after endovascular thrombectomy.** *International Journal of Stroke.* I.F.: 4.882

16. Martinez-Majander N, Ntaios G, Liu YY, Ylikotila P, Joensuu H, Saarinen J, Perera KS, Marti-Fabregas J, Chamorro A, Rudilosso S, Prats-Sanchez L, Berkowitz SD, Mundl H, Themeles E, Tiainen M, Demchuk A, Kasner SE, Hart RG, Tatlisumak T, NAVIGATE ESUS investigators. **Rivaroxaban versus aspirin for secondary prevention of ischemic stroke in patients with cancer: A subgroup analysis of the navigate esus randomized trial.** *European Journal of Neurology.* 27(5):841-848. I.F.: 4.516

17. Renú Jornet A; Urra X; Laredo C; Montejo C; Rudilosso S; Llull L; Blasco J; Amaro S; Torne R; Obach V; Macho J; Chamorro A. **Benefit from mechanical thrombectomy in acute ischemic stroke with fast and slow progression.** *Journal of Neurointerventional Surgery.* 12(2):132-135. I.F.: 4.460

18. Laredo C, Renú A, Llull L, Tudela R, López-Rueda A, Urra X, Macías NG, Rudilosso S, Obach V, Amaro S, Chamorro Á. **Elevated glucose is associated with hemorrhagic transformation after mechanical thrombectomy in acute ischemic stroke patients with severe pretreatment hypoperfusion.** *Scientific Reports.* 10(1):10588. I.F.: 3.998

19. Torné R; Culebras D; Sanchez-Etayo G; García-García S; Muñoz G; Llull L; Amaro S; Heering C; Blasco J; Zavala E; Enseñat J. **Double hemispheric Microdialysis study in poor-grade SAH patients.** *Scientific Reports.* 10(1):7466. I.F.: 3.998

20. Miró-Mur F; Urra X; Ruiz-Jaén F; Pedragosa J; Chamorro Á; Planas AM. **Antigen-Dependent T Cell Response to Neural Peptides After Human Ischemic Stroke.** *Frontiers in Cellular Neuroscience.* 14:206. I.F.: 3.921

21. Renú A; Blasco J; Laredo C; Llull L; Urra X; Obach V; López-Rueda A; Rudilosso S; Zarco F; González E; Guio JD; Amaro S; Chamorro A. **Carotid stent occlusion after emergent stenting in acute ischemic stroke: Incidence, predictors and clinical relevance.** *Atherosclerosis.* 313:8-13. I.F.: 3.919

22. Gil-Badenes J, Valero R, Valentí M, Macau E, Bertran MJ, Claver G, Bioque M, Baeza I, Bastidas Salvadó A, Lombraña Mencia M, Pacchiarotti I, Bernardo M, Vieta E. **Electroconvulsive therapy protocol adaptation during the COVID-19 pandemic.** *Journal of Affective Disorders.* 276:241-248. I.F.: 3.892

23. Arikan F., Errando N., Lagares A., Gándara D., Gabarros A., López-Ojeda P., Ibáñez J., Brell M., Gómez P.A., Fernández-Alén J.A., Morera J., Horcajadas A., Vanaclocha V., Llácer J.L., Baño-Ruiz E., Gonçalves-Estella J.M., Torné R., Hoyos J.A., Sarabia R., Arrese I., Rodríguez-Boto G., de la Lama A., Domínguez J., Martín-Láez R., Santamarta-Gómez D., Delgado-López P.D., Ley-Urzaiz L., Mateo O., Iza B., Orduna-Martínez J., de Asís Lorente-Muñoz F., Muñoz-Hernández F., Iglesias J., Vilalta J. **Variability of Clinical and Angiographic Results Based on the Treatment Preference (Endovascular or Surgical) of Centers Participating in the Subarachnoid Hemorrhage Database of the Working Group of the Spanish Society of Neurosurgery.** *World Neurosurgery.* 135:e339-e349. I.F.: 1.829

24. Sarto J; Semerano A; Moreno J; Mayà-Casalprim G; Blasco J; Urra X. **Spinal cord hemodynamic infarction after vertebral artery endovascular trapping despite preserved flow in the anterior spinal artery.** *Journal of Spinal Cord Medicine.* 1-4. I.F.: 1.816

Review / I.F.: 10.557

1. Leira EC, Russman AN, Biller J, Brown DL, Bushnell CD, Caso V, Chamorro A, Creutzfeldt CJ, Cruz-Flores S, Elkind MSV, Fayad P, Froehler MT, Goldstein LB, Gonzales NR, Kaskie B, Khatri P, Livesay S, Liebeskind DS, Majersik JJ, Moheet AM, Romano JG, Sanossian N, Sansing LH, Silver B, Simpkins AN, Smith W, Tirschwell DL, Wang DZ, Yavagal DR, Worrall BB. **Preserving stroke care during the COVID-19 pandemic: Potential issues and solutions.** *Neurology.* 95(3):124-133. I.F.: 8.770

2. Carbayo Á; Sarto J; Santana D; Compta Y; Urra X. **Hemichorea as Presentation of Acute Cortical Ischemic Stroke. Case Series and Review of the Literature.** *Journal of Stroke & Cerebrovascular Diseases.* 29(10):105150. I.F.: 1.787

Letters / I.F.: 24.78

1. Espinosa G, Araujo O, Amaro S, Bodro M, Moreno PJ, Moreno R, Ugarte A, Cervera R. **COVID-19 and Behçet's disease: clinical case series.** *Annals of the Rheumatic Diseases.* 80(3):1-2. I.F.: 16.102

2. Mayà-Casalprim G; Rodríguez-Vázquez A; Sarto J; Llull L. **Floating right heart thrombus causing pulmonary embolism in a patient with acute ischaemic stroke: A case report and review of literature.** *Neurologia.* 35(9):661-663. I.F.: 2.283

3. Mayà-Casalprim G; Serrano E; Oberoi HK; Llull L. **Isolated bilateral abducens nerve palsy secondary to clivus metastasis of prostate adenocarcinoma undetected by magnetic resonance imaging.** *Neurologia.* 35(8):599-601. I.F.: 2.283

4. Montejo C; Rodríguez A; Pascual-Vicente M; Renú A. **Transient contrast-induced encephalopathy after internal carotid artery embolisation prior to surgery for nasopharyngeal carcinoma.** *Neurologia.* 35(4):287-289. I.F.: 2.283

5. Torné R; Rodríguez-Hernández A. **In Reply to Letter to the Editor Regarding "Safety and Feasibility Assessment of the O-Arm as an Intraoperative Angiography Device in Aneurysm Surgery".** *World Neurosurgery.* 136:420. I.F.: 1.829

Case Reports / I.F.: 7.081

1. Montejo C; Vicente M; Sánchez A; Renú A. **Basilar artery thrombosis caused by vertebral dissection secondary to brachial plexus block.** *Neurologia.* 35(1):56-58. I.F.: 2.283

2. Rodríguez-Hernández A; Torné R; Blanco Ibáñez de Opacua A; Brugada-Bellsolà F; Remollo S; Domínguez CJ; Rimbau JM. **Amateur Endurance Athletes: At Higher Risk of Suffering Dural Arteriovenous Fistulas? Report of 3 Cases.** *World Neurosurgery.* 140:32-36. I.F.: 1.829

3. Rudilosso S; Esteller D; Urra X; Chamorro Á. **Thalamic perforating artery stroke on computed tomography perfusion in a**

patient with coronavirus disease 2019. *Journal of Stroke & Cerebrovascular Diseases.* 29(8):104974. I.F.: 1.787

4. Jordi Sarto, Gerard Mayà-Casalprim, Álvaro Carbayo, Daniel Santana, Xabier Urra. **Retinal and Optic Nerve Ischemia due to an Internal Carotid Artery Dissection: The "Cup of Wine" Sign.** *European Neurology.* 83(3):325-326. I.F.: 1.182

Clinical Guidelines / I.F.: 4.566

1. Rodríguez-Yañez M, Gómez-Choco M, López-Cancio E, Amaro S, Alonso de Leciñana M, Arenillas JF, Ayo-Martín O, Castellanos M, Freijo MM, García-Pastor A, Gomis M, Martínez Sánchez P, Morales A, Palacio-Portilla EJ, Roquer J, Segura T, Serena J, Vivancos-Mora J, Fuentes B, Comité ad hoc del Grupo de Estudio de Enfermedades Cerebrovasculares de la Sociedad Española de Neurología. **Stroke prevention in patients with arterial hypertension: Recommendations of the Spanish Society of Neurology's Stroke Study Group.** *Neurologia.* S0213-4853(20):30229-2. I.F.: 2.283

2. Palacio-Portilla EJ, Roquer J, Amaro S, Arenillas JF, Ayo-Martín O, Castellanos M, Freijo MM, Fuentes B, García-Pastor A, Gomis M, Gómez-Choco M, López-Cancio E, Martínez-Sánchez P, Morales A, Rodríguez-Yáñez M, Segura T, Serena J, Vivancos-Mora J, de Leciñana MA, Comité ad hoc del Grupo de Estudio de Enfermedades Cerebrovasculares de la Sociedad Española de Neurología. **Dyslipidemias and stroke prevention: recommendations of the Study Group of Cerebrovascular Diseases of the Spanish Society of Neurology.** *Neurologia.* S0213-4853(20):30299-1. I.F.: 2.283

Consortium Publications / I.F.:186.966

1. Zhang Q, Bastard P, Liu Z, Le Pen J, Moncada-Velez M, Chen J, Ogishi M, Sabli IKD, Hodeib S, Korol C, Rosain J, Bilguvar K, Ye J, Bolze A, Bigio B, Yang R, Arias AA, Zhou Q, Zhang Y, Onodi F, Korniotis S, Karpf L, Philippot Q, Chbihi M, Bonnet-Madin L, Dorgham K, Smith N, Schneider WM, Razooky BS, Hoffmann HH, Michailidis E, Moens L, Han JE, Lorenzo L, Bizien L, Meade P, Neehus AL, Ugurbil AC, Corneau A, Kerner G, Zhang P, Rapaport F, Seeleuthner Y, Manry J, Masson C, Schmitt Y, Schlüter A, Le Voyer T, Khan T, Li J, Fellay J, Roussel L, Shahrooei M, Alosaimi MF, Mansouri D, Al-Saud H, Al-Mulla F, Almourfi F, Al-Muhsen SZ, Alsohime F, Al Turki S, Hasanato R, van de Beek D, Biondi A, Bettini LR, D'Angio' M, Bonfanti P, Imberti L, Sottini A, Paghera S, Quiros-Roldan E, Rossi C, Oler AJ, Tompkins MF, Alba C, Vandernoot I, Goffard JC, Smits G, Migeotte I, Haerynck F, Soler-Palacin P, Martin-Nalda A, Colobran R, Morange PE, Keles S, Çölkesen F, Ozcelik T, Yasar KK, Senoglu S, Karabela ?N, Rodríguez-Gallego C, Novelli G, Hraiech S, Tandjaoui-Lambiotte Y, Duval X, Laouénan C,, Snow AL, Dalgard CL, Milner JD, Vinh DC, Mogensen TH, Marr N, Spaan AN, Boisson B, Boisson-Dupuis S, Bustamante J, Puel A, Ciancanelli MJ, Meyts I, Maniatis T, Soumelis V, Amara A, Nussenzweig M, García-Sastre A, Krammer F, Pujol A, Duffy D, Lifton RP, Zhang SY, Gorochov G, Béziat V, Jouanguy E, Sancho-Shimizu V, Rice CM, Abel L, Notarangelo LD, Cobat A, Su HC, Casanova JL COVID-STORM Clinicians, COVID Clinicians, Imagine COVID Group, French COVID Cohort Study Group, CoV-Contact Cohort, Amsterdam UMC Covid-19 Biobank, COVID Human Genetic Effort, NIAID-USUHS/TAGC COVID Immunity Group. **Inborn errors of type I IFN immunity in patients with life-threatening COVID-19.** *Science.* 370(6515):eabd4570. I.F.: 41.846

2. Bastard P, Rosen LB, Zhang Q, Michailidis E, Hoffmann HH, Zhang Y, Dorgham K, Philippot Q, Rosain J, Béziat V, Manry J, Shaw E, Haljasmägi L, Peterson P, Lorenzo L, Bizien L, Trouillet-Assant S, Dobbs K, de Jesus AA, Belot A, Kallaste A, Catherinot E, Tandjaoui-Lambiotte Y, Le Pen J, Kerner G, Bigio B, Seeleuthner Y, Yang R, Bolze A, Spaan AN, Delmonte OM, Abers MS, Aiuti A, Casari G, Lampasona V, Piemonti L, Ciceri F, Bilguvar K, Lifton RP, Vasse M, Smadja DM, Migaud M, Hadjadj J, Terrier B, Duffy D, Quintana-Murci L, van de Beek D, Roussel L, Vinh DC, Tangye SG, Haerynck F, Dalmau D, Martinez-Picado J, Brodin P, Nussenzweig MC, Boisson-Dupuis S, Rodríguez-Gallego C, Vogt G, Mogensen TH, Oler AJ, Gu J, Burbelo PD, Cohen JI, Biondi A, Bettini LR, D'Angio M, Bonfanti P, Rossignol P, Mayaux J, Rieux-Laucat F, Husebye ES, Fusco F, Ursini MV, Imberti L, Sottini A, Paghera S, Quiros-Roldan E, Rossi C, Castagnoli R, Montagna D, Licari A, Marseglia GL, Duval X, Ghosn J,, Tsang JS, Goldbach-Mansky R, Kisand K, Lionakis MS, Puel A, Zhang SY, Holland SM, Gorochov G, Jouanguy E, Rice CM, Cobat A, Notarangelo LD, Abel L, Su HC, Casanova JL HGID Lab, NIAID-USUHS Immune Response to COVID Group, COVID Clinicians, COVID-STORM Clinicians, Imagine COVID Group, French COVID Cohort Study Group, Milieu Intérieur Consortium, CoV-Contact Cohort, Amsterdam UMC Covid-19 Biobank, COVID Human Genetic Effort. **Auto-antibodies against type I IFNs in patients with life-threatening COVID-19.** *Science.* 370(6515):eabd4585. I.F.: 41.846

3. Jean-Laurent Casanova, Helen C Su, COVID Human Genetic Effort. **A Global Effort to Define the Human Genetics of Protective Immunity to SARS-CoV-2 Infection.** *Cell.* 181(6):1194-1199. I.F.: 38.637

4. Hugues Chabriat, Claudio L Bassetti, Ute Marx, Marie-Laure Audoli-Inthavong, Aurore Sors, Estelle Lambert, Marine Wattez, Dirk M Hermann, RESTORE BRAIN study investigators. **Safety and efficacy of GABAA α5 antagonist S44819 in patients with ischaemic stroke: a multicentre, double-blind, randomised, placebo-controlled trial.** *Lancet Neurol.* 19(3):226-233. I.F.: 30.039

5. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

6. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

7. COVIDSurg Collaborative. **Delaying surgery for patients with a previous SARS-CoV-2 infection.** *British Journal of Surgery.* 107(12):e601-e602. I.F.: 5.676

8. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M,

Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of the American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

GRANTS FOR RESEARCH IN PROGRESS

Amaro S. **Blood brain barrier disruption after subarachnoid hemorrhage: clinical relevance, role of hyperglycemia and effect of potentiating endogenous antioxidant mechanisms. A translational study.**
Sponsored by: Fundació la Marató de TV3.
Ictus_17
Duration: 10/07/2018-09/07/2021

Amaro S. **Daño de la pared arterial en el ictus isquémico agudo: detección con RM avanzada, mecanismos subyacentes y valor pronostico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00711
Duration: 01/01/2017-30/06/2021

Chamorro A. **The Chemical Optimization of Cerebral Embolectomy (CHOICE) Trial.**
Sponsored by: Fundació la Marató de TV3.
Ictus_17
Duration: 11/04/2018-10/04/2021

Chamorro A. **Red Temática de Investigación Cooperativa en Salud - Enfermedades vasculares cerebrales (Ictus).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0019/0014
Duration: 01/01/2017-31/12/2021

Chamorro A, Urra X. **Mecanismos implicados en el fenómeno de no reflujo en el ictus isquémico agudo: Una aproximación traslacional para mejorar la eficacia de la trombectomía mecánica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00444
Duration: 01/01/2019-31/12/2021

Chamorro A. **Ácido úrico encapsulado en liposomas como neuroprotector en ictus isquémico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_DTS18/00010
Duration: 01/01/2019-31/12/2021

Chamorro A. **Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial.**
Sponsored by: National Institutes of Health.
INT_NIH_PAR-11-173
Duration: 01/03/2018-28/02/2021

Llull L. **Impact of time to achieve blood pressure control on hematoma expansion in patients with acute intracerebral hemorrhage.**
Sponsored by: Fundació la Marató de TV3.
Ictus_17
Duration: 27/03/2018-26/03/2021

Planas AM. **Grup d'Investigació Cerebrovascular (GICV).**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00645
Duration: 01/01/2017-30/09/2021

Torné R, Amaro S. **Daño isquémico cerebral en la hemorragia subaracnoidea aneurismática: un estudio multimodal del papel de la microtrobosis y del estrés oxidativo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00936
Duration: 01/01/2020-31/12/2022

Urra X. **Brain-gut cross-talk in stroke: targeting gut barrier dysfunction and immune responses to improve stroke outcome.**
Sponsored by: Fundació la Marató de TV3.
Ictus_17
Duration: 10/07/2018-09/07/2021

DOCTORAL THESES

Chamorro A, Urra X. **Prognostic significance of the infarct size and location in patients with ischemic stroke.**
PhD student: Yashu Zhao

Planas AM, Petegnief V. **Mechanisms involved in microglia phagocytic activity in brain ischemia.**
PhD Student: Amaia Ochoa de Amezaga Sainz de la Maza

Planas AM, Miró F. **Eje cerebro-intestino en el ictus: estudio de la respuesta inmune, microbiota y barrera intestinal.**
PhD student: Laura Diaz Marugan

Planas AM, Miró F. **Identity and functions of dendritic cell subsets in ischaemia-induced neuroinflammation.**
PhD Student: Mattia Gallizioli

4.6 Theoretical neurobiology of cortical circuits

LOCATION
CEK building, floor -1

KEYWORDS
1. **Working memory**
2. **Prefrontal cortex**
3. **Neural network**
4. **NMDA receptor**
5. **Sleep**

RELATED DISEASES
1. **Autoimmune encephalitis**
2. **Schizophrenia**
3. **Depression**

GROUP INVOLVED IN
AGAUR_SGR17: 01565

Original publications

TOTAL	5
IF	49,39
Mean IF	9,88
Q1	100%
D1	80%
MA	80%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Albert Compte (IDIBAPS)
T. 93 227 54 00 (Ext.: 4151)
acompte@clinic.cat

ASSISTANT RESEARCHERS
Daniel Linares (CIBER)

POST-DOCTORAL RESEARCHERS
Joao Barbosa (IDIBAPS)
Alexandre Mahrach (IDIBAPS)
Manuel Molano Mazón (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
David Sánchez Bestué (IDIBAPS)
Heike Stein (IDIBAPS)
Melanie Tschiersch (IDIBAPS)

TECHNICIANS
Alba Morató (IDIBAPS)
Laia Prades (IDIBAPS)

PROBLEM

Many neurological and psychiatric disorders that affect the activity of the brain eventually end up causing alterations in the cognitive functions of the prefrontal cortex.

These alterations are subtle and difficult to treat but can have extremely incapacitating effects on normal life.

Of all the cognitive functions affected, short-term memory (or working memory) is one of the most interesting to study, and requires understanding of the neural circuits in order to try and improve patient well-being.

APPROACH

The group studies cognitive function in patients with autoimmune encephalitis and in patients with schizophrenia based on computer-based behavioural testing, EEG recordings and fMRI.

These tests on humans are combined with the analysis of electrophysiological data recorded in the cerebral cortex of animals while they perform working memory tasks.

The ultimate objective is to formulate computational models in silico that link neural activity with the human cognitive function and serve as a mechanistic model with the predictive power to understand brain diseases.

IMPACT

The group has made important contributions to defining a mechanistic spatial working-memory model based on computational simulations.

They have validated this model with electrophysiological and behavioural data in non-human primates and demonstrated the way in which the model makes behavioural predictions for validation in behavioural experiments in humans.

In experiments with patients, highly specific alterations were detected in spatial working-memory behavioural parameters that could be useful in diagnosing or monitoring these diseases.

RESEARCH LINES

- Network mechanisms of working memory in the prefrontal cortex.

- The NMDAR hypothesis of schizophrenia.

- The role of NMDARs in slow-wave sleep.

- The role of NMDARs in working memory.

PUBLICATIONS

Originals / I.F.: 49.385

1. Barbosa J; Stein H; Martinez RL; Galan-Gadea A; Li S; Dalmau J; Adam KCS; Valls-Solé J; Constantinidis C; Compte A. **Interplay between persistent activity and activity-silent dynamics in the prefrontal cortex underlies serial biases in working memory.** *Nature Neuroscience.* 23(8):1016-1024. I.F.: 20.071

2. Stein H; Barbosa J; Rosa-Justicia M; Prades L; Morató A; Galan-Gadea A; Ariño H; Martinez-Hernandez E; Castro-Fornieles J; Dalmau J; Compte A. **Reduced serial dependence suggests deficits in synaptic potentiation in anti-NMDAR encephalitis and schizophrenia.** *Nature Communications.* 11(1):4250. I.F.: 12.121

3. Ariño H, Muñoz-Lopetegi A, Martinez-Hernandez E, Armangue T, Rosa-Justicia M, Escudero D, Matos N, Graus F, Sugranyes G, Castro-Fornieles J, Compte A, Dalmau J, Santamaria J. **Sleep disorders in anti-NMDAR encephalitis.** *Neurology.* 95(6):e671-e684. I.F.: 8.770

4. Marin-Campos R; Dalmau J; Compte A; Linares D. **StimuliApp: Psychophysical tests on mobile devices.** *Behavior Research Methods.* I.F.: 4.425

5. Barbosa J; Compte A. **Build-up of serial dependence in color working memory.** *Scientific Reports.* 10(1):10959. I.F.: 3.998

GRANTS FOR RESEARCH IN PROGRESS

Compte A. **Dynamics in neuronal networks.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01565
Duration: 01/01/2017-30/09/2021

Compte A, Castro-Fornieles J, Dalmau J. **Inmune-mediated diseases of the synapse: symptoms, brain networks, and the link to human memory.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PIE16/00014
Duration: 01/01/2017-30/06/2021

Compte A. **Mecanismos sinápticos y de red de interferencias en memoria de trabajo.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-094190-B-I00
Duration: 01/01/2019-31/12/2021

Compte A. **Neural mechanisms underlying unconscious working memory.**
Sponsored by: Fundação BIAL. INT_BIAL_18
Duration: 01/05/2019-30/04/2021

DOCTORAL THESES

Compte A. **Synaptic and circuit mechanisms of working memory and their dysfunction in anti-NMDA receptor encephalitis and schizophrenia.**
PhD student: Heike Stein

4.7 Pathogenesis of autoimmune neuronal disorders

LOCATION
CELLEX building, floor 3A

KEYWORDS
1. **Autoantibodies**
2. **Encephalitis**
3. **Autoimmunity**
4. **Paraneoplastic**
5. **Multiple sclerosis**
6. **Demyelinating disorders**

RELATED DISEASES
1. **Autoimmune encephalitis**
2. **Paraneoplastic neurologic disorders**
3. **Multiple sclerosis and related demyelinating diseases**
4. **Cancer including brain tumors**

GROUP INVOLVED IN
AGAUR_SGR17: 00266
CIBERER
REEM

AWARDS
Frontiers of Science Award
Institution: American Psychiatry Association
Awardee/s: Josep Dalmau

Top 1% most cited researcher globally
Institution: Clarivate Analytics
Awardee/s: Josep Dalmau, Francesc Graus & Albert Saiz

Original publications

TOTAL	42
IF	311,85
Mean IF	7,43
Q1	76%
D1	62%
MA	43%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep Dalmau (ICREA-IDIBAPS)
T. 93 227 17 38
jdalmau@clinic.cat

EMERITUS
Francesc Graus (IDIBAPS)

RESEARCHERS
Thais Armangué (IDIBAPS)
Pedro Luis Gambús (HCB)
Eugenia Martínez Hernández (HCB-IDIBAPS)
Lidia Sabater (FCRB)
Albert Saiz (HCB)

ASSISTANT RESEARCHERS
Pablo Jercog (IDIBAPS)
Jesus Planagumà (FCRB)

POST-DOCTORAL RESEARCHERS
Helena Ariño (IDIBAPS)
Francesco Mannara (IDIBAPS)
Marija Radosevic (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Anna García Serra (IDIBAPS)
Mar Guasp (HCB)
Estibaliz Maudes (IDIBAPS)
Landa Medrano (FCRB)
Marta Muñoz (IDIBAPS)
Amaia Muñoz (HCB)
Gemma Olivé (IDIBAPS)
Paula Peixoto (IDIBAPS)
Amirpasha Zamani (IDIBAPS)

TECHNICIANS
Esther Aguilar (IDIBAPS)
Mercedes Alba (FCRB)
Eva Maria Caballero (FCRB)
Maria Araceli Mellado (IDIBAPS)

ADMINISTRATIVE STAFF
Maria Rodés (IDIBAPS)

COLLABORATORS
Domingo Escudero (HCB)
Myrna Rosenfeld (IDIBAPS)

PROBLEM

The principal objective of the group is the study of autoimmune/inflammatory brain diseases including multiple sclerosis, autoimmune encephalitis and paraneoplastic neurologic disorders among others.

We aim to identify novel biologic, genetic, immunologic, and neuroimaging biomarkers that will allow for early and accurate disease diagnoses and have prognostic value.

Studies are also aimed at elucidating the underlying immunopathogenic disease mechanisms through studies that link immunological processes to abnormal neuronal function.

APPROACH

The group aims to discover the mechanisms of these diseases by carrying out studies aimed at understanding how autoimmunity alters the structure and function of neurons and brain circuits that results in changes in behavior, memory, movements and other neurological symptoms.

The research is carried out in the clinic with the participation of patients and in the laboratory where patient derived samples (generally blood or cerebrospinal fluid) are studies.

Research techniques include antibody screening with immune staining using brain tissue, immunocytochemistry with cell preparations, brain receptor expression techniques in cell assays, immunoprecipitation and sequencing of neuronal proteins, and the determination of the effects of antibodies at the synaptic and brain-circuit levels.

IMPACT

The impact has been considerable. The group has discovered 16 novel diseases, developed diagnostic guidelines for autoimmune brain disease, modified diagnostic and treatment paradigms in neurology and psychiatry, and created diagnostic tests.

It has discovered the basic mechanisms of these diseases and produced animal models.

It has written chapters on the diseases in the most important books on internal medicine (Harrison), paediatrics (Nelson), neurology (Daroff) and oncology (Abeloff). Two members of the group appear on the Clarivate list as highly cited authors in neuroscience and behaviour.

RESEARCH LINES

- Syndromes and mechanisms of paraneoplastic and autoimmune encephalitis.

- Multiple sclerosis and other demyelinating syndromes.

- Pediatric neuroimmunologic diseases.

PUBLICATIONS

Originals / I.F.: 311.852

1. Armangue T, Olivé-Cirera G, Martínez-Hernandez E, Sepulveda M, Ruiz-Garcia R, Muñoz-Batista M, Ariño H, González-Álvarez V, Felipe-Rucián A, Jesús Martínez-González M, Cantarín-Extremera V, Concepción Miranda-Herrero M, Monge-Galindo L, Tomás-Vila M, Miravet E, Málaga I, Arrambide G, Auger C, Tintoré M, Montalban X, Vanderver A, Graus F, Saiz A, Dalmau J, Spanish Pediatric anti-MOG Study Group. **Associations of paediatric demyelinating and encephalitic syndromes with myelin oligodendrocyte glycoprotein antibodies: a multicentre observational study**. *Lancet Neurol.* 19(3):234-246. I.F.: 30.039

2. Barbosa J; Stein H; Martinez RL; Galan-Gadea A; Li S; Dalmau J; Adam KCS; Valls-Solé J; Constantinidis C; Compte A. **Interplay between persistent activity and activity-silent dynamics in the prefrontal cortex underlies serial biases in working memory**. *Nature Neuroscience*. 23(8):1016-1024. I.F.: 20.071

3. Andorrà M; Alba-Arbalat S; Camos-Carreras A; Gabilondo I; Fraga-Pumar E; Torres-Torres R; Pulido-Valdeolivas I; Tercero-Uribe AI; Guerrero-Zamora AM; Ortiz-Perez S; Zubizarreta I; Sola-Valls N; Llufriu S; Sepulveda M; Martinez-Hernandez E; Armangue T; Blanco Y; Villoslada P; Sanchez-Dalmau B; Saiz A; Martinez-Lapiscina EH. **Using Acute Optic Neuritis Trials to Assess Neuroprotective and Remyelinating Therapies in Multiple Sclerosis**. *Jama Neurology*. 77(2):234-244. I.F.: 13.608

4. Stein H; Barbosa J; Rosa-Justicia M; Prades L; Morató A; Galan-Gadea A; Ariño H; Martinez-Hernandez E; Castro-Fornieles J; Dalmau J; Compte A. **Reduced serial dependence suggests deficits in synaptic potentiation in anti-NMDAR encephalitis and schizophrenia.** *Nature Communications*. 11(1):4250. I.F.: 12.121

5. Mannara F, Radosevic M, Planagumà J, Soto D, Aguilar E, García-Serra A, Maudes E, Pedreño M, Paul S, Doherty J, Quirk M, Dai J, Gasull X, Lewis M, Dalmau J. **Allosteric modulation of NMDA receptors prevents the antibody effects of patients with anti-NMDAR encephalitis.** *Brain*. 143(9):2709-2720. I.F.: 11.337

6. Carceles-Cordon M, Mannara F, Aguilar E, Castellanos A, Planagumà J, Dalmau J. **NMDAr antibodies alter dopamine receptors and cause psychotic behavior in mice**. *Annals of Neurology*. 88(3):603-613. I.F.: 9.037

7. Matute C; Palma A; Serrano-Regal MP; Maudes E; Barman S; Sánchez-Gómez MV; Domercq M; Goebels N; Dalmau J. **N-Methyl-D-Aspartate Receptor Antibodies in Autoimmune Encephalopathy Alter Oligodendrocyte Function.** *Annals of Neurology*. 87(5):670-676. I.F.: 9.037

8. Landa J, Gaig C, Plagumà J, Saiz A, Antonell A, Sanchez-Valle R, Dalmau J, Graus F, Sabater L. **Effects of IgLON5 antibodies on neuronal cytoskeleton: a link between autoimmunity and neurodegeneration.** *Annals of Neurology*. 88(5):1023-1027. I.F.: 9.037

9. Martinez-Hernandez E, Guasp M, García-Serra A, Maudes E, Ariño H, Sepulveda M, Armangué T, Ramos AP, Ben-Hur T, Iizuka T, Saiz A, Graus F, Dalmau J. **Clinical significance of anti-NMDAR concurrent with glial or neuronal surface antibodies.** *Neurology*. 94(22):e2302-e2310. I.F.: 8.770

10. Spatola M, Petit Pedrol M, Maudes E, Simabukuro M, Muñiz-Castrillo S, Pinto AL, Wandinger KP, Spiegler J, Schramm P, Dutra LA, Iorio R, Kornblum C, Bien CG, Höftberger R, Leypoldt F, Titulaer MJ, Sillevis Smitt P, Honnorat J, Rosenfeld MR, Graus F, Dalmau J. **Clinical features, prognostic factors, and antibody effects in anti-mGluR1 encephalitis.** *Neurology*. 95(22):e3012-e3025. I.F.: 8.770

11. Ariño H, Muñoz-Lopetegi A, Martinez-Hernandez E, Armangue T, Rosa-Justicia M, Escudero D, Matos N, Graus F, Sugranyes G, Castro-Fornieles J, Compte A, Dalmau J, Santamaria J. **Sleep disorders in anti-NMDAR encephalitis.** *Neurology*. 95(6):e671-e684. I.F.: 8.770

12. Mattozzi S, Sabater L, Escudero D, Ariño H, Armangue T, Simabukuro M, Iizuka T, Hara M, Saiz A, Sotgiu S, Dalmau J, Graus F. **Hashimoto encephalopathy in the 21st century.** *Neurology*. 94(2):e217-e224. I.F.: 8.770

13. Garrido A; Iranzo A; Stefani A; Serradell M; Muñoz-Lopetegi A; Marrero P; Högl B; Gaig C; Santamaria J; Tolosa E; Poewe W. **Lack of Asymmetry of Nigrostriatal Dopaminergic Function in Healthy Subjects.** *Movement Disorders*. 35(6):1072-1076. I.F.: 8.679

14. Kleerekooper I, Herbert MK, Kuiperij HB, Sato DK, Fujihara K, Callegaro D, Marignier R, Saiz A, Senel M, Tumani H, De Jong BA, Trip SA, Nakashima I, Verbeek MM, Petzold A. **CSF levels of glutamine synthetase and GFAP to explore astrocytic damage in seronegative NMOSD.** *Journal of Neurology Neurosurgery and Psychiatry*. 91(6):605-611. I.F.: 8.263

15. Sola-Valls N; Ariño H; Escudero D; Solana E; Lladó A; Sánchez-Valle R; Blanco Y; Saiz A; Dalmau J; Graus F. **Telemedicine assessment of long-term cognitive and functional status in anti-leucine-rich, glioma-inactivated 1 encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(2):e652. I.F.: 7.724

16. Deyà-Martínez A, Gordón Y, Molina-Anguita C, Vlagea A, Piquer M, Juan M, Esteve-Solé A, Antón J, Madrid Á, García-García A, Plaza AM, Armangue T, Alsina L. **Single-cycle rituximab-induced immunologic changes in children: Enhanced in neuroimmunologic disease?** *Neurology-Neuroimmunology & Neuroinflammation*. 7(4):e724. I.F.: 7.724

17. Maudes E, Landa J, Muñoz-Lopetegi A, Armangue T, Alba M, Saiz A, Graus F, Dalmau J, Sabater L. **Clinical significance of Kelch-like protein 11 antibodies.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(3):e666. I.F.: 7.724

18. Joubert B, García-Serra A, Planagumà J, Martínez-Hernandez E, Kraft A, Palm F, Iizuka T, Honnorat J, Leypoldt F, Graus F, Dalmau J. **Pregnancy outcomes in anti-NMDA receptor encephalitis: Case series.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(3):e668. I.F.: 7.724

19. Guasp M, Módena Y, Armangue T, Dalmau J, Graus F. **Clinical features of seronegative, but CSF antibody-positive, anti-NMDA receptor encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(2):e659. I.F.: 7.724

20. Erro ME, Sabater L, Martínez L, Herrera M, Ostolaza A, García de Gurtubay I, Tuñón T, Graus F, Gelpi E. **Anti-IGLON5 disease: A new case without neuropathologic evidence of brainstem tauopathy.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(2):e651. I.F.: 7.724

21. Cellucci T, Van Mater H, Graus F, Muscal E, Gallentine W, Klein-Gitelman MS, Benseler SM, Frankovich J, Gorman MP, Van Haren K, Dalmau J, Dale RC. **Clinical approach to the diagnosis of autoimmune encephalitis in the pediatric patient.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(2):e663. I.F.: 7.724

22. Muñoz-Lopetegi A, de Bruijn MAAM, Boukhrissi S, Bastiaansen AEM, Nagtzaam MMP, Hulsenboom ESP, Boon AJW, Neuteboom RF, de Vries JM, Sillevis Smitt PAE, Schreurs MWJ, Titulaer MJ. **Neurologic syndromes related to anti-GAD65: Clinical and serologic response to treatment.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(3):e696. I.F.: 7.724

23. Paolilo RB, Hacohen Y, Yazbeck E, Armangue T, Bruijstens A, Lechner C, Apostolos-Pereira SL, Martynenko Y, Breu M, de Medeiros Rimkus C, Wassmer E, Baumann M, Papetti L, Capobianco M, Kornek B, Rostásy K, da Paz JA, Ciccarelli O, Lim M, Saiz A, Neuteboom R, Marignier R, Hemingway C, Sato DK, Deiva K. **Treatment and outcome of aquaporin-4 antibody-positive NMOSD: A multinational pediatric study.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(5):e837. I.F.: 7.724

24. Ruiz-García R, Martínez-Hernández E, Joubert B, Petit-Pedrol M, Pajarón-Boix E, Fernández V, Salais L, Del Pozo M, Armangué T, Sabater L, Dalmau J, Graus F. **Paraneoplastic cerebellar ataxia and antibodies to metabotropic glutamate receptor 2.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(2):e658. I.F.: 7.724

25. Landa J, Guasp M, Petit-Pedrol M, Martínez-Hernández E, Planagumà J, Saiz A, Ruiz-García R, García-Fernández L, Verschuuren J, Saunders-Pullman R, Ramirez-Gómez L, Geschwind MD, Dalmau J, Sabater L, Graus F. **Seizure-related 6 homolog like 2 autoimmunity: Neurologic syndrome and antibody effects.** *Neurology-Neuroimmunology & Neuroinflammation.* 8(1):e916. I.F.: 7.724

26. Leurs CE, Twaalfhoven H, Lissenberg-Witte BI, van Pesch V, Dujmovic I, Drulovic J, Castellazzi M, Bellini T, Pugliatti M, Kuhle J, Villar LM, Alvarez-Cermeño JC, Alvarez-Lafuente R, Hegen H, Deisenhammer F, Walchhofer LM, Thouvenot E, Comabella M, Montalban X, Vécsei L, Rajda C, Galimberti D, Scarpini E, Altintas A, Rejdak K, Frederiksen JL, Pihl-Jensen G, Jensen P, Khalil M, Voortman MM, Fazekas F, Saiz A, La Puma D, Vercammen M, Vanopdenbosch L, Uitdehaag B, Killestein J, Bridel C, Teunissen C. **Kappa free light chains is a valid tool in the diagnostics of MS: A large multicenter study.** *Multiple Sclerosis Journal.* 26(8):912-923. I.F.: 5.412

27. Ruiz-García R; Martínez-Hernández E; Saiz A; Dalmau J; Graus F. **The Diagnostic Value of Onconeural Antibodies Depends on How They Are Tested.** *Frontiers in Immunology.* 11:1482. I.F.: 5.085

28. Marin-Campos R; Dalmau J; Compte A; Linares D. **StimuliApp: Psychophysical tests on mobile devices.** *Behavior Research Methods.* I.F.: 4.425

29. Martínez-Heras E; Solana E; Prados F; Andorrà M; Solanes A; López-Soley E; Montejo C; Pulido-Valdeolivas I; Alba-Arbalat S; Sola-Valls N; Sepúlveda M; Blanco Y; Saiz A; Radua J; Llufriu S. **Characterization of multiple sclerosis lesions with distinct clinical correlates through quantitative diffusion MRI.** *Neuroimage-Clinical.* 28:102411. I.F.: 4.350

30. Sahinovic MM, van den Berg JP, Colin PJ, Gambus PL, Jensen EW, Agustí M, Ferreiro T, Struys MMRF. **Influence of an "Electroencephalogram-Based" Monitor Choice on the Delay Between the Predicted Propofol Effect-Site Concentration and the Measured Drug Effect.** *Anesthesia and Analgesia.* 131(4):1184-1192. I.F.: 4.305

31. Gil-Varea E, Spataro N, Villar LM, Tejeda-Velarde A, Midaglia L, Matesanz F, Malhotra S, Eixarch H, Patsopoulos N, Fernández Ó, Oliver-Martos B, Saiz A, Llufriu S, Ramió-Torrentà L, Quintana E, Izquierdo G, Alcina A, Bosch E, Navarro A, Montalban X, Comabella M. **Targeted resequencing reveals rare variants enrichment in multiple sclerosis susceptibility genes.** *Human Mutation.* 41(7):1308-1320. I.F.: 4.124

32. Pulido-Valdeolivas I, Andorrà M, Gómez-Andrés D, Nakamura K, Alba-Arbalat S, Lampert EJ, Zubizarreta I, Llufriu S, Martinez-Heras E, Solana E, Sola-Valls N, Sepulveda M, Tercero-Uribe A, Blanco Y, Camos-Carreras A, Sanchez-Dalmau B, Villoslada P, Saiz A, Martinez-Lapiscina EH. **Retinal and brain damage during multiple sclerosis course: inflammatory activity is a key factor in the first 5 years.** *Scientific Reports.* 10(1):13333. I.F.: 3.998

33. Molero-Luis M, Casas-Alba D, Orellana G, Ormazabal A, Sierra C, Oliva C, Valls A, Velasco J, Launes C, Cuadras D, Pérez-Dueñas B, Jordan I, Cambra FJ, Ortigoza-Escobar JD, Muñoz-Almagro C, Garcia-Cazorla A, Armangué T, Artuch R. **Cerebrospinal fluid neopterin as a biomarker of neuroinflammatory diseases.** *Scientific Reports.* 10(1):18291. I.F.: 3.998

34. Jaramillo, Sebastian; Montane-Muntane, Mar; Gambus, Pedro L; Capitan, David; Navarro-Ripoll, Ricard; Blasi, Annabel. **Perioperative blood loss: estimation of blood volume loss or haemoglobin mass loss?** *Blood Transfusion.* 18(1):20-29. I.F.: 3.662

35. Gil-Varea E, Fedetz M, Eixarch H, Spataro N, Villar LM, Urcelay E, Saiz A, Fernández Ó, Leyva L, Ramió-Torrentà L, Vandenbroeck K, Otaegui D, Castillo-Triviño T, Izquierdo G, Malhotra S, Bosch E, Navarro A, Alcina A, Montalban X, Matesanz F, Comabella M. **A New Risk Variant for Multiple Sclerosis at 11q23.** *Journal of Clinical Medicine.* 9(3):625. I.F.: 3.303

36. Lopez-Soley E, Solana E, Martínez-Heras E, Andorra M, Radua J, Prats-Uribe A, Montejo C, Sola-Valls N, Sepulveda M, Pulido-Valdeolivas I, Blanco Y, Martinez-Lapiscina EH, Saiz A, Llufriu S. **Impact of Cognitive Reserve and Structural Connectivity on Cognitive Performance in Multiple Sclerosis.** *Frontiers in Neurology.* 11:581700. I.F.: 2.889

37. Sepúlveda M; Montejo C; Llufriu S; Sola-Valls N; Reyes D; Martinez-Lapiscina EH; Zubizarreta I; Pulido-Valdeolivas I; Martinez-Hernandez E; Ariño H; Baños N; Saiz A; Blanco Y. **Rebound of multiple sclerosis activity after fingolimod withdrawal due to planning pregnancy: Analysis of predisposing factors**. *Multiple Sclerosis and Related Disorders*. 38:101483. I.F.: 2.889

38. Toboso I; Tejeda-Velarde A; Alvarez-Lafuente R; Arroyo R; Hegen H; Deisenhammer F; Sainz de la Maza S; Alvarez-Cermeño JC; Izquierdo G; Paramo D; Oliva P; Casanova B; Agüera-Morales E; Franciotta D; Gastaldi M; Fernández O; Urbaneja P; Garcia-Dominguez JM; Romero F; Laroni A; Uccelli A; Perez-Sempere A; Saiz A; Blanco Y; Galimberti D; Scarpini E; Espejo C; Montalban X; Rasche L; Paul F; González I; Álvarez E; Ramo C; Caminero AB; Aladro Y; Calles C; Eguía P; Belenguer-Benavides A; Ramió-Torrentà L; Quintana E. **New Algorithms Improving PML Risk Stratification in MS Patients Treated With Natalizumab.** *Frontiers in Neurology*. 11:579438. I.F.: 2.889

39. Falip M, Jaraba S, Rodríguez-Bel L, Castañer S, Mora J, Arroyo P, Miro J, Sala-Padró J, Martínez-Yélamos S, Casasnovas C, Gascon-Bayarri J, Real E, Morandeira F, Vidal N, Veciana M, Saiz A, Carreño M. **Seizures and epilepsy of autoimmune origin: A long-term prospective study.** *Seizure-European Journal of Epilepsy*. 81:157-165. I.F.: 2.522

40. Morales L, Tomàs DP, Dalmau J, de la Rocha J, Jercog PE. **High-Throughput Task to Study Memory Recall During Spatial Navigation in Rodents**. *Frontiers in Behavioral Neuroscience*. 14:64. I.F.: 2.512

41. Vide S; Castro A; Antunes P; Lima D; Larson M; Gambús P; Amorim P. **Pharmacodynamic modelling of the effect of remifentanil using the Pupillary Pain Index.** *Journal of Clinical Monitoring and Computing*. 34(2):319-324. I.F.: 2.108

42. Vide S, Castro A, Correia R, Cabral T, Lima D, Nunes CS, Gambús P, Amorim P. **Foreseeing postoperative pain in neurosurgical patients: pupillometry predicts postoperative pain ratings-an observational study.** *Journal of Clinical Monitoring and Computing*. I.F.: 2.108

Review / I.F.: 62.059

1. Muñoz-Lopetegi A; Graus F; Dalmau J; Santamaria J. **Sleep disorders in autoimmune encephalitis.** *Lancet Neurol*. 19(12):1010-1022. I.F.: 30.039

2. Graus F, Saiz A, Dalmau J. **GAD antibodies in neurological disorders - insights and challenges.** *Nature Reviews Neurology*. 16(7):353-365. I.F.: 27.000

3. Armangue T, Capobianco M, de Chalus A, Laetitia G, Deiva K, E.U. paediatric MOG consortium. **E.U. paediatric MOG consortium consensus: Part 3 - Biomarkers of paediatric myelin oligodendrocyte glycoprotein antibody-associated disorders.** *European Journal of Paediatric Neurology*. 29:22-31. I.F.: 2.510

4. Bruijstens AL; Wendel EM; Lechner C; Bartels F; Finke C; Breu M; Flet-Berliac L; de Chalus A; Adamsbaum C; Capobianco M; Laetitia G; Hacohen Y; Hemingway C; Wassmer E; Lim M; Baumann M; Wickström R; Armangue T; Rostasy K; Deiva K; Neuteboom RF. **E.U. paediatric MOG consortium consensus: Part 5 – Treatment of paediatric myelin oligodendrocyte glycoprotein antibody-associated disorders.** *European Journal of Paediatric Neurology*. 29:41-53. I.F.: 2.510

Letters / I.F.: 50.855

1. Winkler, Andrea Sylvia; Knauss, Samuel; Schmutzhard, Erich; Leonardi, Matilde; Padovani, Alessandro; Abd-Allah, Foad; Charway-Felli, Augustina; Emmerich, Julius Valentin; Umapathi, Thirugnanam; Satishchandra, Parthasarthy; Hoo, Fan Kee; Dalmau, Josep; Oreja-Guevara, Celia; Ferreira, Lucia Brito; Pfausler, Bettina; Michael, Benedict; Tagliavini, Fabrizio; Hoglinger, Gunter; Endres, Matthias; Klein, Christine; Hemmer, Bernhard; Correll, William; Sejvar, James; Solomon, Tom. **A call for a global COVID-19 Neuro Research Coalition.** *Lancet Neurol*. 19(6):482-484. I.F.: 30.039

2. Dalmau J. **Pregnancy, NMDA receptor antibodies, and neuropsychiatric diseases.** *Annals of Neurology*. 87(2):324-325. I.F.: 9.037

3. Dalmau J. **Letter by Dalmau Regarding Article, Serum Anti-NMDA (N-Methyl-D-Aspartate)-Receptor Antibodies and Long-Term Clinical Outcome After Stroke (PROSCIS-B)**. *Stroke*. 51(2):e28. I.F.: 7.190

4. Camprubí D; Moreno-García E; Almuedo-Riera A; Martinez MJ; Navarro A; Martinez-Hernandez E; Muñoz J; Ambrosioni J. **First imported case of tick-borne encephalitis in Spain - was it alimentary?** *Travel Medicine and Infectious Disease*. 37:101701. I.F.: 4.589

Editorial / I.F.: 38.62

1. Dalmau J. **How DIRS is refining concepts.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(2):e677. I.F.: 7.724

2. Dalmau J. "**Time to recharge".** *Neurology-Neuroimmunology & Neuroinflammation*. 7(4):e779. I.F.: 7.724

3. Dalmau, J. **The tip of antibody-testing iceberg.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(3):e716. I.F.: 7.724

4. Dalmau J. **N2 in the time of COVID-19.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(5):e858. I.F.: 7.724

5. Dalmau J. **A probable case of anti-NMDAR encephalitis from 1830.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(6):e901. I.F.: 7.724

Case Reports / I.F.: 10.139

1. Bodro M, Compta Y, Llansó L, Esteller D, Doncel-Moriano A, Mesa A, Rodríguez A, Sarto J, Martínez-Hernandez E, Vlagea A, Egri N, Filella X, Morales-Ruiz M, Yagüe J, Soriano Á, Graus F, García F, "Hospital Clínic Infecto-COVID-19" and "Hospital Clínic Neuro-COVID-19" groups. **Increased CSF levels of IL-1β, IL-6, and ACE in SARS-CoV-2-associated encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(5):e821. I.F.: 7.724

2. Sotgiu S; Consolaro A; Casellato S; Graus F; Picco P. **Anti-GAD epileptic encephalopathy in a toddler with Parry-Romberg syndrome.** *Neurological Sciences*. 41(3):705-708. I.F.: 2.415

Clinical Guidelines / I.F.: 5.412

1. Hadjivassiliou M; Graus F; Honnorat J; Jarius S; Titulaer M; Manto M; Hoggard N; Sarrigiannis P; Mitoma H. **Diagnostic Criteria for Primary Autoimmune Cerebellar Ataxia-Guidelines from an International Task Force on Immune-Mediated Cerebellar Ataxias.** *Cerebellum.* 19(4):605-610. I.F.: 3.129

2. Meca-Lallana JE; Fernández-Prada M; García Vázquez E; Moreno Guillén S; Otero Romero S; Rus Hidalgo M; Villar Guimerans LM; Eichau Madueño S; Fernández Fernández ; Izquierdo Ayuso G; Álvarez Cermeño JC; Arnal García C; Arroyo González R; Brieva Ruiz L; Calles Hernández C; García Merino A; González Platas M; Hernández Pérez M; Moral Torres E; Olascoaga Urtaza J; Oliva-Nacarino P; Oreja-Guevara C; Ortiz Castillo R; Oterino A; Prieto González JM; Ramió-Torrentá L; Rodríguez-Antigüedad A; Saiz A; Tintoré M; Montalbán Gairin X. **Consensus statement on the use of alemtuzumab in daily clinical practice in Spain.** *Neurología.* S0213-4853(19):30146-X. I.F.: 2.283

Consortium Publications / I.F.: 8.263

1. Verboon C, van den Berg B, Cornblath DR, Venema E, Gorson KC, Lunn MP, Lingsma H, Van den Bergh P, Harbo T, Bateman K, Pereon Y, Sindrup SH, Kusunoki S, Miller J, Islam Z, Hartung HP, Chavada G, Jacobs BC, Hughes RAC, van Doorn PA, IGOS Consortium. **Original research: Second IVIg course in Guillain-Barré syndrome with poor prognosis: the non-randomised ISID study.** *Journal of Neurology Neurosurgery and Psychiatry.* 91(2):113-121. I.F.: 8.263

GRANTS FOR RESEARCH IN PROGRESS

Armangué T. **Factores predictores y patogénicos de las encefalopatías autoinmunes post-encefalitis herpética.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00486
Duration: 01/01/2019-31/12/2021

Armangué T. **Autoinmunidad en encefalitis herpética en la infancia: coreoatetosis post-herpética, anticuerpos NMDAR e interferón.**
Sponsored by: Fundación de investigación médica mutua madrileña. FundM-M_AP162572016
Duration: 18/07/2016-31/08/2020

Armangué T. **Opsoclonus myoclonus syndrome: a novel approach to antigen identification and disease modeling.**
Sponsored by: Pablove Foundation. INT_PabloveF_19
Duration: 01/08/2020-31/07/2022

Dalmau J. **Clinical and Experimental Neuroimmunology Group.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_00266
Duration: 01/01/2017-30/09/2021

Dalmau J. A **Translational Model of Antibody-mediated Synaptic Disease: Symptoms, Neuronal Circuits, and the Mechanisms of Memory Loss and Recovery.**
Sponsored by: Fundació Bancaria "La Caixa". HealthRes17-00149
Duration: 31/12/2018-30/12/2021

Dalmau J, Castro-Fornieles J, Compte A. I**nmune-mediated diseases of the synapse: symptoms, brain networks, and the link to human memory.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_FIS_PIE16/00014
Duration: 01/01/2017-30/06/2021

Dalmau J. **Encefalitis anti-NMDAR: Subclases de anticuerpos, y estudio de los efectos de la presencia crónica de anticuerpos en el cerebro de ratón adulto, desarrollo cerebral fetal y sinaptogénesis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00234
Duration: 01/01/2018-31/12/2020

Dalmau J. **Multi-scale exploration of autoantibodies against synaptic receptors.**
Sponsored by: European Commission and Instituto de Salud Carlos III (ISCIII). CE_ERA-Net_NEURON_18 and AC18/00009
Duration: 01/01/2019-31/12/2021

Gambús P. **Sistema de monitorización basado en modelos predictivos como estrategia para el control óptimo e individualizado de la sedación en pacientes.**
Sponsored by: Universidad de San Buenaventura Cali. INT_COLCIENCIAS_18
Duration: 31/01/2019-31/01/2022

Jercog P. **Decodificando la representación neuronal de la memoria de reglas en condiciones normales y de amnesia.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-110427RB-I00
Duration: 01/06/2020-31/05/2023

Sabater L, Gaig C**. Estudio de la enfermedad por anticuerpos IgLON5 e implicación en los mecanismos de neurodegeneración.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00067
Duration: 01/01/2019-31/12/2021

Saiz A, Llufriu S. **Biomarcadores de resonancia magnética avanzada en esclerosis múltiple: asociación con el perfil clínico evolutivo y sustrato genético.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00587
Duration: 01/01/2016-30/11/2020

Saiz A. **Red Temática de Investigación Cooperativa en Salud - Esclerosis múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0015/0002
Duration: 01/01/2017-31/12/2021

Saiz A, Llufriu S. **Rehabilitación cognitiva y plasticidad cerebral en la Esclerosis Múltiple: en búsqueda de la evidencia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01030
Duration: 01/01/2019-31/12/2021

4.8 Cortical circuit dynamics

LOCATION
CEK building, floor -1

KEYWORDS
1. **Decision-making**
2. **Working memory**

RELATED DISEASES
1. **Anti-NMDAR encephalitis**
2. **Schizophrenia**

Original publications

TOTAL	3
IF	**21,71**
Mean IF	**7,24**
Q1	**67%**
D1	**67%**
MA	**33%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Jaime de la Rocha (IDIBAPS)
T. 93 227 54 00 (Ext.: 4307)
jrochav@clinic.cat

ASSISTANT RESEARCHERS
Carles Sindreu (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Daniel Duque (IDIBAPS)
Lluís Hernández Navarro (IDIBAPS)
Manuel Molano (IDIBAPS)
Jordi Pastor (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Alexis Cerván (IDIBAPS)
Tiffany Oña (IDIBAPS)
Balma Serrano (IDIBAPS)

TECHNICIANS
Eva Carillo (IDIBAPS)
Lorena Jiménez Morán (IDIBAPS)
Rafael Marín Campos (IDIBAPS)

ADMINISTRATIVE STAFF
Lejla Bektic (IDIBAPS)
Arnau Llobet (IDIBAPS)

PROBLEM

Cognitive deficits are common in mental disorders. Nonetheless, there is no cognitive test sensitive enough to establish a precise classification and quantification of such deficits, which would make it possible to obtain an effective diagnosis.

The vast majority of the neural bases of these deficits are still unknown, mainly because the underlying neural mechanisms of most of the cognitive functions of the healthy brain are not properly understood. For this reason, it is essential to design new behavioural assays for use in both animal models and patients, to investigate the underlying neural mechanisms and develop efficient therapies.

APPROACH

The group studies the way in which cognitive functions such as perception, working memory, and decision-making emerge from different neural circuits. To do this, controlled behavioural experiments are conducted with rodents in which the team records their electrophysiological measurements and controls their brain activity.

In addition, the group uses a wide range of analytical techniques, including neural network computational models, and applies this approach to obtain an understanding of the underlying mechanisms of those cognitive deficits normally present in neurological disorders, such as anti-NMDAR encephalitis and schizophrenia.

IMPACT

In recent years, the group has conducted diverse behavioural studies on rodents to investigate the way in which they make perceptive decisions based on ambiguous sensorial information and previous experience, including a description of the role of the different areas of the brain in performing the computations inherent to this task.

Furthermore, it is investigating the neural bases of working memory in mice during automated behavioural tasks combined with monitoring neural activity, with the objective of applying such tasks to different mental disorders in animal models.

RESEARCH LINES

- The dynamics of sensory evidence integration during perceptual decision making.

- The neural circuitry of Working Memory (WM): memory interference and disease-mediated deficits.

- The neural circuitry of expectation during decision making tasks.

PUBLICATIONS

Originals / I.F.: 21.713

1. Hermoso-Mendizabal A, Hyafil A, Rueda-Orozco PE, Jaramillo S, Robbe D, de la Rocha J. **Response outcomes gate the impact of expectations on perceptual decisions.** *Nature Communications*. 11(1):1057. I.F.: 12.121

2. Ponce-Alvarez, Adrian; Mochol, Gabriela; Hermoso-Mendizabal, Ainhoa; de la Rocha, Jaime; Deco, Gustavo. **Cortical state transitions and stimulus response evolve along stiff and sloppy parameter dimensions, respectively.** *Elife*. 9:e53268. I.F.: 7.080

3. Morales L, Tomàs DP, Dalmau J, de la Rocha J, Jercog PE. **High-Throughput Task to Study Memory Recall During Spatial Navigation in Rodents**. *Frontiers in Behavioral Neuroscience*. 14:64. I.F.: 2.512

GRANTS FOR RESEARCH IN PROGRESS

De la Rocha J. **Los mecanismos neuronales responsables de la generación de sesgos en decisiones pereptuales y basadas en la memoria.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-099750-B-I00
Duration: 01/01/2019-31/12/2021

De la Rocha J. **Neural circuit dynamics underlying expectation and their impact on the variability of perceptual choices.**
Sponsored by: European Commission. CE_H2020-ERC-2015_Co
Duration: 01/09/2016-31/08/2021

De la Rocha J. **A neurocomputational biomarker assay for schizophrenia based on E/I-balance.**
Sponsored by: European Commission and Instituto de Salud Carlos III (ISCIII). CE_ERA-Net_NEURON_19 and AC19/00147
Duration: 11/03/2019-11/03/2022

4.9 Neurophysiology

LOCATION
UB Medical School

KEYWORDS
1. **Pain**
2. **Itch**
3. **Sensory neurons**
4. **Ion channels**
5. **Glutamate receptors**
6. **GRINpathies**
7. **Ocular pain**

RELATED DISEASES
1. **Chronic pain**
2. **Itch**
3. **Neurodegenerative diseases**
4. **Mental retardation**
5. **Ocular diseases**

GROUP INVOLVED IN
AGAUR_SGR17: 00737
RETIC Oftared

Original publications

TOTAL	4
IF	36,08
Mean IF	9,02
Q1	100%
D1	75%
MA	50%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Xavier Gasull (UB)
T. 93 402 45 19
xgasull@ub.edu

RESEARCHERS
Xavier Altafaj (UB)
Núria Comes (UB)
Arcadi Gual (UB)
David Soto (UB)

ASSISTANT RESEARCHERS
Esther Gratacós Batlle (UB)

POST-DOCTORAL RESEARCHERS
Alba Andrés Bilbé (UB)
Gerard Callejo (UB)

PRE-DOCTORAL RESEARCHERS
Roberto García Díaz (UB)
Silvia Locubiche (UB)
Federico Miguez Cabello (UB)
Federico Ponente (UB)
Anna Pujol (IDIBAPS)
Lenin Alejandro Reyes (UB)
Ana Santos (UB)

TECHNICIANS
Sara Abelló (UB)
Anna Priscil·la Pérez González (UB)

PROBLEM

Chronic or genetic diseases alter the role of neurons: they increase excitability, which causes pain and chronic itching, or modifies the synapses, which causes mental retardation or other neurological disorders.

It is necessary to understand firstly what changes occur at a molecular and functional level and, secondly, which ionic receptors or channels are involved, in order to know the disease. This is the first step towards developing the most appropriate and effective drugs and treatments.

APPROACH

The group is interested in understanding the molecular and functional bases of neuronal excitability and communication between neurons in normal and pathological conditions.

In sensory neurons, it studies which ion channels and receptors participate in the detection of painful and itchy stimuli, and how they are regulated during chronic pain and itching.

In glutamatergic neurotransmission, it studies the glutamate receptors and the proteins that regulate them, as well as the functional consequences of mutations in the neurological receptors.

IMPACT

The group has identified certain potassium channels in sensory neurons that regulate electrical activity and that are altered during neuropathic or migraine pain.

The goal is to find drugs that activate these channels as new analgesic treatments for pain and chronic itching. In addition, the study of mutations on glutamate receptors allows the group to understand the neurological disorders they produce, and to propose appropriate pharmacological treatments.

RESEARCH LINES

- Glutamatergic signalling: functional interaction between AMPARs and auxiliary subunits and other proteins that interact with it.

- NMDAR receptor pharmacology and function in mutations related to neurological diseases.

- Ocular physiology: dry eye physiopathology and sensory neurons on the ocular surface. Pathophysiology of the drainage of aqueous humour and the physiopathology of glaucoma.

- Physiology and pathophysiology of pain and chronic itching. Study of the ionic channels involved in neuronal excitability in the sensory nervous system.

- Traffic and regulation of the channels of K+ and Cl- in cell physiology. Interaction with proteins and membrane lipids.

PUBLICATIONS

Originals / **I.F.: 36.081**

1. Oliveras, Anna; Serrano-Novillo, Clara; Moreno, Cristina; de la Cruz, Alicia; Valenzuela, Carmen; Soeller, Christian; Comes, Nuria; Felipe, Antonio. **The unconventional biogenesis of Kv7.1-KCNE1 complexes.** *Science Advances.* 6(14):eaay4472. I.F.: 13.117

2. Mannara F, Radosevic M, Planagumà J, Soto D, Aguilar E, García-Serra A, Maudes E, Pedreño M, Paul S, Doherty J, Quirk M, Dai J, Gasull X, Lewis M, Dalmau J. **Allosteric modulation of NMDA receptors prevents the antibody effects of patients with anti-NMDAR encephalitis.** *Brain.* 143(9):2709-2720. I.F.: 11.337

3. Miguez-Cabello F; Sánchez-Fernández N; Yefimenko N; Gasull X; Gratacòs-Batlle E; Soto D. **AMPAR/TARP stoichiometry differentially modulates channel properties.** *Elife.* 9:e53946. I.F.: 7.080

4. Castellanos A; Pujol-Coma A; Andres-Bilbe A; Negm A; Callejo G; Soto D; Noël J; Comes N; Gasull X. **TRESK background K+ channel deletion selectively uncovers enhanced mechanical and cold sensitivity.** *Journal of Physiology-London.* 598(5):1017-1038. I.F.: 4.547

Review / **I.F.: 4.556**

1. Andres-Bilbe A, Castellanos A, Pujol-Coma A, Callejo G, Comes N, Gasull X. **The Background K+ Channel TRESK in Sensory Physiology and Pain.** *International Journal of Molecular Sciences.* 21(15):5206. I.F.: 4.556

GRANTS FOR RESEARCH IN PROGRESS

Altafaj X. **Comprehensive delineation and personalised medicine of GRIN-related neurodevelopmental disorders, a rare paediatric encephalopathy.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00348
Duration: 28/10/2020-31/12/2022

Gasull X. **Red Temática de Investigación Cooperativa en Salud - Enfermedades oculares.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0008/0014
Duration: 01/01/2017-31/12/2021

Gasull X. **Bases neurofisiológicas del picor y dolor crónico: canales iónicos en neuronas sensoriales implicados en enfermedades inflamatorias y oculares.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00296
Duration: 01/01/2018-31/12/2021

Gasull X. **Innovative Training Network (ITN)-EU. Molecule-to-man pain network (PAIN-Net).**
Sponsored by: European Commission. H2020-MSCA-ITN-2016
Duration: 29/06/2020-31/07/2021

Gasull X. DATAETHICS. **Strategic Partnership for Higher Education.**
Sponsored by: Erasmus+ Program, EU. Eurolife Network of European Universities
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Gasull X, Soto D. **Mecanismes neuronals de la picor aguda i crònica en neurones sensorials: implicació del canal TRESK.**
PhD student: Alba Andrés Bilbé

4.10 Muscular research and mitochondrial function

LOCATION
CELLEX building, floor 4B
University of Barcelona,
School of Medicine and Health Sciences

KEYWORDS
1. **Muscle**
2. **Mitochondria**
3. **Cardiomyopathy**
4. **Chronic fatigue syndrome**
5. **Septic shock**

RELATED DISEASES
1. **Myositis**
2. **Mitochondrial disorders**
3. **Cardiomyopathies**
4. **Central sensitization syndrome**
5. **Sepsis**

GROUP INVOLVED IN
AGAUR_SGR17: 00893
CARDIONET
CIBERER
CIBEROBN
METNET
XUEC

Original publications

TOTAL	21
IF	**170,76**
Mean IF	**8,13**
Q1	**71%**
D1	**25%**
MA	**29%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep M. Grau Junyent (HCB)
T. 93 227 55 39
jmgrau@clinic.cat

RESEARCHERS
Francesc Cardellach (HCB)
Pedro Castro Rebollo (HCB)
Joaquim Fernández Sola (HCB)
Glòria Garrabou (CIBER)
Josep M. Nicolás (HCB)

POST-DOCTORAL RESEARCHERS
Francesc Josep García García (UB)
Laura García Otero (HCB)
Ingrid González Casacuberta (FCRB)
Mariona Guitart (IDIBAPS)
Anna Sandra Hernández Aguado (HCB)
Diana Luz Juárez (UB)
Jose César Milisenda (HCB)
Constanza Morén (CIBER)

PRE-DOCTORAL RESEARCHERS
Judith Cantó (UB)
Cecilia Cuzco (HCB)
Sara Fernández Méndez (HCB)
Pedro Juan Moreno (HCB)
Joan Padrosa (HCB)
Anna Peguero (HCB)

TECHNICIANS
Tamara Barcos (IDIBAPS)
Ester Tobías Baraja (UB)

PROBLEM

Muscles and mitochondria (cell organelles that supply energy to cells), are involved in the appearance and development of relatively common illnesses but also numerous rare disorders.

Especially prevalent are adult muscle diseases, mitochondrial dysfunctions (responsible for many syndromes), cardiomyopathy in chronic alcoholic patients, chronic fatigue syndrome or fibromyalgia (of growing prevalence) and septic shock, which is an important cause of death in intensive care units.

APPROACH

The group works, above all, with muscle diseases and mitochondrial dysfunctions. In relation to muscle pathology, we attend patients from other hospitals and primary care centres, we also develop diagnostic protocols (beta-oxidation, dried blood spot, antibodies, imaging, muscular biopsies, biochemistry and genetic testing, among others) and we collaborate with other centres (such as the Vall d'Hebron hospital, Sant Joan de Deu and the Johns Hopkins University) in the development of collaborative databases or registries, therapeutic strategies, and the identification of biomarkers.

In relation to mitochondrial pathology, we study bioenergetics in depth (respiration, genetic studies, oxidative stress etc.) and identify patients and groups with mitochondrial dysfunction.

We also perform the diagnosis of primary mitochondrial diseases to the Hospital Clinic of Barcelona and participate in the assistance of these and other adult patients with inherited metabolic diseases from the XUEC we coordinate with the paediatric Hospital Sant Joan de Deu.

Parallel interests are focused in the research of the etiologic base, biomarkers and therapeutic targets for the onset and progression of cardiomyopathy, chronic fatigue syndrome and sepsis.

IMPACT

The lines of research we promote have allowed the group to develop an accurate protocol to diagnose, treat and monitor adult patients with muscle and metabolic diseases.

It has also been able to describe the biochemistry and genetics of primary and secondary mitochondrial dysfunction problems in patients and in terms of research; to unequivocally demonstrate the mechanisms responsible for the toxicity of chronic alcohol

consumption on the heart, the bases for chronic fatigue or fibromyalgia diagnosis and management and to identify prognostic factors in sepsis, as well as to design a treatment algorithm.

RESEARCH LINES

- Adult myopathies.

- Mitochondrial and metabolic diseases, either primary (rare diseases) or secondary (usually more prevalent).

- Alcohol consumption and cardiomyopathy.

- Chronic fatigue syndrome risk factors.

- Septic shock anb multiorgan dysfunction.

PUBLICATIONS

Originals / I.F.: 170.762

1. Ellinghaus D, Degenhardt F, Bujanda L, Buti M, Albillos A, Invernizzi P, Fernández J, Prati D, Baselli G, Asselta R, Grimsrud MM, Milani C, Aziz F, Kässens J, May S, Wendorff M, Wienbrandt L, Uellendahl-Werth F, Zheng T, Yi X, de Pablo R, Chercoles AG, Palom A, Garcia-Fernandez AE, Rodriguez-Frias F, Zanella A, Bandera A, Protti A, Aghemo A, Lleo A, Biondi A, Caballero-Garralda A, Gori A, Tanck A, Carreras Nolla A, Latiano A, Fracanzani AL, Peschuck A, Julià A, Pesenti A, Voza A, Jiménez D, Mateos B, Nafria Jimenez B, Quereda C, Paccapelo C, Gassner C, Angelini C, Cea C, Solier A, Pestaña D, Muñiz-Diaz E, Sandoval E, Paraboschi EM, Navas E, García Sánchez F, Ceriotti F, Martinelli-Boneschi F, Peyvandi F, Blasi F, Téllez L, Blanco-Grau A, Hemmrich-Stanisak G, Grasselli G, Costantino G, Cardamone G, Foti G, Aneli S, Kurihara H, ElAbd H, My I, Galván-Femenia I, Martín J, Erdmann J, Ferrusquía-Acosta J, Garcia-Etxebarria K, Izquierdo-Sanchez L, Bettini LR, Sumoy L, Terranova L, Moreira L, Santoro L, Scudeller L, Mesonero F, Roade L, Rühlemann MC, Schaefer M, Carrabba M, Riveiro-Barciela M, Figuera Basso ME, Valsecchi MG, Hernandez-Tejero M, Acosta-Herrera M, D'Angiò M, Baldini M, Cazzaniga M, Schulzky M, Cecconi M, Wittig M, Ciccarelli M, Rodríguez-Gandía M, Bocciolone M, Miozzo M, Montano N, Braun N, Sacchi N, Martínez N, Özer O, Palmieri O, Faverio P, Preatoni P, Bonfanti P, Omodei P, Tentorio P, Castro P, Rodrigues PM, Blandino Ortiz A, de Cid R, Ferrer R, Gualtierotti R, Nieto R, Goerg S, Badalamenti S, Marsal S, Matullo G, Pelusi S, Juzenas S, Aliberti S, Monzani V, Moreno V, Wesse T, Lenz TL, Pumarola T, Rimoldi V, Bosari S, Albrecht W, Peter W, Romero-Gómez M, D'Amato M, Duga S, Banales JM, Hov JR, Folseraas T, Valenti L, Franke A, Karlsen TH Severe Covid-19 GWAS Group. **Genomewide Association Study of Severe Covid-19 with Respiratory Failure.** *New England Journal of Medicine.* 383(16):1522-1534. I.F.: 74.699

2. Iago Pinal-Fernandez, Maria Casal-Dominguez, Assia Derfoul, Katherine Pak, Frederick W Miller, Jose César Milisenda, Josep Maria Grau-Junyent, Albert Selva-O'Callaghan, Carme Carrion-Ribas, Julie J Paik, Jemima Albayda, Lisa Christopher-Stine, Thomas E Lloyd, Andrea M Corse, Andrew L Mammen. **Machine learning algorithms reveal unique gene expression profiles in muscle biopsies from patients with different types of myositis.** *Annals of the Rheumatic Diseases.* 79(9):1234-1242. I.F.: 16.102

3. Garcia-Vidal C, Moreno-García E, Hernández-Meneses M, Puerta-Alcalde P, Chumbita M, Garcia-Pouton N, Linares L, Rico V, Cardozo C, Martínez JA, García F, Mensa J, Castro P, Nicolás JM, Muñoz J, Vidal D, Soriano A, COVID19-Researchers. **Personalized therapy approach for hospitalized patients with COVID-19.** *Clinical Infectious Diseases.* I.F.: 8.313

4. Matas-García A; Milisenda JC; Selva-O'Callaghan A; Prieto-González S; Padrosa J; Cabrera C; Reguart N; Castrejón N; Solé M; Ros J; Trallero-Araguas E; Antoniol MN; Vila-Pijoan G; Grau JM. **Emerging PD-1 and PD-1L inhibitors-associated myopathy with a characteristic histopathological pattern.** *Autoimmunity Reviews.* 19(2):102455. I.F.: 7.767

5. Nickie Seto, Jose Jiram Torres-Ruiz, Carmelo Carmona-Rivera, Iago Pinal-Fernandez, Katherine Pak, Monica M Purmalek, Yuji Hosono, Catia Fernandes-Cerqueira, Prateek Gowda, Nathan Arnett, Alexander Gorbach, Olivier Benveniste, Diana Gómez-Martín, Albert Selva-O'Callaghan, José C Milisenda, Josep M Grau-Junyent, Lisa Christopher-Stine, Frederick W Miller, Ingrid E Lundberg, J Michelle Kahlenberg, Adam I Schiffenbauer, Andrew Mammen, Lisa G Rider, Mariana J Kaplan. **Neutrophil dysregulation is pathogenic in idiopathic inflammatory myopathies.** *JCI Insight.* 5(3):e134189. I.F.: 6.205

6. Janelle M Montagne, Xuwen Alice Zheng, Iago Pinal-Fernandez, Jose C Milisenda, Lisa Christopher-Stine, Thomas E Lloyd, Andrew L Mammen, H Benjamin Larman. **Ultra-efficient sequencing of T Cell receptor repertoires reveals shared responses in muscle from patients with Myositis.** *EBiomedicine.* 59:102972. I.F.: 5.736

7. Juárez-Flores DL; Ezquerra M; Gonzàlez-Casacuberta Ï; Ormazabal A; Morén C; Tolosa E; Fucho R; Guitart-Mampel M; Casado M; Valldeoriola F; de laTorre-Lara J; Muñoz E; Tobías E; Compta Y; García-García FJ; García-Ruiz C; Fernandez-Checa JC; Martí MJ; Grau JM; Cardellach F; Artuch R; Fernández-Santiago R; Garrabou G. **Disrupted mitochondrial and metabolic plasticity underlie comorbidity between age-related and degenerative disorders as parkinson disease and type 2 diabetes mellitus.** *Antioxidants.* 9(11):1063. I.F.: 5.014

8. Barbeta E, Motos A, Torres A, Ceccato A, Ferrer M, Cilloniz C, Bueno L, Badia JR, Castro P, Ferrando C, Andrea R, Castellà M, Fernández J, Soriano A, Mellado R, López-Aladid R, Yang H, Yang M, Fernandez-Barat L, Catalina Palomeque A, Vollmer I, Nicolás JM, Covid Clinic Critical Care Group. **SARS-CoV-2-induced Acute Respiratory Distress Syndrome: Pulmonary Mechanics and Gas Exchange Abnormalities.** *Annals of the American Thoracic Society.* 17(9):1164-1168. I.F.: 4.836

9. Vergara, Andrea; Boutal, Herve; Ceccato, Adrian; Lopez, Miriam; Cruells, Adria; Bueno-Freire, Leticia; Moreno-Morales, Javier; Puig de la Bellacasa, Jorge; Castro, Pedro; Torres, Antoni; Marco, Francesc; Casals-Pascual, Climent; Vila, Jordi. **Assessment of a Loop-Mediated Isothermal Amplification (LAMP) Assay for the Rapid Detection of Pathogenic Bacteria from Respiratory Samples in Patients with Hospital-Acquired Pneumonia.** *Microorganisms.* 8(1):103. I.F.: 4.152

10. Solé E; Roca A; Torres A; Hernández AS; Fernández N; Díaz CN; Vieta E; Garcia-Esteve L. **Obstetric complications in bipolar disorder: Psychiatric factors and the risk of caesarean section.** *European Neuropsychopharmacology.* 32:47-55. I.F.: 3.853

11. Avilés-Jurado FX, Prieto-Alhambra D, González-Sánchez N, de Ossó J, Arancibia C, Rojas-Lechuga MJ, Ruiz-Sevilla L, Remacha J, Sánchez I, Lehrer-Coriat E, López-Chacón M, Langdon C, Guilemany JM, Larrosa F, Alobid I, Bernal-Sprekelsen M, Castro P, Vilaseca I. **Timing, Complications, and Safety of Tracheotomy in Critically Ill Patients With COVID-19.** *Jama Otolaryngology-Head & Neck Surgery.* 147(1):41-48. I.F.: 3.848

12. Gonzalez-Quereda L, Rodriguez MJ, Diaz-Manera J, Alonso-Perez J, Gallardo E, Nascimento A, Ortez C, Natera-de Benito D, Olive M, Gonzalez-Mera L, Munain AL, Zulaica M, Poza JJ, Jerico I, Torne L, Riera P, Milisenda J, Sanchez A, Garrabou G, Llano I, Madruga-Garrido M, Gallano P. **Targeted Next-Generation Sequencing in a Large Cohort of Genetically Undiagnosed Patients with Neuromuscular Disorders in Spain.** *Genes.* 11(5):539. I.F.: 3.759

13. Cabrera R, Fernández-Barat L, Motos A, López-Aladid R, Vázquez N, Panigada M, Álvarez-Lerma F, López Y, Muñoz L, Castro P, Vila J, Torres A. **Molecular characterization of methicillin-resistant Staphylococcus aureus clinical strains from the endotracheal tubes of patients with nosocomial pneumonia.** *Antimicrobial Resistance and Infection Control.* 9(1):43. I.F.: 3.594

14. Catalán-García M, García-García FJ, Moreno-Lozano PJ, Alcarraz-Vizán G, Tort-Merino A, Milisenda JC, Cantó-Santos J, Barcos-Rodríguez T, Cardellach F, Lladó A, Novials A, Garrabou G, Grau-Junyent JM. **Mitochondrial Dysfunction: A Common Hallmark Underlying Comorbidity between sIBM and Other Degenerative and Age-Related Diseases.** *Journal of Clinical Medicine.* 9(5):1446. I.F.: 3.303

15. Ugarteburu O, Sánchez-Vilés M, Ramos J, Barcos-Rodríguez T, Garrabou G, García-Villoria J, Ribes A, Tort F. **Physiopathological Bases of the Disease Caused by HACE1 Mutations: Alterations in Autophagy, Mitophagy and Oxidative Stress Response.** *Journal of Clinical Medicine.* 9(4):913. I.F.: 3.303

16. Torres X, Bennasar M, García-Otero L, Martínez-Portilla RJ, Valenzuela-Alcaraz B, Crispi F, Goncé A, Gratacós E, Figueras F, Martínez JM. **Uncomplicated Monochorionic Twins: Two Normal Hearts Sharing One Placenta.** *Journal of Clinical Medicine.* 9(11):3602. I.F.: 3.303

17. Bano, Maria; Moren, Constanza; Barroso, Sergio; Juarez, Diana Luz; Guitart-Mampel, Mariona; Gonzalez-Casacuberta, Ingrid; Canto-Santos, Judith; Lozano, Ester; Leon, Agathe; Pedrol, Enric; Miro, Oscar; Tobias, Ester; Mallolas, Josep; Rojas, Jhon F; Cardellach, Francesc; Martinez, Esteban; Garrabou, Gloria. **Mitochondrial Toxicogenomics for Antiretroviral Management: HIV Post-exposure Prophylaxis in Uninfected Patients.** *Frontiers in Genetics.* 11:497. I.F.: 3.260

18. Bosch X, Ladino A, Moreno-Lozano P, Jordán A, López-Soto A. **Trends in Hospitalization of Patients with Potentially Serious Diseases Evaluated at a Quick Diagnosis Clinic.** *Diagnostics.* 10(8):585. I.F.: 3.110

19. Seguí F; Gonzalez-Quereda L; Sanchez A; Matas-García A; Garrabou G; Rodriguez MJ; Gallano P; Grau JM; Milisenda JC. **Anoctamin 5 (ANO5) muscular dystrophy-three different phenotypes and a new histological pattern.** *Neurological Sciences.* 41(10):2967-2971. I.F.: 2.415

20. Guirado L; Crispi F; Soveral I; Valenzuela-Alcaraz B; Rodriguez-López M; García-Otero L; Torres X; Sepúlveda-Martínez Á; Escobar-Diaz M; Martínez J; Friedberg M; Gratacós E; Gómez O. **Nomograms of Fetal Right Ventricular Fractional Area Change by 2D Echocardiography.** *Fetal Diagnosis and Therapy.* 47(5):399-410. I.F.: 2.095

21. García-Otero L, Gómez O, Rodriguez-López M, Torres X, Soveral I, Sepúlveda-Martínez Á, Guirado L, Valenzuela-Alcaraz B, López M, Martínez JM, Gratacós E, Crispi F. **Nomograms of Fetal Cardiac Dimensions at 18-41 Weeks of Gestation.** *Fetal Diagnosis and Therapy.* 47(5):387-398. I.F.: 2.095

Review / I.F.: 34.695

1. Roth GA; Mensah GA; Johnson CO; Addolorato G; Ammirati E; Baddour LM; Barengo NC; Beaton AZ; Benjamin EJ; Benziger CP; Bonny A; Brauer M; Brodmann M; Cahill TJ; Carapetis J; Catapano AL; Chugh SS; Cooper LT; Coresh J; Criqui M; DeCleene N; Eagle KA; Emmons-Bell S; Feigin VL; Fernández-Solà J; Fowkes G; Gakidou E; Grundy SM; He FJ; Howard G; Hu F; Inker L; Karthikeyan G; Kassebaum N; Koroshetz W; Lavie C; Lloyd-Jones D; Lu HS; Mirijello A; Temesgen AM; Mokdad A; Moran AE; Muntner P; Narula J; Neal B; Ntsekhe M; Moraes de Oliveira G; Otto C; Owolabi M; Pratt M; Rajagopalan S; Reitsma M; Ribeiro ALP; Rigotti N; Rodgers A; Sable C; Shakil S; Sliwa-Hahnle K; Stark B; Sundström J; Timpel P; Tleyjeh IM; Valgimigli M; Vos T; Whelton PK; Yacoub M; Zuhlke L; Murray C; Fuster V; GBD-NHLBI-JACC Global Burden of Cardiovascular Diseases Writing Group. **Global Burden of Cardiovascular Diseases and Risk Factors, 1990-2019: Update From the GBD 2019 Study.** *Journal of the American College of Cardiology.* 76(25):2982-3021. I.F.: 20.589

2. Cantó-Santos J; Grau-Junyent JM; Garrabou G. **The impact of mitochondrial deficiencies in neuromuscular diseases.** *Antioxidants.* 9(10):964. I.F.: 5.014

3. García-García FJ; Monistrol-Mula A; Cardellach F; Garrabou G. **Nutrition, bioenergetics, and metabolic syndrome.** *Nutrients.* 12(9):2785. I.F.: 4.546

4. Fernández-Solà J. **The effects of ethanol on the heart: Alcoholic cardiomyopathy.** *Nutrients.* 12(2):572. I.F.: 4.546

Letters / I.F.: 5.373

1. Smolders VFED; Rodríguez C; Morén C; Blanco I; Osorio J; Piccari L; Bonjoch C; Quax PHA; Peinado VI; Castellà M; Barberà JA; Cascante M; Tura-Ceide O. **Decreased glycolysis as metabolic fingerprint of endothelial cells in chronic thromboembolic pulmonary hypertension.** *American Journal of Respiratory Cell and Molecular Biology.* 63(5):710-713. I.F.: 5.373

Editorial / I.F.: 4.957

1. Farré R; Puig-Domingo M; Ricart P; Nicolás JM. **Emergency Mechanical Ventilators for Covid-19.** *Archivos de Bronconeumología.* 56(2):7-8. I.F.: 4.957

Case Reports / I.F.: 24.037

1. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

2. Villarreal-Compagny M, Iglesias P, Marco-Hernández J, Milisenda JC, Casanova-Molla J, Hernández-Rodríguez J, Puig S, Carrera C, Prieto-González S. **ANCA-associated vasculitic neuropathy during treatment with ipilimumab.** *Rheumatology*. 59(1):251-252. I.F.: 5.606

3. Antoniol MN; Moreno PJ; Milisenda JC; Selva O'Callaghan A; Grau JM; Padrosa J. **Statin use and myopathy. Not always guilty.** *Rheumatology*. 59(12):3853-3857. I.F.: 5.606

4. Vicente-Steijn, Rebecca; Tome, Adria; Maduell, Francisco; Xipell, Marc; Castro, Pedro; Molina, Angel; Merino, Anna. **Green inclusions in neutrophils: A critical finding that must be reported.** *International Journal of Laboratory Hematology*. 42(3):e101-e104. I.F.: 2.141

5. Losno RA, Milisenda JC, Aibar J. **Massive deep venous thrombosis in a patient addicted to cocaine.** *Medicina Clínica.* 154(3):110-111. I.F.: 1.635

6. Naval J; Grau J; Milisenda J. **A disabling case of chronic external ophthalmoplegia cleverly overcomed.** *Medicina Clínica.* 155(12):570. I.F.: 1.635

Consortium Publications / I.F.: 63.687

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

2. Ferrando C, Suarez-Sipmann F, Mellado-Artigas R, Hernández M, Gea A, Arruti E, Aldecoa C, Martínez-Pallí G, Martínez-González MA, Slutsky AS, Villar J, COVID-19 Spanish ICU Network. **Clinical features, ventilatory management, and outcome of ARDS caused by COVID-19 are similar to other causes of ARDS.** *Intensive Care Medicine.* 46(12):2200-2211. I.F.: 17.679

3. Ferrando C, Mellado-Artigas R, Gea A, Arruti E, Aldecoa C, Adalia R, Ramasco F, Monedero P, Maseda E, Tamayo G, Hernández-Sanz ML, Mercadal J, Martín-Grande A, Kacmarek RM, Villar J, Suárez-Sipmann F, COVID-19 Spanish ICU Network. **Awake prone positioning does not reduce the risk of intubation in COVID-19 treated with high-flow nasal oxygen therapy: a multicenter, adjusted cohort study.** *Critical Care.* 24(1):597. I.F.: 6.407

4. Londoño MC; Reig M, RETOINMUNO Multidisciplinary Group. **Multidisciplinary clinical approach to cancer patients with immune-related adverse events induced by checkpoint inhibitors.** *Cancers*. 12(11):1-22. I.F.: 6.126

5. Matalonga L, Laurie S, Papakonstantinou A, Piscia D, Mereu E, Bullich G, Thompson R, Horvath R, Pérez-Jurado L, Riess O, Gut I, van Ommen GJ, Lochmüller H, Beltran S, RD–Connect Genome-Phenome Analysis Platform and URD-Cat Data Contributors. **Improved Diagnosis of Rare Disease Patients through Systematic Detection of Runs of Homozygosity.** *Journal of Molecular Diagnostics.* 22(9):1205-1215. I.F.: 5.553

6. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

7. Villar J; Añón JM; Ferrando C; Aguilar G; Muñoz T; Ferreres J; Ambrós A; Aldecoa C; Suárez-Sipmann F; Thorpe KE; Jüni P; Slutsky AS; Ferrando C; Mellado-Artigas R; Fernández J; Hernández M; Castellá M; Castro P; Badia JR; Aguilar G; Carbonell JA; Badenes R; Tornero C; Ferreres J; Blasco ML; Carbonell N; Serrano A; Juan M; Gómez- Herreras JI; López ML; Martín C; Del Campo R; Puig-Bernabeu J; Ferrer C; De Andrés J; Serna-Grande P; Tamayo G; Martínez-Ruíz A; Bilbao-Villasante I; Villar J; Fernández RL; Calvo CP; Vidal Á; Figueira JC; Asensio MJ; Maseda E; Suárez-Sipmann F; Ramasco F; Varela-Durán M; Díaz-Parada P; Trenado-Álvarez J; Fernández MM; Rico-Feijoo J; Fernández L; Sánchez-Ballesteros J; Blanco-Schweizer P; Martínez D; Soler JA; Jüni P; Thomas R; Wysocki K; De Verno P; Lakhanpal G; Juando-Prats C. **Efficacy of dexamethasone treatment for patients with the acute respiratory distress syndrome caused by COVID-19: Study protocol for a randomized controlled superiority trial.** *Trials*. 21(1):717. I.F.: 1.883

GRANTS FOR RESEARCH IN PROGRESS

Cardellach F. **Influencia de la dieta en la modulación mitocondrial y de cardiomiocinas del remodelado cardiovascular fetal asociado al crecimiento intrauterino restringido.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00817
Duration: 01/01/2016-31/12/2020

Cardellach F. **Biomarcadores de utilidad pronóstica y terapéutica en el crecimiento intrauterino restringido y el remodelado cardiovascular fetal asociado.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00451
Duration: 01/01/2019-31/12/2021

Cuzco C. **Impacto de una intervención enfermera centrada en el empoderamiento del paciente crítico al alta de la unidad de cuidados intensivos.**
Sponsored by: Fundació Infermeria i Societat.
COIB_PR-248/17
Duration: 01/01/2018-31/12/2021

Fernández-Solà J. **Paper de les noves cardiomiocines FGF21 i Metrnl en el dany cardíac induït per l'alcoholisme i la hipertensió arterial.**
Sponsored by: Fundació la Marató de TV3.
Cor_15
Duration: 29/06/2016-31/12/2020

Garrabou G, Grau JM. **Miositis por cuerpos de inclusión esporádica: desarrollo de nuevos modelos celulares para la identificación de biomarcadores y estrategias terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00498
Duration: 01/01/2019-31/12/2021

4.11 Clinical addictions

LOCATION
HCB building
Mallorca 183 building

KEYWORDS
1. **Alcohol**
2. **Cannabis**
3. **Tobacco**
4. **Benzodiazepines**
5. **Opiates**

RELATED DISEASES
1. **Alcohol use disorder**
2. **Cannabis use disorder**
3. **Substance use disorder**
4. **Opioid use disorder**
5. **Tobacco use disorder**

GROUP INVOLVED IN
AGAUR_SGR17: 01460
RETICS-Trastornos Adictivos

Original publications

TOTAL	6
IF	23,37
Mean IF	3,89
Q1	83%
D1	17%
MA	83%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Antoni Gual (HCB)
T. 93 227 54 00 (Ext.: 3167)
tgual@clinic.cat

RESEARCHERS
Hugo López Pelayo (HCB)
Laia Miquel (HCB)

ASSISTANT RESEARCHERS
Mercè Balcells Oliveró (HCB)
Miquel Monràs (HCB)

POST-DOCTORAL RESEARCHERS
Pablo Barrio (HCB)
Laura Nuño (HCB)

PRE-DOCTORAL RESEARCHERS
Chrysanthi Blithikioti (IDIBAPS)
Pol Bruguera (HCB)
Elsa Caballeria (IDIBAPS)
Eugènia Campenys (IDIBAPS)
Mireiam Graell (HCB)
Ana López Lazcano (HCB)
Clara Oliveras (HCB)

TECHNICIANS
Magalí Andreu (FCRB)
Fleur Marie Booth (FCRB)
Rebecca Gordon (FCRB)
Silvia Grothe (FCRB)
Silvia Matrai (FCRB)
Blanca Paniello (FCRB)
Nina Potapova (FCRB)

NURSING STAFF
Lídia Teixidó (HCB)

COLLABORATORS
Noelia Alcaraz (HCB)
Neus Freixa (HCB)
Anna Lligoña (HCB)
Silvia Mondon (HCB)
Lluisa Ortega (HCB)
Maria Teresa Pons (HCB)
Soraya Sabater (HCB)

PROBLEM

Most citizens consume drugs (alcohol, tobacco, cannabis, cocaine), often without being aware of them. The drug business (legal and illegal) causes a few to enrich themselves, many suffer directly or indirectly and we all end up paying the related high social and health costs.

The research of this group, therefore, develops within a broad framework, ranging from the molecular mechanisms of addiction to the study of socioeconomic costs or causes of stigmatisation suffered by people with addiction.

APPROACH

The group aims to understand why a person goes from consuming drugs to an addiction, what role the family and society play and how they can be part of the recovery. It does this by promoting quality care based on scientific evidence, adopting a broad perspective: psychological, social and medical.

New technologies are a reality in today's lifestyle and, therefore, they are also an essential part of our day-to-day endeavours.

IMPACT

The group will provide new preventive measures to reduce the number of people using drugs. For those who still decide to use drugs, the group adopts a harm-reduction principle, promoting informed choices, and up-to-date, accurate information; resulting in the least possible damage to health and well-being and, therefore, lower costs to the individual and society.

It has developed standardised units of measurement, such as the Standard Beverage Unit or the Standard Cannabis Unit, which facilitate the study of risks of consumption to health. Thus, the group's main goal is to create and validate useful treatments that allow the person to have more control over their life, their decisions and their health. Its objective is to provide tools that allow more people to be treated and to achieve their own goals; one such tool being Nalmefene (a drug that has been proven effective against alcoholism). The overarching priority is to eliminate stigma.

RESEARCH LINES

- Epidemiology, prevention and health care costs.

- New assesment and therapeutic tools for addictive disorders.

- Treatment approach for addictive patients with organic complications.

PUBLICATIONS

Originals / I.F.: 23.368

1. López-Pelayo H, Aubin HJ, Drummond C, Dom G, Pascual F, Rehm J, Saitz R, Scafato E, Gual A. **"The post-COVID era": challenges in the treatment of substance use disorder (SUD) after the pandemic.** *Bmc Medicine.* 18(1):241. I.F.: 6.782

2. Madero S; Oliveras C; Pons MT; Sague M; López-Pelayo H; Gual A; Balcells M. **Cannabis use the week before admission to psychiatric in-patient service as a marker of severity.** *Journal of Psychiatric Research.* 129:40-46. I.F.: 3.745

3. López-Lazcano AI, Gual A, Colmenero J, Caballería E, Lligoña A, Navasa M, Crespo G, López E, López-Pelayo H. **Active Smoking Before Liver Transplantation in Patients with Alcohol Use Disorder: Risk Factors and Outcomes.** *Journal of Clinical Medicine.* 9(9):2710. I.F.: 3.303

4. Barrio P, Gual A, Lligoña A, Teixidor L, Weinmann W, Yegles M, Wurst FM. **Phosphatidylethanol for Monitoring Alcohol Use in Liver Transplant Candidates: An Observational Study.** *Journal of Clinical Medicine.* 9(9):3060. I.F.: 3.303

5. Hernández-Serrano O, Ghi?? A, Figueras-Puigderrajols N, Fernández-Ruiz J, Monras M, Ortega L, Mondon S, Teixidor L, Gual A, Ugas-Ballester L, Fernández M, Montserrat R, Porras-Garcia B, Ferrer-Garcia M, Gutiérrez-Maldonado J. **Predictors of Changes in Alcohol Craving Levels during a Virtual Reality Cue Exposure Treatment among Patients with Alcohol Use Disorder.** *Journal of Clinical Medicine.* 9(9):3018. I.F.: 3.303

6. López-Pelayo H, Caballeria E, Díaz E, Sánchez A, Segura L, Colom J, Wallace P, Gual A. **Digital brief interventions for risky drinkers are not the panacea: A pilot study exploring barriers for its implementation according to professionals' perceptions.** *Health Informatics Journal.* 26(2):925-933. I.F.: 2.932

Review / I.F.: 18.392

1. Caballeria E, Oliveras C, Nuño L, Balcells-Oliveró M, Gual A, López-Pelayo H. **A systematic review of treatments for alcohol-related cognitive impairment: lessons from the past and gaps for future interventions.** *Psychological Medicine.* 50(13):2113-2127. I.F.: 5.811

2. Campeny E., López-Pelayo H., Nutt D., Blithikioti C., Oliveras C., Nuño L., Maldonado R., Florez G., Arias F., Fernández-Artamendi S., Villalbí J.R., Sellarès J., Ballbè M., Rehm J., Balcells-Olivero M.M., Gual A. **The blind men and the elephant: Systematic review of systematic reviews of cannabis use related health harms.** *European Neuropsychopharmacology.* 33:1-35. I.F.: 3.853

3. López-Pelayo H, Zuluaga P, Caballeria E, Van den Brink W, Mann K, Gual A. **Safety of nalmefene for the treatment of alcohol use disorder: an update.** *Expert Opinion on Drug Safety.* 19(1):9-17. I.F.: 3.383

4. Berdzuli N; Ferreira-borges C; Gual A; Rehm J. **Alcohol control policy in Europe: Overview and exemplary countries.** *International Journal of Environmental Research and Public Health.* 17(21):8162. I.F.: 2.849

5. Jané-Llopis E, Anderson P, Piazza M, O'Donnell A, Gual A, Schulte B, Pérez Gómez A, de Vries H, Natera Rey G, Kokole D, V Bustamante I, Braddick F, Mejía Trujillo J, Solovei A, Pérez De León A, Kaner EF, Matrai S, Manthey J, Mercken L, López-Pelayo H, Rowlands G, Schmidt C, Rehm J. **Implementing primary healthcare-based measurement, advice and treatment for heavy drinking and comorbid depression at the municipal level in three Latin American countries: final protocol for a quasiexperimental study (SCALA study).** *Bmj Open.* 10(7):e038226. I.F.: 2.496

Letters / I.F.: 5.034

1. Schaub MP, Berman AH, López Pelayo H, Boumparis N, Khadjesari Z, Blankers M, Gual A, Riper H, Pas L. **e-INEBRIA Special Interest Group Roadmap for Best Practices for Research on Brief Digital Interventions for Problematic Alcohol and Illicit Drug Use.** *Journal of Medical Internet Research.* 22(8):e20368. I.F.: 5.034

GRANTS FOR RESEARCH IN PROGRESS

Gual A. **Red Temática de Investigación Cooperativa en Salud - Trastornos adictivos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0017/0009
Duration: 01/01/2017-31/12/2021

Gual A. **La TRV como biomarcador de alteraciones cerebrales en el consumo crónico de cánnabis (TRV-CAN).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00874
Duration: 01/01/2018-30/06/2021

Gual A. **Definición del patrón de consumo de riesgo de cannabis: implicaciones para la detección y la intervención precoz.**
Sponsored by: Ministerio de Sanidad, Consumo y Bienestar Social. MSSSI_PNSD17
Duration: 01/01/2018-30/06/2021

Gual A. **Scale-up of Prevention and Management of Alcohol Use Disorders and Comorbid Depression in Latin America.**
Sponsored by: European Commission. CE_H2020-SC1_17_1
Duration: 01/12/2017-30/11/2021

Gual A. **A step ahead to tackle future trends in addictions.**
Sponsored by: European Commission. CE_JUST-2017-AG-DRU
Duration: 01/10/2018-31/03/2020

Gual A. **Developing and Extending Evidence and Practice from the Standard European Alcohol Survey.**
Sponsored by: European Commission. CE_TED_Chafea17_01
Duration: 18/12/2018-18/12/2021

Gual A. **Health Intrapreneurship Management Programme : Accelerator of Creativity in interdisciplinary Teams.**
Sponsored by: European Commission.
CE_EIT_Campus19_Def
Duration: 02/04/2019-02/03/2020

Gual A. **Piloting Brief interventions to reduce risk of FAS/FASD, following 1st and 2nd standarised European Alcohol Survey and providing support to Member States to strengthen their capacity to tackle alcohol related harm.**
Sponsored by: European Commission.
CE_TED_Chafea18_10
Duration: 08/07/2019-07/07/2022

4.12 Clinical neurophysiology

LOCATION
HCB building

KEYWORDS
1. **Neurophysiology**
2. **Sleep**
3. **Neuropathic pain**
4. **Motor control and sensorimotor integration**
5. **Epilepsy**

RELATED DISEASES
1. **Sleep disorders**
2. **Epilepsy**
3. **Neuropathic pain**
4. **Dysautonomia**
5. **Coma**
6. **ANTI-IGLON5 disease**
7. **Neuromuscular disorders**

GROUP INVOLVED IN
CIBERNED

Original publications

TOTAL	24
IF	**141,86**
Mean IF	**5,91**
Q1	**71%**
D1	**42%**
MA	**33%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Alejandro Iranzo (HCB)
T. 93 227 54 13
airanzo@clinic.cat

EMERITUS
Josep Valls Solé (HCB)

RESEARCHERS
Maria del Mar Carreño (HCB)
Jordi Casanova (HCB)
Maria Centeno (UB)
Antonio Jesús Donaire (HCB)
Carles Gaig (HCB)
Judith Navarro (HCB)
Joan Santamaria (HCB)

PRE-DOCTORAL RESEARCHERS
Merve Albayrak (UB)
Estefanía Conde (FCRB)
Lilia Correa (UB)
Francisco Gil (UB)
Paula Marrero (UB)
Lenin Alejandro Reyes (UB)

NURSING STAFF
Isabel Manzanares (HCB)

ADMINISTRATIVE STAFF
Mònica Serradell (FCRB)

COLLABORATORS
Amaia Muñoz (HCB)

PROBLEM

Very little is known about the physiological bases of the functioning of the nervous system and the pathophysiology of its diseases, such as sleep disorders, coma, epilepsy, neuropathic pain or dysautonomia (the abnormal functioning of the autonomous nervous system).

This makes it difficult for patients with diseases of the nervous system to find drugs or other therapeutic alternatives that will cure them or significantly improve their quality of life. Although we have a considerable amount of clinical, neurophysiological and basic knowledge of the nervous system and its diseases at our disposal, it continues to be insufficient.

APPROACH

The group evaluates the neurophysiological study of nervous system disorders, from the most basic level to clinical practice, including sleep disorders, epilepsy, chronic pain, coma and dysautonomic alterations.

Patients are studied with electrophysiological techniques such as EEG, overnight polysomnography, multiple audio latencies, somatosensory and nociceptive-evoked potentials, electromyogram, autonomic and trunk reflexes and the startle reaction (the body's response to being startled).

IMPACT

The group's research has led to the discovery of a new nervous system disorder (anti-IgLON5 disease), characterised by a triad consisting of a complex sleep disorder, cerebral protein antibodies and tauopathy (accumulation of Tau proteins) in the brain.

This has made it possible to: demonstrate that REM phase sleep disorder is a predictor for Parkinson's disease, provide surgical and pharmacological solutions for epilepsy, describe the pathophysiological bases of neuropathic pain and demonstrate that the subcortical motor systems participate in the execution of movements and position.

RESEARCH LINES

- Epilepsy.
- Motor control.
- Neuropathic pain.
- Sleep and sleep disorders.

PUBLICATIONS

Originals / I.F.: 141.858

1. Barbosa J; Stein H; Martinez RL; Galan-Gadea A; Li S; Dalmau J; Adam KCS; Valls-Solé J; Constantinidis C; Compte A. **Interplay between persistent activity and activity-silent dynamics in the prefrontal cortex underlies serial biases in working memory.** *Nature Neuroscience.* 23(8):1016-1024. I.F.: 20.071

2. Lammers GJ; Bassetti CLA; Dolenc-Groselj L; Jennum PJ; Kallweit U; Khatami R; Lecendreux M; Manconi M; Mayer G; Partinen M; Plazzi G; Reading PJ; Santamaria J; Sonka K; Dauvilliers Y. **Diagnosis of central disorders of hypersomnolence: A reappraisal by European experts.** *Sleep Medicine Reviews.* 52:101306. I.F.: 9.607

3. Landa J, Gaig C, Plagumà J, Saiz A, Antonell A, Sanchez-Valle R, Dalmau J, Graus F, Sabater L. **Effects of IgLON5 antibodies on neuronal cytoskeleton: a link between autoimmunity and neurodegeneration.** *Annals of Neurology.* 88(5):1023-1027. I.F.: 9.037

4. Ariño H, Muñoz-Lopetegi A, Martinez-Hernandez E, Armangue T, Rosa-Justicia M, Escudero D, Matos N, Graus F, Sugranyes G, Castro-Fornieles J, Compte A, Dalmau J, Santamaria J. **Sleep disorders in anti-NMDAR encephalitis.** *Neurology.* 95(6):e671-e684. I.F.: 8.770

5. Iranzo A, Stefani A, Niñerola-Baizan A, Stokner H, Serradell M, Vilas D, Holzknecht E, Gaig C, Pavia J, Lomeña F, Reyes D, Seppi K, Santamaria J, Högl B, Tolosa E, Poewe W, Sleep Innsbruck Barcelona (SINBAR) Group. **Left-hemispheric predominance of nigrostriatal deficit in isolated REM sleep behavior disorder.** *Neurology.* 94(15):e1605-e1613. I.F.: 8.770

6. Lorenzo Caciagli, Luke A Allen, Xiaosong He, Karin Trimmel, Sjoerd B Vos, Maria Centeno, Marian Galovic, Meneka K Sidhu, Pamela J Thompson, Danielle S Bassett, Gavin P Winston, John S Duncan, Matthias J Koepp, Michael R Sperling. **Thalamus and focal to bilateral seizures: A multiscale cognitive imaging study.** *Neurology.* 95(17):e2427-e2441. I.F.: 8.770

7. Garrido A; Iranzo A; Stefani A; Serradell M; Muñoz-Lopetegi A; Marrero P; Högl B; Gaig C; Santamaria J; Tolosa E; Poewe W. **Lack of Asymmetry of Nigrostriatal Dopaminergic Function in Healthy Subjects.** *Movement Disorders.* 35(6):1072-1076. I.F.: 8.679

8. Gil-López F, Boget T, Manzanares I, Donaire A, Conde-Blanco E, Baillés E, Pintor L, Setoaín X, Bargalló N, Navarro J, Casanova J, Valls J, Roldán P, Rumià J, Casanovas G, Domenech G, Torres F, Carreño M. **External trigeminal nerve stimulation for drug resistant epilepsy: a randomized controlled trial.** *Brain Stimulation.* 13(5):1245-1253. I.F.: 6.565

9. Grau-Rivera O, Operto G, Falcón C, Sánchez-Benavides G, Cacciaglia R, Brugulat-Serrat A, Gramunt N, Salvadó G, Suárez-Calvet M, Minguillon C, Iranzo Á, Gispert JD, Molinuevo JL, ALFA Study. **Association between insomnia and cognitive performance, gray matter volume, and white matter microstructure in cognitively unimpaired adults.** *Alzheimers Research & Therapy.* 12(1):4. I.F.: 6.116

10. Lorenzo Caciagli, Britta Wandschneider, Maria Centeno, Christian Vollmar, Sjoerd B Vos, Karin Trimmel, Lili Long, Fenglai Xiao, Alexander J Lowe, Meneka K Sidhu, Pamela J Thompson, Gavin P Winston, John S Duncan, Matthias J Koepp. **Motor hyperactivation during cognitive tasks: An endophenotype of juvenile myoclonic epilepsy.** *Epilepsia.* 61(7):1438-1452. I.F.: 6.040

11. Rafecas A, Bañeras J, Sans-Roselló J, Ortiz-Pérez JT, Rueda-Sobella F, Santamarina E, Milà L, Sionis A, Gaig C, García-García C, Barrabés JA, García-Dorado D, Lidón RM. **Change in neuron specific enolase levels in out-of-hospital cardiopulmonary arrest survivors as a simple and useful tool to predict neurological prognosis.** *Revista Española de Cardiología.* 73(3):232-240. I.F.: 4.642

12. Rafecas A; Bañeras J; Sans-Roselló J; Ortiz-Pérez J; Rueda-Sobella F; Santamarina E; Milà L; Sionis A; Gaig C; García-García C; Barrabés J; García-Dorado D; Lidón R. **Change in neuron specific enolase levels in out-of-hospital cardiopulmonary arrest survivors as a simple and useful tool to predict neurological prognosis.** *Revista Española de Cardiología.* 73(3):232-240.I.F.: 4.642

13. Gersel Stokholm M, Iranzo A, Østergaard K, Serradell M, Otto M, Bacher Svendsen K, Garrido A, Vilas D, Fedorova TD, Santamaria J, Møller A, Gaig C, Hiraoka K, Brooks DJ, Okamura N, Borghammer P, Tolosa E, Pavese N. **Cholinergic denervation in idiopathic rapid eye movement sleep behaviour disorder patients.** *European Journal of Neurology.* 27(4):644-652. I.F.: 4.516

14. Campabadal A; Abos A; Segura B; Serradell M; Uribe C; Baggio HC; Gaig C; Santamaria J; Compta Y; Bargallo N; Junque C; Iranzo A. **Disruption of posterior brain functional connectivity and its relation to cognitive impairment in idiopathic REM sleep behavior disorder.** *Neuroimage-Clinical.* 25:102138. I.F.: 4.350

15. Campabadal A; Inguanzo A; Segura B; Serradell M; Abos A; Uribe C; Gaig C; Santamaria J; Compta Y; Bargallo N; Junque C; Iranzo A. **Cortical gray matter progression in idiopathic REM sleep behavior disorder and its relation to cognitive decline.** *Neuroimage-Clinical.* 28:102421. I.F.: 4.350

16. Marrero-González P; Iranzo A; Bedoya D; Serradell M; Niñerola-Baizán A; Perissinotti A; Gaig C; Vilaseca I; Alobid I; Santamaría J; Mullol J. **Prodromal Parkinson disease in patients with idiopathic hyposmia.** *Journal of Neurology.* 267(12):3673-3682. I.F.: 3.956

17. Gersel Stokholm M; Garrido A; Tolosa E; Serradell M; Iranzo A; Østergaard K; Borghammer P; Møller A; Parbo P; Stær K; Brooks DJ; Martí MJ; Pavese N. **Imaging dopamine function and microglia in asymptomatic LRRK2 mutation carriers.** *Journal of Neurology.* 267(8):2296-2300. I.F.: 3.956

18. Stær K; Iranzo A; Stokholm MG; Østergaard K; Serradell M; Otto M; Svendsen KB; Garrido A; Vilas D; Santamaria J; Møller A; Gaig C; Brooks DJ; Borghammer P; Tolosa E; Pavese N. **Cortical cholinergic dysfunction correlates with microglial activation in the substantia innominata in REM sleep behavior disorder.** *Parkinsonism & Related Disorders.* 81:89-93. I.F.: 3.926

19. Versace V, Campostrini S, Sebastianelli L, Saltuari L, Valls-Solé J, Kofler M. **Threat vs control: Potentiation of the trigeminal blink reflex by threat proximity is overruled by self-stimulation.** *Psychophysiology.* 57:e13626. I.F.: 3.692

20. Falip M, Jaraba S, Rodríguez-Bel L, Castañer S, Mora J, Arroyo P, Miro J, Sala-Padró J, Martínez-Yélamos S, Casasnovas C, Gascon-Bayarri J, Real E, Morandeira F, Vidal N, Veciana M, Saiz A, Carreño M. **Seizures and epilepsy of autoimmune origin: A long-term prospective study.** *Seizure-European Journal of Epilepsy*. 81:157-165. I.F.: 2.522

21. Conde-Blanco E; Centeno M; Tio E; Muriana D; García-Peñas JJ; Serrano P; Nagel AG; Serratosa J; Jiménez ÁP; Toledo M; Donaire A; Manzanares I; Betrán O; Carreño M. **Emergency implementation of telemedicine for epilepsy in Spain: Results of a survey during SARS-CoV-2 pandemic.** *Epilepsy & Behavior*. 111:107211. I.F.: 2.508

22. Manzanares I; Sevilla Guerra S; Lombraña M; Gil-López F; Conde-Blanco E; Zabalegui A; Pfäfflin M; May T; Kostov B; Moreno-Poyato A; Donaire A; Guio L; Beltran O; Cuzco C; Carreño M. **Spanish version of the Satisfaction with Epilepsy Care questionnaire: Adaptation and psychometric properties.** *Epilepsy & Behavior*. 102:106812. I.F.: 2.508

23. E Kızıltan M; Dogan C; Ayas S; Valls-Sole J; Gunduz A. **Changes in brainstem excitatory and inhibitory pathways in dry eye syndrome.** *Neuroscience Letters*. 718:134726. I.F.: 2.274

24. Castellano M, Ibañez-Soria D, Kroupi E, Acedo J, Campolo M, Soria-Frisch A, Valls-Sole J, Verma A, Ruffini G. **Intermittent tACS during a visual task impacts neural oscillations and LZW complexity.** *Experimental Brain Research*. 238(6):1411-1422. I.F.: 1.591

Review / I.F.: 43.43

1. Muñoz-Lopetegi A; Graus F; Dalmau J; Santamaria J. **Sleep disorders in autoimmune encephalitis.** *Lancet Neurol*. 19(12):1010-1022. I.F.: 30.039

2. Iranzo A. **Sleep and neurological autoimmune diseases.** *Neuropsychopharmacology*. 45(1):129-140. I.F.: 6.751

3. Gil-Nagel A; Álvarez Carriles J; Bermejo P; Carreño M; García-Morales I; García Peñas JJ; López-González FJ; Ruíz-Falcó M; Sánchez JC; Tato C. **Consensus statement for the management of generalized tonic-clonic seizures in Spain.** *Acta Neurologica Scandinavica*. 141(1):22-32. I.F.: 2.684

4. Rosenow F; Akamatsu N; Bast T; Bauer S; Baumgartner C; Benbadis S; Bermeo-Ovalle A; Beyenburg S; Bleasel A; Bozorgi A; Brázdil M; Carreño M; Delanty N; Devereaux M; Duncan J; Fernandez-Baca Vaca G; Francione S; García Losarcos N; Ghanma L; Gil-Nagel A; Hamer H; Holthausen H; Omidi SJ; Kahane P; Kalamangalam G; Kanner A; Knake S; Kovac S; Krakow K; Krämer G; Kurlemann G; Lacuey N; Landazuri P; Lim SH; Londoño LV; LoRusso G; Luders H; Mani J; Matsumoto R; Miller J; Rosenow F; Akamatsu N; Bast T; Bauer S; Baumgartner C; Benbadis S; Bermeo-Ovalle A; Beyenburg S; Bleasel A; Bozorgi A; Brázdil M; Carreño M; Delanty N; Devereaux M; Duncan J; Fernandez-Baca Vaca G; Francione S; García Losarcos N; Ghanma L; Gil-Nagel A. **Could the 2017 ILAE and the four-dimensional epilepsy classifications be merged to a new "Integrated Epilepsy Classification"?** *Seizure-European Journal of Epilepsy*. 78:31-37. I.F.: 2.522

5. Casanova-Molla, Jordi; Valls-Sol, Josep. **Electrodiagnostic Testing of Small Fiber Neuropathies: A Review of Existing Guidelines.** *Journal of Clinical Neurophysiology*. 37(4):288-293. I.F.: 1.434

Letters / I.F.: 9.38

1. Palmini A., Akamatsu N., Bast T., Bauer S., Baumgartner C., Benbadis S., Bermeo-Ovalle A., Beyenburg S., Bleasel A., Bozorgi A., Brázdil M., Carreño M., Delanty N., Devereaux M., Duncan J.S., Fernandez-Baca Vaca G., García Losarcos N., Ghanma L., Gil-Nagel A., Hamer H., Holthausen H., Omidi S.J., Kahane P., Kalamangalam G., Kanner A., Knake S., Kovac S., Kraemer G., Kurlemann G., Lacuey N., Landazuri P., Hui Lim S., LoRusso G., Luders H., Mani J., Matsumoto R., Miller J., Noachtar S., O'Dwyer R., Park J., Palmini A., Akamatsu N., Bast T., Bauer S., Baumgartner C., Benbadis S., Bermeo-Ovalle A., Beyenburg S., Bleasel A., Bozorgi A., Brázdil M., Carreño M., Delanty N., Devereaux M., Duncan J.S., Fernandez-Baca Vaca G. **From theory to practice: Critical points in the 2017 ILAE classification of epileptic seizures and epilepsies.** *Epilepsia*. 61(2):350-353. I.F.: 6.040

2. Santamaria J, Rosenfeld MR. **Take Care.** *Current Treatment Options in Neurology*. 22(10):32. I.F.: 3.340

Case Reports / I.F.: 6.709

1. Villarreal-Compagny M, Iglesias P, Marco-Hernández J, Milisenda JC, Casanova-Molla J, Hernández-Rodríguez J, Puig S, Carrera C, Prieto-González S. **ANCA-associated vasculitic neuropathy during treatment with ipilimumab.** *Rheumatology*. 59(1):251-252. I.F.: 5.606

2. Aldecoa, Iban; Archilla, Ivan; Herrero, Laura; Garcia, Felipe; Torres, Berta; Gaig, Carles; Fernandez, Sara; Angeles Marcos, Maria; Gelpi, Ellen. **Image of the month: Measles inclusion body encephalitis.** *Clinical Neuropathology*. 39(4):148-151. I.F.: 1.103

Consortium Publications / I.F.: 3.998

1. Pérez-Soriano A, Arnal Segura M, Botta-Orfila T, Giraldo D, Fernández M, Compta Y, Fernández-Santiago R, Ezquerra M, Tartaglia GG, Martí MJ, Catalan MSA Registry (CMSAR). **Transcriptomic differences in MSA clinical variants.** *Scientific Reports*. 10(1):10310. I.F.: 3.998

GRANTS FOR RESEARCH IN PROGRESS

Casanova J. **Caracterización del daño axonal en la neuropatía por quimioterapia: perfil temporal de la degeneración y regeneración axonal y su repercusión en los diferentes sistemas funcionales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00984
Duration: 01/01/2017-30/06/2021

Gaig C, Sabater L. **Estudio de la enfermedad por anticuerpos IgLON5 e implicación en los mecanismos de neurodegeneración.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00067
Duration: 01/01/2019-31/12/2021

Santamaria J. **Vía visual aferente: innovación para trastorno del Sueño REM y Parkinson.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01228
Duration: 01/01/2018-30/06/2022

4.13 Neuropsychology

LOCATION
UB School of Medicine

KEYWORDS
1. **Magnetic resonance imaging**
2. **Structural and functional connectivity**
3. **Aging and degenerative illness**
4. **Non-invasive brain stimulation**
5. **Brain plasticity**

RELATED DISEASES
1. **Parkinson's disease**
2. **Multisystem atrophy**
3. **Supranuclear palsy**
4. **Idiopathic rem sleep behavior disorder**
5. **Epilepsy**
6. **Fibromialgya**

GROUP INVOLVED IN
AGAUR_SGR17: 00748

Original publications

TOTAL	24
IF	112,68
Mean IF	4,70
Q1	63%
D1	38%
MA	21%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Carme Junqué (UB)
T. 93 403 92 98
cjunque@ub.edu

RESEARCHERS
Núria Bargalló (HCB)
David Bartrés Faz (UB)
Teresa Boget (UB)
Marina López Solà (UB)
Roser Sala (UB)
Bàrbara Segura-Fabregas (UB)

ASSISTANT RESEARCHERS
Cristina Solé Padulles (UB)

POST-DOCTORAL RESEARCHERS
Kilian Abellaneda Pérez (UB)
Alexandra Abós (UB)
Anna Campabadal (UB)
Gabriele Cattaneo (IDIBAPS)
Dídac Macià (UB)
Carme Uribe (UB)
Lídia Vaqué Alcázar (UB)

PRE-DOCTORAL RESEARCHERS
María del Rocío Cabello (UB)
Anna Inguanzo (UB)
Lídia Mulet (UB)
Javier Oltra (UB)
Ruben Perellón Alfonso (UB)

PROBLEM

In an ever-ageing society, it is important to understand the risk factors, protective factors and cerebral mechanisms related to preservation of the cognitive function and mental health over time.

Ageing and the neurodegenerative disorders that come with it lead to significant cognitive and behavioural alterations in the daily lives of people who are affected and their families.

We need to gain an understanding of the brain networks involved in these alterations, their possible modification and responses to pharmacological and behavioural interventions.

APPROACH

The group studies the brain networks involved in cognitive and behavioural deficits related to ageing and neurodegenerative conditions. To achieve this objective, it uses multimodal magnetic resonance imaging and transcranial magnetic and electric stimulation techniques.

IMPACT

The group's research is targeted at improving and solving problems related to what is known as 'Health, ageing and disease'.
In recent years, the group has applied multimodal approaches that have enabled team members to increase their knowledge regarding changes in the structure and functional connectivity of the brain in relation with diverse phases of ageing and neurodegenerative diseases.

Maintaining the sound structure and function of the neural networks during our lifetime is essential for ageing well and depends largely on our habits and lifestyles.

RESEARCH LINES

- Ageing and brain health.

- Cerebral plasticity.

- Neuropsychology and neuroimaging in Parkinson's disease.

PUBLICATIONS

Originals / I.F.: 112.684

1. Hatton SN, Huynh KH, Bonilha L, Abela E, Alhusaini S, Altmann A, Alvim MKM, Balachandra AR, Bartolini E, Bender B, Bernasconi N, Bernasconi A, Bernhardt B, Bargallo N, Caldairou B, Caligiuri ME, Carr

SJA, Cavalleri GL, Cendes F, Concha L, Davoodi-Bojd E, Desmond PM, Devinsky O, Doherty CP, Domin M, Duncan JS, Focke NK, Foley SF, Gambardella A, Gleichgerrcht E, Guerrini R, Hamandi K, Ishikawa A, Keller SS, Kochunov PV, Kotikalapudi R, Kreilkamp BAK, Kwan P, Labate A, Langner S, Lenge M, Liu M, Lui E, Martin P, Mascalchi M, Moreira JCV, Morita-Sherman ME, O'Brien TJ, Pardoe HR, Pariente JC, Ribeiro LF, Richardson MP, Rocha CS, Rodríguez-Cruces R, Rosenow F, Severino M, Sinclair B, Soltanian-Zadeh H, Striano P, Taylor PN, Thomas RH, Tortora D, Velakoulis D, Vezzani A, Vivash L, von Podewils F, Vos SB, Weber B, Winston GP, Yasuda CL, Zhu AH, Thompson PM, Whelan CD, Jahanshad N, Sisodiya SM, McDonald CR. **White matter abnormalities across different epilepsy syndromes in adults: an ENIGMA-Epilepsy study.** *Brain.* 143(8):2454-2473. I.F.: 11.337

2. Sala-Vila A, Valls-Pedret C, Rajaram S, Coll-Padrós N, Cofán M, Serra-Mir M, Pérez-Heras AM, Roth I, Freitas-Simoes TM, Doménech M, Calvo C, López-Illamola A, Bitok E, Buxton NK, Huey L, Arechiga A, Oda K, Lee GJ, Corella D, Vaqué-Alcázar L, Sala-Llonch R, Bartrés-Faz D, Sabaté J, Ros E. **Effect of a 2-year diet intervention with walnuts on cognitive decline**. *American Journal of Clinical Nutrition.* 111(3):590-600. I.F.: 6.766

3. Gil-López F, Boget T, Manzanares I, Donaire A, Conde-Blanco E, Baillés E, Pintor L, Setoaín X, Bargalló N, Navarro J, Casanova J, Valls J, Roldán P, Rumià J, Casanovas G, Domenech G, Torres F, Carreño M. **External trigeminal nerve stimulation for drug resistant epilepsy: a randomized controlled trial.** *Brain Stimulation.* 13(5):1245-1253. I.F.: 6.565

4. Lombardo D; Cassé-Perrot C; Ranjeva JP; Le Troter A; Guye M; Wirsich J; Payoux P; Bartrés-Faz D; Bordet R; Richardson JC; Felician O; Jirsa V; Blin O; Didic M; Battaglia D. **Modular slowing of resting-state dynamic functional connectivity as a marker of cognitive dysfunction induced by sleep deprivation.** *Neuroimage.* 222:117155. I.F.: 5.902

5. Quattrini G, Pievani M, Jovicich J, Aiello M, Bargalló N, Barkhof F, Bartres-Faz D, Beltramello A, Pizzini FB, Blin O, Bordet R, Caulo M, Constantinides M, Didic M, Drevelegas A, Ferretti A, Fiedler U, Floridi P, Gros-Dagnac H, Hensch T, Hoffmann KT, Kuijer JP, Lopes R, Marra C, Müller BW, Nobili F, Parnetti L, Payoux P, Picco A, Ranjeva JP, Roccatagliata L, Rossini PM, Salvatore M, Schonknecht P, Schott BH, Sein J, Soricelli A, Tarducci R, Tsolaki M, Visser PJ, Wiltfang J, Richardson JC, Frisoni GB, Marizzoni M, PharmaCog Consortium. **Amygdalar nuclei and hippocampal subfields on MRI: test-retest reliability of automated volumetry across different MRI sites and vendors.** *Neuroimage.* 218:116932. I.F.: 5.902

6. Uribe C, Junque C, Gómez-Gil E, Abos A, Mueller SC, Guillamon A. **Brain network interactions in transgender individuals with gender incongruence**. *Neuroimage.* 211:116613. I.F.: 5.902

7. Aggensteiner PM, Holz NE, Böttinger BW, Baumeister S, Hohmann S, Werhahn JE, Naaijen J, Ilbegi S, Glennon JC, Hoekstra PJ, Dietrich A, Deters RK, Saam MC, Schulze UME, Lythgoe DJ, Sethi A, Craig MC, Mastroianni M, Sagar-Ouriaghli I, Santosh PJ, Rosa M, Bargallo N, Castro-Fornieles J, Arango C, Penzol MJ, Vidal J, Franke B, Zwiers MP, Buitelaar JK, Walitza S, Banaschewski T, Brandeis D. **The effects of callous-unemotional traits and aggression subtypes on amygdala activity in response to negative faces.** *Psychological Medicine.* 1-9. I.F.: 5.811

8. Mancho-Fora, Nuria; Montala-Flaquer, Marc; Farras-Permanyer, Laia; Bartres-Faz, David; Vaque-Alcazar, Lidia; Pero-Cebollero, Maribel; Guardia-Olmos, Joan. **Resting-State Functional Connectivity Dynamics in Healthy Aging: An Approach Through Network Change Point Detection.** *Brain Connectivity.* 10(3):134-142. I.F.: 5.263

9. Fjell AM; Sørensen Ø; Amlien IK; Bartrés-Faz D; Bros DM; Buchmann N; Demuth I; Drevon CA; Düzel S; Ebmeier KP; Idland AV; Kietzmann TC; Kievit R; Kühn S; Lindenberger U; Mowinckel AM; Nyberg L; Price D; Sexton CE; Solé-Padullés C; Pudas S; Sederevicius D; Suri S; Wagner G; Watne LO; Westerhausen R; Zsoldos E; Walhovd KB. **Self-reported sleep relates to hippocampal atrophy across the adult lifespan: results from the Lifebrain consortium.** *Sleep.* 43(5):zsz280. I.F.: 4.805

10. Falgàs N, Ruiz-Peris M, Pérez-Millan A, Sala-Llonch R, Antonell A, Balasa M, Borrego-Écija S, Ramos-Campoy O, Augé JM, Castellví M, Tort-Merino A, Olives J, Fernández-Villullas G, Blennow K, Zetterberg H, Bargalló N, Lladó A, Sánchez-Valle R. **Contribution of CSF biomarkers to early-onset Alzheimer's disease and frontotemporal dementia neuroimaging signatures.** *Human Brain Mapping.* 41(8):2004-2013. I.F.: 4.421

11. Wierenga LM, Doucet GE, Dima D, Agartz I, Aghajani M, Akudjedu TN, Albajes-Eizagirre A, Alnaes D, Alpert KI, Andreassen OA, Anticevic A, Asherson P, Banaschewski T, Bargallo N, Baumeister S, Baur-Streubel R, Bertolino A, Bonvino A, Boomsma DI, Borgwardt S, Bourque J, den Braber A, Brandeis D, Breier A, Brodaty H, Brouwer RM, Buitelaar JK, Busatto GF, Calhoun VD, Canales-Rodríguez EJ, Cannon DM, Caseras X, Castellanos FX, Chaim-Avancini TM, Ching CR, Clark VP, Conrod PJ, Conzelmann A, Crivello F, Davey CG, Dickie EW, Ehrlich S, Van't Ent D, Fisher SE, Fouche JP, Franke B, Fuentes-Claramonte P, de Geus EJ, Di Giorgio A, Glahn DC, Gotlib IH, Grabe HJ, Gruber O, Gruner P, Gur RE, Gur RC, Gurholt TP, de Haan L, Haatveit B, Harrison BJ, Hartman CA, Hatton SN, Heslenfeld DJ, van den Heuvel OA, Hickie IB, Hoekstra PJ, Hohmann S, Holmes AJ, Hoogman M, Hosten N, Howells FM, Hulshoff Pol HE, Huyser C, Jahanshad N, James AC, Jiang J, Jönsson EG, Joska JA, Kalnin AJ,, Klein M, Koenders L, Kolskår KK, Krämer B, Kuntsi J, Lagopoulos J, Lazaro L, Lebedeva IS, Lee PH, Lochner C, Machielsen MW, Maingault S, Martin NG, Martínez-Zalacaín I, Mataix-Cols D, Mazoyer B, McDonald BC, McDonald C, McIntosh AM, McMahon KL, McPhilemy G, van der Meer D, Menchón JM, Naaijen J, Nyberg L, Oosterlaan J, Paloyelis Y, Pauli P, Pergola G, Pomarol-Clotet E, Portella MJ, Radua J, Reif A, Richard G, Roffman JL, Rosa PG, Sacchet MD, Sachdev PS, Salvador R, Sarró S, Satterthwaite TD, Saykin AJ, Serpa MH, Sim K, Simmons A, Smoller JW, Sommer IE, Soriano-Mas C, Stein DJ, Strike LT, Szeszko PR, Temmingh HS, Thomopoulos SI, Tomyshev AS, Trollor JN, Uhlmann A, Veer IM, Veltman DJ, Voineskos A, Völzke H, Walter H, Wang L, Wang Y, Weber B, Wen W, West JD, Westlye LT, Whalley HC, Williams SC, Wittfeld K, Wolf DH, Wright MJ, Yoncheva YN, Zanetti MV, Ziegler GC, de Zubicaray GI, Thompson PM, Crone EA, Frangou S, Tamnes CK Karolinska Schizophrenia Project (KaSP) Consortium. **Greater male than female variability in regional brain structure across the lifespan.** *Human Brain Mapping.* I.F.: 4.421

12. Naaijen J; Mulder LM; Ilbegi S; de Bruijn S; Kleine-Deters R; Dietrich A; Hoekstra PJ; Marsman JC; Aggensteiner PM; Holz NE; Boettinger B; Baumeister S; Banaschewski T; Saam MC; M E Schulze U; Santosh PJ; Sagar-Ouriaghli I; Mastroianni M; Castro Fornieles J; Bargallo N; Rosa M; Arango C; Penzol MJ; Werhahn JE; Walitza S; Brandeis D; Glennon JC; Franke B; Zwiers MP; Buitelaar JK. **Specific cortical and subcortical alterations for reactive and proactive aggression in children and adolescents with disruptive behavior.** *Neuroimage-Clinical.* 27:102344. I.F.: 4.350

13. Campabadal A; Abos A; Segura B; Serradell M; Uribe C; Baggio HC; Gaig C; Santamaria J; Compta Y; Bargallo N; Junque C; Iranzo A. **Disruption of posterior brain functional connectivity and its relation to cognitive impairment in idiopathic REM sleep behavior disorder.** *Neuroimage-Clinical.* 25:102138. I.F.: 4.350

14. Campabadal A; Inguanzo A; Segura B; Serradell M; Abos A; Uribe C; Gaig C; Santamaria J; Compta Y; Bargallo N; Junque C; Iranzo A. **Cortical gray matter progression in idiopathic REM sleep behavior disorder and its relation to cognitive decline.** *Neuroimage-Clinical.* 28:102421. I.F.: 4.350

15. Werhahn JE, Mohl S, Willinger D, Smigielski L, Roth A, Hofstetter C, Stämpfli P, Naaijen J, Mulder LM, Glennon JC, Hoekstra PJ, Dietrich A, Kleine Deters R, Aggensteiner PM, Holz NE, Baumeister S, Banaschewski T, Saam MC, Schulze UME, Lythgoe DJ, Sethi A, Craig MC, Mastroianni M, Sagar-Ouriaghli I, Santosh PJ, Rosa M, Bargallo N, Castro-Fornieles J, Arango C, Penzol MJ, Zwiers MP, Franke B, Buitelaar JK, Walitza S, Brandeis D. **Aggression subtypes relate to distinct resting state functional connectivity in children and adolescents with disruptive behavior.** *European Child & Adolescent Psychiatry.* I.F.: 3.941

16. Falgàs N, Balasa M, Bargalló N, Borrego-Écija S, Ramos-Campoy O, Fernández-Villullas G, Bosch B, Olives J, Tort-Merino A, Antonell A, Castellví M, Allen IE, Sánchez-Valle R, Lladó A. **Diagnostic Accuracy of MRI Visual Rating Scales in the Diagnosis of Early Onset Cognitive Impairment.** *Journal of Alzheimer's Disease.* 73(4):1575-1583. I.F.: 3.909

17. Abellaneda-Pérez K; Vaqué-Alcázar L; Perellón-Alfonso R; Bargalló N; Kuo MF; Pascual-Leone A; Nitsche MA; Bartrés-Faz D. **Differential tDCS and tACS Effects on Working Memory-Related Neural Activity and Resting-State Connectivity.** *Frontiers in Neuroscience.* 13:1440. I.F.: 3.707

18. Reddan, Marianne C; Young, Hannah; Falkner, Julia; Lopez-Sola, Marina; Wager, Tor D. **Touch and social support influence interpersonal synchrony and pain.** *Social Cognitive and Affective Neuroscience.* 15(10):1064-1075. I.F.: 3.571

19. Mateu-Estivill, Roger; Forne, Susanna; Lopez-Sala, Anna; Falcon, Carles; Caldu, Xavier; Sopena, Josep M.; Sans, Anna; Adan, Ana; Grau, Sergi; Bargallo, Nuria; Serra-Grabulosa, Josep M. **Functional connectivity alterations associated with literacy difficulties in early readers.** *Brain Imaging and Behavior.* I.F.: 3.391

20. Vaqué-Alcázar L; Sala-Llonch R; Abellaneda-Pérez K; Coll-Padrós N; Valls-Pedret C; Bargalló N; Ros E; Bartrés-Faz D. **Functional and structural correlates of working memory performance and stability in healthy older adults.** *Brain Structure & Function.* 225(1):375-386. I.F.: 3.298

21. Friedman BB, Suri S, Solé-Padullés C, Düzel S, Drevon CA, Baaré WFC, Bartrés-Faz D, Fjell AM, Johansen-Berg H, Madsen KS, Nyberg L, Penninx BWJH, Sexton C, Walhovd KB, Zsoldos E, Budin-Ljøsne I . **Are People Ready for Personalized Brain Health? Perspectives of Research Participants in the Lifebrain Consortium.** *The Gerontologist.* 60(6):1050-1059. I.F.: 3.286

22. Kwong, Anna Chan; Casse-Perrot, Catherine; Costes-Salon, Marie-Claude; Jouve, Elisabeth; Lanteaume, Laura; Audebert, Christine; Rouby, Franck; Lefebvre, Marie-Noelle; Ranjeva, Jean-Philippe; Beck, Arnaud; Deplanque, Dominique; Ponchel, Amelie; Vervueren, Celine; Truillet, Romain; Babilon, Claudio; Auffret, Alexandra; Richardson, Jill C; Payoux, Pierre; Bartres-Faz, David; Blin, Olivier; Bordet, Regis; Micallef, Joelle; Pharmacog Consortium. **An Alzheimer Disease Challenge Model: 24-Hour Sleep Deprivation in Healthy Volunteers, Impact on Working Memory, and Reversal Effect of Pharmacological Intervention A Randomized, Double-Blind, Placebo-Controlled, Crossover Study.** *Journal of Clinical Psychopharmacology.* 40(3):222-230. I.F.: 2.700

23. López-Caballero F; Martin-Trias P; Ribas-Prats T; Gorina-Careta N; Bartrés-Faz D; Escera C. **Effects of cTBS on the Frequency-Following Response and Other Auditory Evoked Potentials.** *Frontiers in Human Neuroscience.* 14:250. I.F.: 2.673

24. Penadés R; Segura B; Inguanzo A; García-Rizo C; Catalán R; Masana G; Bernardo M; Junqué C. **Cognitive remediation and brain connectivity: A resting-state fMRI study in patients with schizophrenia.** *Psychiatry Research-Neuroimaging.* 303:111140. I.F.: 2.063

Review / I.F.: 21.548

1. Stern Y, Arenaza-Urquijo EM, Bartrés-Faz D, Belleville S, Cantilon M, Chetelat G, Ewers M, Franzmeier N, Kempermann G, Kremen WS, Okonkwo O, Scarmeas N, Soldan A, Udeh-Momoh C, Valenzuela M, Vemuri P, Vuoksimaa E, the Reserve, Resilience and Protective Factors PIA Empirical Definitions and Conceptual Frameworks Workgroup. **Whitepaper: Defining and investigating cognitive reserve, brain reserve, and brain maintenance**. *Alzheimers & Dementia.* 16(9):1305-1311. I.F.: 17.127

2. Sisodiya SM, Whelan CD, Hatton SN, Huynh K, Altmann A, Ryten M, Vezzani A, Caligiuri ME, Labate A, Gambardella A, Ives-Deliperi V, Meletti S, Munsell BC, Bonilha L, Tondelli M, Rebsamen M, Rummel C, Vaudano AE, Wiest R, Balachandra AR, Bargalló N, Bartolini E, Bernasconi A, Bernasconi N, Bernhardt B, Caldairou B, Carr SJA, Cavalleri GL, Cendes F, Concha L, Desmond PM, Domin M, Duncan JS, Focke NK, Guerrini R, Hamandi K, Jackson GD, Jahanshad N, Kälviäinen R, Keller SS, Kochunov P, Kowalczyk MA, Kreilkamp BAK, Kwan P, Lariviere S, Lenge M, Lopez SM, Martin P, Mascalchi M, Moreira JCV, Morita-Sherman ME, Pardoe HR, Pariente JC, Raviteja K, Rocha CS, Rodríguez-Cruces R, Seeck M, Semmelroch MKHG, Sinclair B, Soltanian-Zadeh H, Stein DJ, Striano P, Taylor PN, Thomas RH, Thomopoulos SI, Velakoulis D, Vivash L, Weber B, Yasuda CL, Zhang J, Thompson PM, McDonald CR, ENIGMA Consortium Epilepsy Working Group. **The ENIGMA-Epilepsy working group: Mapping disease from large data sets.** *Human Brain Mapping.* I.F.: 4.421

GRANTS FOR RESEARCH IN PROGRESS

Bargalló N. **Validación de la resonancia funcional en reposo y tractografia para la lateralización del lenguaje en pacientes epilepticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01211
Duration: 01/01/2018-30/06/2021

Bartres D. **Barcelona Brain Health Initiative.**
Sponsored by: Obra social la Caixa. Fundació Abertis
Duration: 01/07/2016-31/12/2022

Bartrés D. **Estudio de los cambios cerebrales inducidos por estimulación cerebral no invasiva como predictores del estado de salud cerebral futuro en personas de edad avanzada.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_RTI2018-095181-B-C21
Duration: 01/01/2019-31/12/2022

Bartres D. **Healthy minds from 0-100 years: Optimising the use of European brain imaging cohorts (Lifebrain).**
Sponsored by: European commission. CE_H2020
Duration: 01/01/2017-31/12/2021

Junqué C. **Fenotipos cognitivos en la enfermedad de Parkinson mediante la identificación de patrones de neuroimagen multimodal.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_PSI2017-86930-P
Duration: 01/01/2018-31/12/2020

López-Solà M. **Identifying neural pathophysiology in juvenile fibromyalgia.**
Sponsored by: National Institutes of Health. INT_NIH_R01AR074795
Duration: 01/01/2019-31/12/2023

López-Solà M. **SPRINT: Signature for Pain Recovery IN Teens.**
Sponsored by: National Institutes of Health. INT_NIH_R61NS114926
Duration: 01/01/2019-31/12/2023

Segura-Fabregas B, Uribe C. **Multimodal imaging in parkinsonisms: from the molecular synaptic pruning to the whole-brain connectomics (SYNPARK).**
Sponsored by: European Commission. CE_H2020
Duration: 20/09/2020-31/08/2023

DOCTORAL THESES

Bartres D. **Modulation of neural networks subtending cognitive aging.**
PhD student: Kilian Abellaneda Pérez

Bartres D, Sala R. **Characterizing cognitive aging through multimodal MRI and NIBS: Influence of education and gene expression.**
PhD student: Lídia Vaqué Alcázar

Junqué C, Segura B. **Idiopathic REM sleep behavior disorder and olfactory dysfunction in Parkinson's disease and premotor stages. MRI and neuropsychological studies.**
PhD student: Anna Campabadal Delgado

4.14 Advanced imaging in neuroimmunological diseases (ImaginEM)

LOCATION
CEK building, floor -1

KEYWORDS
1. **Multiple sclerosis**
2. **Neuroimage**

RELATED DISEASES
1. **Multiple sclerosis**
2. **Neuromyelitis optica**
3. **Mog diseases**
4. **Autoimmune encephalitis**

GROUP INVOLVED IN
RETIC

Original publications

TOTAL	9
IF	**44,02**
Mean IF	**4,89**
Q1	**44%**
D1	**33%**
MA	**33%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Sara Llufriu (HCB-IDIBAPS)
T. 93 227 54 14
sllufriu@clinic.cat

RESEARCHERS
Yolanda Blanco (HCB)

POST-DOCTORAL RESEARCHERS
Eloy Martinez de las Heras (IDIBAPS)
Elisabeth Solana (FCRB)

PRE-DOCTORAL RESEARCHERS
Elisabet López Soley (UB)
Carmen Montejo (IDIBAPS)

NURSING STAFF
Montserrat Artola (IDIBAPS)

PROBLEM

Multiple sclerosis and other neuroimmune diseases are a relevant cause of disability in young adults. Despite the significant advances that have been made in their treatment, there are still many unknowns to solve.

Advanced magnetic resonance techniques can help to strengthen our knowledge of the bases of neurological dysfunction and the functioning of the human brain.

APPROACH

This research group combines technological development with the clinical application of new techniques in advanced magnetic resonance imaging in patients with neurological diseases.

These tools are allowing it to identify new biomarkers that can predict the evolution of multiple sclerosis and other disorders and, therefore, to customise treatment to each individual patient.

They can also provide very valuable information about the functioning of the neural networks and their ability to recover, both in a healthy brain and an unhealthy one.

IMPACT

The group's research has been able to quantify the impact of the damage of neurons and glia and to identify the severity of damage inside the brain lesions on patients with multiple sclerosis using advanced magnetic resonance biomarkers.

The group also evaluated the clinical efficacy and neuroprotection of treatment with mesenchymal stem cells (adult stem cells that can be converted into various skeletal tissues). It has identified the neuronal networks that support the cognitive performance and pathological changes that patients suffer during the progression of multiple sclerosis. In this sense, the group is leading a multicentre project within the MAGNIMS group that aims to describe the changes that occur in patients' brain networks over time, as well as the consequences of the collapse of these networks.

The group is conducting a clinical trial on cognitive rehabilitation to understand the efficacy of cognitive training and the mechanisms of brain plasticity induced by the treatment in multiple sclerosis. The group also applies machine learning techniques to generate models that can help to predict disease evolution.

RESEARCH LINES

- Cognitive rehabilitation and brain plasticity in multiple sclerosis.

- MRI and genetic markers of multiple sclerosis long-term progression.

- Structural connectivity in multiple sclerosis.

PUBLICATIONS

Originals / I.F.: 44.023

1. Andorrà M; Alba-Arbalat S; Camos-Carreras A; Gabilondo I; Fraga-Pumar E; Torres-Torres R; Pulido-Valdeolivas I; Tercero-Uribe AI; Guerrero-Zamora AM; Ortiz-Perez S; Zubizarreta I; Sola-Valls N; Llufriu S; Sepulveda M; Martinez-Hernandez E; Armangue T; Blanco Y; Villoslada P; Sanchez-Dalmau B; Saiz A; Martinez-Lapiscina EH. **Using Acute Optic Neuritis Trials to Assess Neuroprotective and Remyelinating Therapies in Multiple Sclerosis.** *Jama Neurology.* 77(2):234-244. I.F.: 13.608

2. Sola-Valls N; Ariño H; Escudero D; Solana E; Lladó A; Sánchez-Valle R; Blanco Y; Saiz A; Dalmau J; Graus F. **Telemedicine assessment of long-term cognitive and functional status in anti-leucine-rich, glioma-inactivated 1 encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(2):e652. I.F.: 7.724

3. Radua J, Vieta E, Shinohara R, Kochunov P, Quidé Y, Green MJ, Weickert CS, Weickert T, Bruggemann J, Kircher T, Nenadić I, Cairns MJ, Seal M, Schall U, Henskens F, Fullerton JM, Mowry B, Pantelis C, Lenroot R, Cropley V, Loughland C, Scott R, Wolf D, Satterthwaite TD, Tan Y, Sim K, Piras F, Spalletta G, Banaj N, Pomarol-Clotet E, Solanes A, Albajes-Eizagirre A, Canales-Rodríguez EJ, Sarro S, Di Giorgio A, Bertolino A, Stäblein M, Oertel V, Knöchel C, Borgwardt S, du Plessis S, Yun JY, Kwon JS, Dannlowski U, Hahn T, Grotegerd D, Alloza C, Arango C, Janssen J, Díaz-Caneja C, Jiang W, Calhoun V, Ehrlich S, Yang K, Cascella NG, Takayanagi Y, Sawa A, Tomyshev A, Lebedeva I, Kaleda V, Kirschner M, Hoschl C, Tomecek D, Skoch A, van Amelsvoort T, Bakker G, James A, Preda A, Weideman A, Stein DJ, Howells F, Uhlmann A, Temmingh H, López-Jaramillo C, Díaz-Zuluaga A, Fortea L, Martinez-Heras E, Solana E, Llufriu S, Jahanshad N, Thompson P, Turner J, van Erp T, ENIGMA Consortium collaborators. **Increased power by harmonizing structural MRI site differences with the ComBat batch adjustment method in ENIGMA.** *Neuroimage.* 218:116956. I.F.: 5.902

4. Martínez-Heras E; Solana E; Prados F; Andorrà M; Solanes A; López-Soley E; Montejo C; Pulido-Valdeolivas I; Alba-Arbalat S; Sola-Valls N; Sepúlveda M; Blanco Y; Saiz A; Radua J; Llufriu S. **Characterization of multiple sclerosis lesions with distinct clinical correlates through quantitative diffusion MRI.** *Neuroimage-Clinical.* 28:102411. I.F.: 4.35

5. Gil-Varea E, Spataro N, Villar LM, Tejeda-Velarde A, Midaglia L, Matesanz F, Malhotra S, Eixarch H, Patsopoulos N, Fernández Ó, Oliver-Martos B, Saiz A, Llufriu S, Ramió-Torrentà L, Quintana E, Izquierdo G, Alcina A, Bosch E, Navarro A, Montalban X, Comabella M. **Targeted resequencing reveals rare variants enrichment in multiple sclerosis susceptibility genes.** *Human Mutation.* 41(7):1308-1320. I.F.: 4.124

6. Pulido-Valdeolivas I, Andorrà M, Gómez-Andrés D, Nakamura K, Alba-Arbalat S, Lampert EJ, Zubizarreta I, Llufriu S, Martinez-Heras E, Solana E, Sola-Valls N, Sepulveda M, Tercero-Uribe A, Blanco Y, Camos-Carreras A, Sanchez-Dalmau B, Villoslada P, Saiz A, Martinez-Lapiscina EH. **Retinal and brain damage during multiple sclerosis course: inflammatory activity is a key factor in the first 5 years.** *Scientific Reports.* 10(1):13333. I.F.: 3.998

7. Lopez-Soley E, Solana E, Martínez-Heras E, Andorra M, Radua J, Prats-Uribe A, Montejo C, Sola-Valls N, Sepulveda M, Pulido-Valdeolivas I, Blanco Y, Martinez-Lapiscina EH, Saiz A, Llufriu S. **Impact of Cognitive Reserve and Structural Connectivity on Cognitive Performance in Multiple Sclerosis.** *Frontiers in Neurology.* 11:581700. I.F.: 2.889

8. Sepúlveda M; Montejo C; Llufriu S; Sola-Valls N; Reyes D; Martinez-Lapiscina EH; Zubizarreta I; Pulido-Valdeolivas I; Martinez-Hernandez E; Ariño H; Baños N; Saiz A; Blanco Y. **Rebound of multiple sclerosis activity after fingolimod withdrawal due to planning pregnancy: Analysis of predisposing factors.** *Multiple Sclerosis and Related Disorders.* 38:101483. I.F.: 2.889

9. Toboso I; Tejeda-Velarde A; Alvarez-Lafuente R; Arroyo R; Hegen H; Deisenhammer F; Sainz de la Maza S; Alvarez-Cermeño JC; Izquierdo G; Paramo D; Oliva P; Casanova B; Agüera-Morales E; Franciotta D; Gastaldi M; Fernández O; Urbaneja P; Garcia-Dominguez JM; Romero F; Laroni A; Uccelli A; Perez-Sempere A; Saiz A; Blanco Y; Galimberti D; Scarpini E; Espejo C; Montalban X; Rasche L; Paul F; González I; Álvarez E; Ramo C; Caminero AB; Aladro Y; Calles C; Eguía P; Belenguer-Benavides A; Ramió-Torrentà L; Quintana E. **New Algorithms Improving PML Risk Stratification in MS Patients Treated With Natalizumab.** *Frontiers in Neurology.* 11:579438. I.F.: 2.889

GRANTS FOR RESEARCH IN PROGRESS

Blanco Y. **Terapia con células dendríticas asociada a tratamiento inmunomodulador en la esclerosis múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_ICI19/00034
Duration: 01/01/2020-31/12/2023

Llufriu S. **Rehabilitació cognitiva i plasticitat cerebral a l'Esclerosi Múltiple: avaluació a través d'un assaig clínic aleatoritzat i controlat.**
Sponsored by: Fundació Catalana de Neurologia. FUND_SOCCATNEUROL_01
Duration: 05/05/2017-31/12/2020

Llufriu S, Saiz A. **Biomarcadores de resonancia magnética avanzada en esclerosis múltiple: asociación con el perfil clínico evolutivo y sustrato genétio.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00587
Duration: 01/01/2016-30/11/2020

Llufriu S. **Red Temática de Investigación Cooperativa en Salud - Esclerosis múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_RD16/0015/0003
Duration: 01/01/2017-31/12/2021

Llufriu S, Saiz A. **Rehabilitación cognitiva y plasticidad cerebral en la Esclerosis Múltiple: en búsqueda de la evidencia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01030
Duration: 01/01/2019-31/12/2021

Llufriu S. **Rehabilitación cognitiva y plasticidad cerebral en la Esclerosis Múltiple: evaluación a través de un ensayo clínico aleatorizado y controlado.**
Sponsored by: Fundación Merck Salud. FSalud_17-EM-010
Duration: 01/06/2017-30/06/2021

4.15 Parkinson disease and other neurodegenerative movement disorders: clinical and experimental research

LOCATION
CELLEX building, floor 3B

KEYWORDS
1. **Parkinson disease**
2. **Movement disorders**
3. **Degenerative neurological diseases**

RELATED DISEASES
1. **Parkinson disease**
2. **Progressive supranuclear palsy**
3. **Multiple system atrophy**
4. **Huntington's disease**
5. **Dystonia**

GROUP INVOLVED IN
AGAUR_SGR17: 01502
CIBERNED

Original publications

TOTAL	28
IF	179,69
Mean IF	6,42
Q1	89%
D1	46%
MA	18%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
M. Josep Martí Domenech (HCB)
T. 93 227 57 85
mjmarti@clinic.cat

EMERITUS
Eduard Tolosa (UB)

RESEARCHERS
Yaroslau Compta (HCB)
Mario Antonio Ezquerra (IDIBAPS)
Rubén Fernández Santiago (IDIBAPS)
José Esteban Muñoz (HCB)
Francesc Valldeoriola (HCB)

PRE-DOCTORAL RESEARCHERS
Marisol Gallardo (FCRB)
Alicia Garrido (FCRB-HCB)
Cèlia Painous (FCRB)
Alejandra Pérez Soriano (IDIBAPS)
Almudena Sánchez Gómez (HCB-FCRB)

TECHNICIANS
Manel Fernandez Sánchez (IDIBAPS-UB)
Pilar Santacruz (FCRB)

NURSING STAFF
Ana Cámara (HCB)
Donina Mese Obiang (FCRB)
Idoia Zaro (FCRB)

ADMINISTRATIVE STAFF
Laura Maragall (CIBER-FCRB)

PROBLEM

Parkinson's disease is a common disorder and its incidence is expected to increase in coming years. Although its causes are not yet known, it has been established that genetic and environmental factors intervene and, in some cases, it is difficult to diagnose with precision.

At present, no curative treatments exist, only measures for stabilising and controlling the symptoms. One of the main problems, however, is that by the time that the most characteristic motor symptoms become apparent, the death of most of the dopaminergic neurons in the brain, which are essential for motor function, has already occurred.

This pre-symptomatic phase is common to all neurodegenerative diseases, so it is important to extend research in order to apply treatments that will restore or modify the progression of these pathologies.

APPROACH

The group conducts in-depth clinical studies, develops clinical trials and engages in neuroimaging, genetic, genomic and biomarker studies related to Parkinson's disease, atypical parkinsonism, and other movement disorders, such as Huntington's disease and dystonia.

In addition, it conducts research on the initial stage of Parkinson's disease in patients at risk of developing this condition, when its motor symptoms have not yet appeared and neuroprotective therapies are still possible.

IMPACT

Parkinson's disease is a common disorder and its incidence is expected to increase in coming years. Although its causes are not yet known, it has been established that genetic and environmental factors intervene and, in some cases, it is difficult to diagnose with precision.

At present, no curative treatments exist, only measures for stabilising and controlling the symptoms. One of the main problems, however, is that by the time that the most characteristic motor symptoms become apparent, the death of most of the dopaminergic neurons in the brain, which are essential for motor function, has already occurred.

This pre-symptomatic phase is common to all neurodegenerative diseases, so it is important to extend research in order to apply treatments that will restore or modify the progression of these pathologies.

RESEARCH LINES

- Molecular basis in Parkinson's disease.

- Neurodegenerative movement disorders: diagnose and treatment.

- Parkinson's disease prodromal phase.

PUBLICATIONS

Originals / I.F.: 179.692

1. Kovacs GG, Lukic MJ, Irwin DJ, Arzberger T, Respondek G, Lee EB, Coughlin D, Giese A, Grossman M, Kurz C, McMillan CT, Gelpi E, Compta Y, van Swieten JC, Laat LD, Troakes C, Al-Sarraj S, Robinson JL, Roeber S, Xie SX, Lee VM, Trojanowski JQ, Höglinger GU. **Distribution patterns of tau pathology in progressive supranuclear palsy.** *Acta Neuropathologica.* 140(2):99-119. I.F.: 14.256

2. Valente T, Dentesano G, Ezquerra M, Fernandez-Santiago R, Martinez-Martin J, Gallastegui E, Domuro C, Compta Y, Martí MJ, Bachs O, Márquez-Kisinousky L, Straccia M, Solà C, Saura J. **CCAAT/enhancer binding protein δ is a transcriptional repressor of α-synuclein.** *Cell Death and Differentiation.* 27(2):509-524. I.F.: 10.717

3. Núñez C; Callén A; Lombardini F; Compta Y; Stephan-Otto C. **Different Cortical Gyrification Patterns in Alzheimer's Disease and Impact on Memory Performance.** *Annals of Neurology.* 88(1):67-80. I.F.: 9.037

4. Iranzo A, Stefani A, Niñerola-Baizan A, Stokner H, Serradell M, Vilas D, Holzknecht E, Gaig C, Pavia J, Lomeña F, Reyes D, Seppi K, Santamaria J, Högl B, Tolosa E, Poewe W, Sleep Innsbruck Barcelona (SINBAR) Group. **Left-hemispheric predominance of nigrostriatal deficit in isolated REM sleep behavior disorder.** *Neurology.* 94(15):e1605-e1613. I.F.: 8.770

5. Pérez-Soriano A, Bravo P, Soto M, Infante J, Fernández M, Valldeoriola F, Muñoz E, Compta Y, Tolosa E, Garrido A, Ezquerra M, Fernández-Santiago R, Martí MJ, Catalan MSA registry (CMSAR). **MicroRNA Deregulation in Blood Serum Identifies Multiple System Atrophy Altered Pathways.** *Movement Disorders.* 35(10):1873-1879. I.F.: 8.679

6. San Luciano M, Tanner CM, Meng C, Marras C, Goldman SM, Lang AE, Tolosa E, Schüle B, Langston JW, Brice A, Corvol JC, Goldwurm S, Klein C, Brockman S, Berg D, Brockmann K, Ferreira JJ, Tazir M, Mellick GD, Sue CM, Hasegawa K, Tan EK, Bressman S, Saunders-Pullman R, Michael J. **Fox Foundation LRRK2 Cohort Consortium. Nonsteroidal Anti-Inflammatory Use and LRRK2 Parkinson's Disease Penetrance.** *Movement Disorders.* 35(10):1755-1764. I.F.: 8.679

7. Gövert F; Becktepe J; Balint B; Rocchi L; Brugger F; Garrido A; Walter T; Hannah R; Rothwell J; Elble R; Deuschl G; Bhatia K. **Temporal discrimination is altered in patients with isolated asymmetric and jerky upper limb tremor.** *Movement Disorders.* 35(2):306-315. I.F.: 8.679

8. Garrido A; Iranzo A; Stefani A; Serradell M; Muñoz-Lopetegi A; Marrero P; Högl B; Gaig C; Santamaria J; Tolosa E; Poewe W. **Lack of Asymmetry of Nigrostriatal Dopaminergic Function in Healthy Subjects.** *Movement Disorders.* 35(6):1072-1076. I.F.: 8.679

9. Jecmenica Lukic, Milica; Kurz, Carolin; Respondek, Gesine; Grau-Rivera, Oriol; Compta, Yaroslau; Gelpi, Ellen; Troakes, Claire; van Swieten, John C; Giese, Armin; Roeber, Sigrun; Arzberger, Thomas; Hoeglinger, Guenter; MDS Endorsed Psp Study Grp. **Copathology in Progressive Supranuclear Palsy: Does It Matter?** *Movement Disorders.* 35(6):984-993. I.F.: 8.679

10. Grimm MJ, Respondek G, Stamelou M, Arzberger T, Ferguson L, Gelpi E, Giese A, Grossman M, Irwin DJ, Pantelyat A, Rajput A, Roeber S, van Swieten JC, Troakes C, Meissner WG, Nilsson C, Piot I, Compta Y, Rowe JB, Höglinger GU, Movement Disorder Society-Endorsed PSP Study Group. **Clinical Conditions "Suggestive of Progressive Supranuclear Palsy"-Diagnostic Performance.** *Movement Disorders.* 35(12):2301-2313. I.F.: 8.679

11. Respondek G; Grimm M; Piot I; Arzberger T; Compta Y; Englund E; Ferguson L; Gelpi E; Roeber S; Giese A; Grossman M; Irwin D; Meissner W; Nilsson C; Pantelyat A; Rajput A; van Swieten J; Troakes C; Höglinger G. **Validation of the movement disorder society criteria for the diagnosis of 4-repeat tauopathies.** *Movement Disorders.* 35(1):171-176. I.F.: 8.679

12. Garcia-Vidal C, Moreno-García E, Hernández-Meneses M, Puerta-Alcalde P, Chumbita M, Garcia-Pouton N, Linares L, Rico V, Cardozo C, Martínez JA, García F, Mensa J, Castro P, Nicolás JM, Muñoz J, Vidal D, Soriano A, COVID19-Researchers. **Personalized therapy approach for hospitalized patients with COVID-19.** *Clinical Infectious Diseases.* I.F.: 8.313

13. Orme T; Hernandez D; Ross OA; Kun-Rodrigues C; Darwent L; Shepherd CE; Parkkinen L; Ansorge O; Clark L; Honig LS; Marder K; Lemstra A; Rogaeva E; St George-Hyslop P; Londos E; Zetterberg H; Morgan K; Troakes C; Al-Sarraj S; Lashley T; Holton J; Compta Y; Van Deerlin V; Trojanowski JQ; Serrano GE; Beach TG; Lesage S; Galasko D; Masliah E; Santana I; Pastor P; Tienari PJ; Myllykangas L; Oinas M; Revesz T; Lees A; Boeve BF; Petersen RC; Ferman TJ; Escott-Price V. **Analysis of neurodegenerative disease-causing genes in dementia with Lewy bodies.** *Acta Neuropathologica Communications.* 8(1):5. I.F.: 6.270

14. Vilas D, Tolosa E, Quintana M, Pont-Sunyer C, Santos M, Casellas A, Valldeoriola F, Compta Y, Martí MJ, Mullol J. **Olfaction in LRRK2 Linked Parkinson's Disease: Is It Different from Idiopathic Parkinson's Disease?** *Journal of Parkinsons Disease.* 10(3):951-958. I.F.: 5.178

15. Juárez-Flores DL; Ezquerra M; Gonzàlez-Casacuberta Ì; Ormazabal A; Morén C; Tolosa E; Fucho R; Guitart-Mampel M; Casado M; Valldeoriola F; de laTorre-Lara J; Muñoz E; Tobías E; Compta Y; García-García FJ; García-Ruiz C; Fernandez-Checa JC; Martí MJ; Grau JM; Cardellach F; Artuch R; Fernández-Santiago R; Garrabou G. **Disrupted mitochondrial and metabolic plasticity underlie comorbidity between age-related and degenerative disorders as parkinson disease and type 2 diabetes mellitus.** *Antioxidants.* 9(11):1063. I.F.: 5.014

16. Gersel Stokholm M, Iranzo A, Østergaard K, Serradell M, Otto M, Bacher Svendsen K, Garrido A, Vilas D, Fedorova TD, Santamaria J, Møller A, Gaig C, Hiraoka K, Brooks DJ, Okamura N, Borghammer P, Tolosa E, Pavese N. **Cholinergic denervation in idiopathic rapid eye movement sleep behaviour disorder patients.** *European Journal of Neurology.* 27(4):644-652. I.F.: 4.516

17. Painous C, van Os NJH, Delamarre A, Michailoviene I, Marti MJ, van de Warrenburg BP, Meissner WG, Utkus A, Reinhard C, Graessner H, Tijssen MA. **Management of rare movement disorders in Europe: outcome of surveys of the European Reference Network for Rare Neurological Diseases.** *European Journal of Neurology.* 27(8):1493-1500. I.F.: 4.516

18. Santos-Garcia, D; de Deus Fonticoba, T; Suarez Castro, E; Aneiros Diaz, A; McAfee, D; Catalan, M J; Alonso-Frech, F; Villanueva, C; Jesus, S; Mir, P; Aguilar, M; Pastor, P; Garcia Caldentey, J; Esltelrich Peyret, E; Planellas, L L; Marti, M J; Caballol, N; Hernandez Vara, J; Marti Andres, G; Cabo, I; Avila Rivera, M A; Lopez Manzanares, L; Redondo, N; Martinez-Martin, P; COPPADIS Study Grp. **Non-motor symptom burden is strongly correlated to motor complications in patients with Parkinson's disease.** *European Journal of Neurology.* 27(7):1210-1223. I.F.: 4.516

19. Campabadal A; Abos A; Segura B; Serradell M; Uribe C; Baggio HC; Gaig C; Santamaria J; Compta Y; Bargallo N; Junque C; Iranzo A. **Disruption of posterior brain functional connectivity and its relation to cognitive impairment in idiopathic REM sleep behavior disorder.** *Neuroimage-Clinical.* 25:102138. I.F.: 4.350

20. Campabadal A; Inguanzo A; Segura B; Serradell M; Abos A; Uribe C; Gaig C; Santamaria J; Compta Y; Bargallo N; Junque C; Iranzo A. **Cortical gray matter progression in idiopathic REM sleep behavior disorder and its relation to cognitive decline.** *Neuroimage-Clinical.* 28:102421. I.F.: 4.350

21. Pérez-Soriano A, Arnal Segura M, Botta-Orfila T, Giraldo D, Fernández M, Compta Y, Fernández-Santiago R, Ezquerra M, Tartaglia GG, Martí MJ, Catalan MSA Registry (CMSAR). **Transcriptomic differences in MSA clinical variants.** *Scientific Reports.* 10(1):10310. I.F.: 3.998

22. Gersel Stokholm M; Garrido A; Tolosa E; Serradell M; Iranzo A; Østergaard K; Borghammer P; Møller A; Parbo P; Stær K; Brooks DJ; Martí MJ; Pavese N. **Imaging dopamine function and microglia in asymptomatic LRRK2 mutation carriers.** *Journal of Neurology.* 267(8):2296-2300. I.F.: 3.956

23. Vanegas MI; Marcé-Grau A; Martí-Sánchez L; Mellid S; Baide-Mairena H; Correa-Vela M; Cazurro A; Rodríguez C; Toledo L; Fernández-Ramos JA; Pons R; Aguilera-Albesa S; Martí MJ; Eiris J; Iglesias G; De Fabregues O; Maqueda E; Garriz-Luis M; Madruga M; Espinós C; Macaya A; Cabrera JC; Pérez-Dueñas B. **Delineating the motor phenotype of SGCE-myoclonus dystonia syndrome.** *Parkinsonism & Related Disorders.* 80:165-174. I.F.: 3.926

24. Sánchez-Gómez A; Alcarraz-Vizán G; Fernández M; Fernández-Santiago R; Ezquerra M; Cámara A; Serrano M; Novials A; Muñoz E; Valldeoriola F; Compta Y; Martí MJ. **Peripheral insulin and amylin levels in Parkinson's disease.** *Parkinsonism & Related Disorders.* 79:91-96. I.F.: 3.926

25. Stær K; Iranzo A; Stokholm MG; Østergaard K; Serradell M; Otto M; Svendsen KB; Garrido A; Vilas D; Santamaria J; Møller A; Gaig C; Brooks DJ; Borghammer P; Tolosa E; Pavese N. **Cortical cholinergic dysfunction correlates with microglial activation in the substantia innominata in REM sleep behavior disorder.** *Parkinsonism & Related Disorders.* 81:89-93. I.F.: 3.926

26. Iankova V, Respondek G, Saranza G, Painous C, Cámara A, Compta Y, Aiba I, Balint B, Giagkou N, Josephs KA, Otsuki M, Golbe LI, Bhatia KP, Stamelou M, Lang AE, Höglinger GU, Movement Disorder Society-endorsed PSP Study Group. **Video-tutorial for the Movement Disorder Society criteria for progressive supranuclear palsy.** *Parkinsonism & Related Disorders.* 78:200-203. I.F.: 3.926

27. Painous C, Martí MJ, Simonet C, Garrido A, Valldeoriola F, Muñoz E, Cámara A, Compta Y. **Prediagnostic motor and non-motor symptoms in progressive supranuclear palsy: The step-back PSP study.** *Parkinsonism & Related Disorders.* 74:67-73. I.F.: 3.926

28. Montori-Palacín E, Ramon J, Compta Y, Insa M, Prieto-González S, Carrasco-Miserachs I, Vidal-Serra RX, Altes-Capella J, López-Soto A, Bosch X. **Quick diagnosis units: predictors of time to diagnosis and costs.** *Medicine.* 99(30):e21241. I.F.: 1.552

Review / I.F.: 39.843

1. Tolosa, Eduardo; Vila, Miquel; Klein, Christine; Rascol, Olivier. **LRRK2 in Parkinson disease: challenges of clinical trials.** *Nature Reviews Neurology.* 16(2):97-107. I.F.: 27.000

2. Bodro M, Compta Y, Sánchez-Valle R. **Presentations and mechanisms of CNS disorders related to COVID-19.** *Neurology-Neuroimmunology & Neuroinflammation.* 8(1):e923. I.F.: 7.724

3. Pagonabarraga, Javier; Arbelo, Jose Matias; Grandas, Francisco; Luquin, Maria-Rosario; Martin, Pablo Martinez; Rodriguez-Oroz, Mari Cruz; Valldeoriola, Francesc; Kulisevsky, Jaime. **A Spanish Consensus on the Use of Safinamide for Parkinson's Disease in Clinical Practice.** *Brain Sciences.* 10(3):176. I.F.: 3.332

4. Carbayo Á; Sarto J; Santana D; Compta Y; Urra X. Hemichorea as Presentation of Acute Cortical Ischemic Stroke. C**ase Series and Review of the Literature.** *Journal of Stroke & Cerebrovascular Diseases.* 29(10):105150. I.F.: 1.787

Letters / I.F.: 3.926

1. Gandarilla-Martínez N; Carbayo-Viejo Á; Sánchez-Gómez A; Valldeoriola-Serra F. **Parkinsonism in a patient with Plasmodium falciparum malaria.** *Parkinsonism & Related Disorders.* 80:181-183. I.F.: 3.926

Editorial / I.F.: 3.926

1. Respondek G; Compta Y. **Primary progressive apraxia of speech: A further piece in the progressive supranuclear/corticobasal degeneration spectrum jigsaw.** *Parkinsonism & Related Disorders.* 81:219-220. I.F.: 3.926

Case Reports / I.F.: 10.007

1. Bodro M, Compta Y, Llansó L, Esteller D, Doncel-Moriano A, Mesa A, Rodríguez A, Sarto J, Martínez-Hernandez E, Vlagea A, Egri N, Filella X, Morales-Ruiz M, Yagüe J, Soriano Á, Graus F, García F, "Hospital Clínic Infecto-COVID-19" and "Hospital Clínic Neuro-COVID-19" groups.

Increased CSF levels of IL-1β, IL-6, and ACE in SARS-CoV-2-associated encephalitis. *Neurology-Neuroimmunology & Neuroinflammation.* 7(5):e821. I.F.: 7.724

2. Rodríguez-Vázquez A, Vicente-Pascual M, Mayà-Casalprim G, Valldeoriola F. **Neuroimaging in hypoglycaemic encephalopathy diagnosis and prognosis: A case report.** *Neurología.* 35(2):131-132. I.F.: 2.283

Consortium Publications / I.F.: 109.219

1. Katrina L Grasby, Neda Jahanshad, Jodie N Painter, ..., Jason L Stein, Paul M Thompson, Sarah E Medland, Enhancing NeuroImaging Genetics through Meta-Analysis Consortium (ENIGMA)-Genetics working group. **The genetic architecture of the human cerebral cortex**. *Science.* 367(6484):eaay6690. I.F.: 41.846

2. Simuni T; Uribe L; Cho HR; Caspell-Garcia C; Coffey CS; Siderowf A; Trojanowski JQ; Shaw LM; Seibyl J; Singleton A; Toga AW; Galasko D; Foroud T; Tosun D; Poston K; Weintraub D; Mollenhauer B; Tanner CM; Kieburtz K; Chahine LM; Reimer A; Hutten SJ; Bressman S; Marek K; Arnedo V; Clark A; Fraiser M; Kopil C; Chowdhury S; Sherer T; Daegele N; Casaceli C; Dorsey R; Wilson R; Mahes S; Salerno C; Crawford K; Casalin P; Malferrari G; Weisz MG. **Clinical and dopamine transporter imaging characteristics of non-manifest LRRK2 and GBA mutation carriers in the Parkinson's Progression Markers Initiative (PPMI): a cross-sectional study**. *Lancet Neurol.* 19(1):71-80. I.F.: 30.039

3. Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X; Leonard H; Blauwendraat C; Faghri F; Bras J; Guerreiro R; Tucci A; Kia DA; Houlden H; Plun-Favreau H; Mok KY; Wood NW; Lovering R; R'Bibo L; Rizig M; Chelban V; Tan M; Morris HR; Middlehurst B; Quinn J; Billingsley K; Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X; Leonard H; Blauwendraat C; Faghri F; Bras J; Guerreiro R; Tucci A; Kia DA; Houlden H; Plun-Favreau H; Mok KY; Wood NW; Lovering R; R'Bibo L; Rizig M; Chelban V; Tan M; Morris HR; Middlehurst B; Quinn J; Billingsley K; Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X; Leonard H; Blauwendraat C; Faghri F; Bras J; Guerreiro R; Tucci A; Kia DA; Houlden H; Plun-Favreau H; Mok KY; Wood NW; Lovering R; R'Bibo L; Rizig M; Chelban V; Tan M; Morris HR; Middlehurst B; Quinn J; Billingsley K; Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X; Leonard H; Blauwendraat C; Faghri F; Bras J; Guerreiro R; Tucci A; Kia DA; Houlden H; Plun-Favreau H; Mok KY; Wood NW; Lovering R; R'Bibo L; Rizig M; Chelban V; Tan M; Morris HR; Middlehurst B; Quinn J; Billingsley K; Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X; Leonard H; Blauwendraat C; Faghri F; Bras J; Guerreiro R; Tucci A; Kia DA; Houlden H; Plun-Favreau H; Mok KY; Wood NW; Lovering R; R'Bibo L; Rizig M; Chelban V; Tan M; Morris HR; Middlehurst B; Quinn J; Billingsley K; Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X; Leonard H; Blauwendraat C; Faghri F; Bras J; Guerreiro R; Tucci A; Kia DA; Houlden H; Plun-Favreau H; Mok KY; Wood NW; Lovering R; R'Bibo L; Rizig M; Chelban V; Tan M; Morris HR; Middlehurst B; Quinn J; Billingsley K; Guelfi S; D'Sa K; Botía JA; Vandrovcova J; Reynolds RH; Zhang D; Trabzuni D; Collado-Torres L; Thomason A; Quijada Leyton P; Gagliano Taliun SA; Nalls MA; Noyce AJ; Nicolas A; Cookson MR; Bandres-Ciga S; Gibbs JR; Hernandez DG; Singleton AB; Reed X. **Regulatory sites for splicing in human basal ganglia are enriched for disease-relevant information.** *Nature Communications.* 11(1):1041. I.F.: 12.121

4. Iwaki H, Blauwendraat C, Makarious MB, Bandrés-Ciga S, Leonard HL, Gibbs JR, Hernandez DG, Scholz SW, Faghri F, Nalls MA, Singleton AB International Parkinson's Disease Genomics Consortium (IPDGC). **Penetrance of Parkinson's Disease in LRRK2 p.** *Movement Disorders.* 35(5):774-780. I.F.: 8.679

5. Esther Cubo, Pablo Martínez-Martín, Jerónimo González-Bernal, Elena Casas, Sandra Arnaiz, Javier Miranda, Pedro Gámez, Diego Santos-García, Coppadis Study Group. **Effects of Motor Symptom Laterality on Clinical Manifestations and Quality of Life in Parkinson's Disease.** *Journal of Parkinsons Disease.* 10(4):1611-1620. I.F.: 5.178

6. Leonard H; Blauwendraat C; Krohn L; Faghri F; Iwaki H; Ferguson G; Day-Williams A; Stone D; Singleton A; Nalls M; Gan-Or Z. **Genetic variability and potential effects on clinical trial outcomes: Perspectives in Parkinson's disease.** *Journal of Medical Genetics.* 57(5):331-338. I.F.: 4.943

7. S Jesús, M A Labrador-Espinosa, A D Adarmes, C Méndel-Del Barrio, J C Martínez-Castrillo, A Alonso-Cánovas, P Sánchez Alonso, S Novo-Ponte, M G Alonso-Losada, N López Ariztegui, J C Segundo Rodríguez, M I Morales, I Gastón, F Lacruz Bescos, P Clavero Ibarra, J Kulisevsky, J Pagonabarraga, B Pascual-Sedano, P Martínez-Martín, D Santos-García, P Mir, COPPADIS Study Group. **Non-motor symptom burden in patients with Parkinson's disease with impulse control disorders and compulsive behaviours: results from the COPPADIS cohort.** *Scientific Reports.* 10(1):16893. I.F.: 3.998

8. Diego Santos-García, Teres de Deus-Fonticoba, Ester Suárez Castro, Ángel M Aneiros Díaz, María J Feal-Painceiras, Jose M Paz-González, Carlos García-Sancho, Silvia Jesús, Pablo Mir, Lluís Planellas, Juan García-Caldentey, Nuria Caballol, Inés Legarda, Jorge Hernández-Vara, Isabel González-Aramburu, María A Ávila-Rivera, María J Catalán, Víctor Nogueira, María Álvarez-Sauco, Lydia Vela, Sonia Escalante, Esther Cubo, Pilar Sánchez-Alonso, María G Alonso-Losada, Nuria López-Ariztegui, Pablo Martinez-Martin, COPPADIS Study Group. **The impact of freezing of gait on functional dependency in Parkinson's disease with regard to motor phenotype.** *Neurological Sciences.* 41(10):2883-2892. I.F.: 2.415

GRANTS FOR RESEARCH IN PROGRESS

Compta Y, Martí MJ**. Amplificación de autoagregación de alfa-sinucleina y 4R-tau en tejido cerebral y liquido cerebroespinal mediante RTQuIC como biomarcador diferencial de parkinsonismos degenerativos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00096
Duration: 01/01/2018-30/06/2021

Compta Y. **Conservative iron chelation as a disease-modifying strategy in Parkinsons disease: a multicentric parallel-group,placebo-controlled, randomized clinical trial of deferiprone.**
Sponsored by: European Commission. CE_H2020-PHC-2014-2s
Duration: 01/05/2015-30/04/2021

Ezquerra M. **MicroRNAs as biomarker of conversion of REM behaviour disorder to Parkinson's disease.**
Sponsored by: Fundación Tatiana Pérez de Guzmán el Bueno. FUND_TATIANA16_PROY03
Duration: 23/11/2016-31/10/2020

Fernández Santiago R. **The beginnings of Parkinson Disease: a study of early disease mechanisms in a humanized in-vitro model.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2015_73508_JIN
Duration: 01/01/2017-31/12/2019

Martí MJ. **Parkinson and other Neurodegenerative Movement Disorders: Clinical and Experimental Research.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01502
Duration: 01/01/2017-30/09/2021

Marti MJ. **The Parkinson's Progression Markers Initiative (PPMI).**
Sponsored by: Michael J. Fox Foundation for Parkinson. INT_MJFF_041396
Duration: 06/11/2013-31/12/2023

Martí MJ. **Fox Trial Finder Spain.**
Sponsored by: Michael J. Fox Foundation for Parkinson. INT_MJFF_2018
Duration: 01/01/2019-30/06/2021

Martí MJ**. Collection, cryopreservation and shipment of PBMC from G2019S MC, NMCs, Controls and iPD subjects.**
Sponsored by: Michael J. Fox Foundation for Parkinson. INT_MJFF_2020_StaffD
Duration: 24/08/2020-23/08/2022

Martí MJ. **CSF RT-QuIC alpha-synuclein amplification in LRRK2-Parkinsons disease.**
Sponsored by: Michael J. Fox Foundation for Parkinson. INT_MJFF_UPDB_spg_20
Duration: 15/10/2020-14/10/2021

Marti MJ. **The Parkinson's Progression Markers Initiative (PPMI 2.0).**
Sponsored by: Michael J. Fox Foundation for Parkinson. INT_MJFF_041396
Duration: 01/01/2020-31/12/2033

DOCTORAL THESES

Tolosa E, Marti MJ. **Estudio de los síntomas no motores en la enfermedad de Parkinson y en su fase prodrómica.**
PhD student: Mª del Claustre Pont Sunyer

Marti MJ, Compta Y. **Predicción de demencia en la enfermedad de Parkinson mediante biomarcadores en líquido cefalorraquídeo y de neuroimagen estructural y molecular.**
PhD student: Maria Teresa Buongiorno

4.16 Molecular neuropharmacology

LOCATION
IIBB-CSIC labs

KEYWORDS
1. **Neurodegeneration**
2. **Neuroinflammation**

RELATED DISEASES
1. **Multiple sclerosis**
2. **Experimental autoimmune encephalomyelitis**
3. **Huntington's disease**

GROUP INVOLVED IN
CIBERNED
AGAUR_SGR717: 00717



GROUP LEADER
Guadalupe Mengod (IIBB-CSIC)
T. 93 363 83 23
guadalupe.mengod@iibb.csic.es

RESEARCHERS
Roser Cortés (IIBB-CSIC)
Mª Teresa Vilaró (IIBB-CSIC)

TECHNICIANS
Susana Muñoz (CIBER)

PROBLEM

Multiple sclerosis is a degenerative disease of the central nervous system that mainly affects young adults, especially women causing significant health burdens, both individually and in the family and community.

It is a chronic inflammatory disease characterized by damage to the axons (the branches of neurons) and a loss of myelin from neurons in the brain and spinal cord. This occurs as a result of infiltration by white blood cells (lymphocytes and macrophages) and results in the loss of neurological functions.

To find new therapies, researchers must understand how this inflammation works.

APPROACH

The group focuses its work on the analysis of phosphodiesterases, enzymes involved in neuroinflammation.

We use cell lines and primary cultures of macrophages, as well as a multiple sclerosis model in mice to find new therapeutic targets to treat this disease.

Greater knowledge of the metabolic pathways involved and their alterations will help us identify new drugs capable of modifying the disease's progression.

IMPACT

The group has seen that some phosphodiesterases (involved in neuroinflammation are expressed differently according to the sex of the animals.

We observed a significant reduction of clinical symptoms when mice with experimental autoimmune encephalomyelitis are treated chronically with a phosphodiesterase 7 inhibitor, specific to the cAMP.

In the spinal cord of these treated mice changes in the messenger RNA levels of some phosphodiesterases were observed, suggesting a potential treatment for this disease.

RESEARCH LINES

The molecular neuropharmacology group studies the involvement of the cAMP cascade in the polarization of microglia and macrophages toward anti- or pro-inflammatory phenotypes both in cell culture -cell lines and primary cultures- and in the CNS of EAE (experimental autoimmune encephalomyelitis) mice, a multiple sclerosis animal model.

We are also studying, in a collaborative CIBERNED project, the interaction of GRP78 (Glucose Regulated Protein-78) and the cannabinoid receptor CB1R as a new regulatory mechanism for the neuroprotective activity of cannabinoids, in the control mouse brain and in a Huntington's disease mouse mouse model.

PUBLICATIONS

Review / I.F.: 4.717

1. Gatta V; Mengod G; Reale M; Tata AM. **Possible Correlation between Cholinergic System Alterations and Neuro/Inflammation in Multiple Sclerosis.** *Biomedicines.* 8(6):153. I.F.: 4.717

GRANTS FOR RESEARCH IN PROGRESS

Vilaró MT. **Modulación de circuitos cortico-mesencefálicos y cortico-límbicos por nuevas terapias antidepresivas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00287
Duration: 01/01/2017-30/06/2020

4.17 Imaging of mood - and anxiety - related disorders (IMARD)

LOCATION
CEK building, floor -1

KEYWORDS
1. **Brain imaging**
2. **Machine learning**
3. **Mental health**
4. **Meta-analysis**
5. **Personalized medicine**
6. **Prevention**

RELATED DISEASES
1. **Anxiety disorders**
2. **Bipolar disorders**
3. **Depression**
4. **Obsessive-compulsive disorder**
5. **Psychosis**

GROUP INVOLVED IN
CIBERSAM
ENIGMA

AWARDS
Top 1% most cited researcher globally
Institution: Clarivate Analytics
Awardee/s: Joaquim Raduà

Original publications

TOTAL	25
IF	118,80
Mean IF	4,75
Q1	68%
D1	40%
MA	16%



GROUP LEADER
Joaquim Raduà (IDIBAPS)
T. 93 227 54 00 (Ext.: 3407)
radua@clinic.cat

RESEARCHERS
Miquel Àngel Fullana (HCB)

PRE-DOCTORAL RESEARCHERS
Anton Albajes-Eizagirre (IDIBAPS)
Lydia Fortea (IDIBAPS)
Aleix Solanes (FCRB)

PROBLEM

Mood and anxiety disorders are among the leading causes of disability. Approximately one out of four people will suffer from one of these disorders during their lifetime. And, unfortunately, the treatments available today only help half of sufferers, and it is often necessary to resort to trial and error to find the right treatment.

We need reliable, objective, valid indicators that allow us to predict from the outset the body's response to a treatment. Only by doing this will we be able to recommend the right treatment to each patient.

APPROACH

The group's research has two goals: to identify the changes in the brain involved in mood and anxiety disorders, and to determine the brain mechanisms that predict who will respond better or worse to different treatments. To achieve these goals, the group uses different neuroimaging techniques (such as magnetic resonance imaging of the brain), which are often combined with artificial-intelligence techniques.

IMPACT

The group has published many studies on the brain changes observed in different mood and anxiety disorders, as well as in other mental health disorders (such as psychotic disorders).

It has also developed clinical tools that could potentially help clinicians to make more accurate predictions regarding the course of patients with mental health disorders, thanks to the information obtained from magnetic resonance imaging.

RESEARCH LINES

- Development of neuroimaging-based diagnostic and treatment prediction tools.

- Evidence-based syntheses in mental health.

- Neural correlates of mood- and anxiety-related disorders.

PUBLICATIONS

Originals / I.F.: 118.802

1. Han LKM, Dinga R, Hahn T, Ching CRK, Eyler LT, Aftanas L, Aghajani M, Aleman A, Baune BT, Berger K, Brak I, Filho GB, Carballedo A, Connolly CG, Couvy-Duchesne B, Cullen KR, Dannlowski U, Davey CG, Dima D, Duran FLS, Enneking V, Filimonova E, Frenzel S, Frodl T, Fu CHY, Godlewska BR, Gotlib IH, Grabe HJ, Groenewold NA, Grotegerd D, Gruber O, Hall GB, Harrison BJ, Hatton SN, Hermesdorf M, Hickie IB, Ho TC, Hosten N, Jansen A, Kähler C, Kircher T, Klimes-Dougan B, Krämer B, Krug A, Lagopoulos J, Leenings R, MacMaster FP, MacQueen G, McIntosh A, McLellan Q, McMahon KL, Medland SE, Mueller BA, Mwangi B, Osipov E, Portella MJ, Pozzi E, Reneman L, Repple J, Rosa PGP, Sacchet MD, Sämann PG, Schnell K, Schrantee A, Simulionyte E, Soares JC, Sommer J, Stein DJ, Steinsträter O, Strike LT, Thomopoulos SI, van Tol MJ, Veer IM, Vermeiren RRJM, Walter H, van der Wee NJA, van der Werff SJA, Whalley H, Winter NR, Wittfeld K, Wright MJ, Wu MJ, Völzke H, Yang TT, Zannias V, de Zubicaray GI, Zunta-Soares GB, Abé C, Alda M, Andreassen OA, Bøen E, Bonnin CM, Canales-Rodriguez EJ, Cannon D, Caseras X,

Chaim-Avancini TM, Elvsåshagen T, Favre P, Foley SF, Fullerton JM, Goikolea JM, Haarman BCM, Hajek T, Henry C, Houenou J, Howells FM, Ingvar M, Kuplicki R, Lafer B, Landén M, Machado-Vieira R, Malt UF, McDonald C, Mitchell PB, Nabulsi L, Otaduy MCG, Overs BJ, Polosan M, Pomarol-Clotet E, Radua J, Rive MM, Roberts G, Ruhe HG, Salvador R, Sarró S, Satterthwaite TD, Savitz J, Schene AH, Schofield PR, Serpa MH, Sim K, Soeiro-de-Souza MG, Sutherland AN, Temmingh HS, Timmons GM, Uhlmann A, Vieta E, Wolf DH, Zanetti MV, Jahanshad N, Thompson PM, Veltman DJ, Penninx BWJH, Marquand AF, Cole JH, Schmaal L. **Brain aging in major depressive disorder: results from the ENIGMA major depressive disorder working group.** *Molecular Psychiatry.* I.F.: 12.384

2. Lee KH; Seong HJ; Kim G; Jeong GH; Kim JY; Park H; Jung E; Kronbichler A; Eisenhut M; Stubbs B; Solmi M; Koyanagi A; Hong SH; Dragioti E; de Rezende LFM; Jacob L; Keum NN; van der Vliet HJ; Cho E; Veronese N; Grosso G; Ogino S; Song M; Radua J; Jung SJ; Thompson T; Jackson SE; Smith L; Yang L; Oh H; Choi EK; Shin JI; Giovannucci EL; Gamerith G. **Consumption of Fish and ω-3 Fatty Acids and Cancer Risk: An Umbrella Review of Meta-Analyses of Observational Studies.** *Advances in Nutrition.* 11(5):1134-1149. I.F.: 7.265

3. Li Q; Zhao Y; Chen Z; Long J; Dai J; Huang X; Lui S; Radua J; Vieta E; Kemp GJ; Sweeney JA; Li F; Gong Q. **Meta-analysis of cortical thickness abnormalities in medication-free patients with major depressive disorder.** *Neuropsychopharmacology.* 45(4):703-712. I.F.: 6.751

4. Radua J, Vieta E, Shinohara R, Kochunov P, Quidé Y, Green MJ, Weickert CS, Weickert T, Bruggemann J, Kircher T, Nenadić I, Cairns MJ, Seal M, Schall U, Henskens F, Fullerton JM, Mowry B, Pantelis C, Lenroot R, Cropley V, Loughland C, Scott R, Wolf D, Satterthwaite TD, Tan Y, Sim K, Piras F, Spalletta G, Banaj N, Pomarol-Clotet E, Solanes A, Albajes-Eizagirre A, Canales-Rodríguez EJ, Sarro S, Di Giorgio A, Bertolino A, Stäblein M, Oertel V, Knöchel C, Borgwardt S, du Plessis S, Yun JY, Kwon JS, Dannlowski U, Hahn T, Grotegerd D, Alloza C, Arango C, Janssen J, Díaz-Caneja C, Jiang W, Calhoun V, Ehrlich S, Yang K, Cascella NG, Takayanagi Y, Sawa A, Tomyshev A, Lebedeva I, Kaleda V, Kirschner M, Hoschl C, Tomecek D, Skoch A, van Amelsvoort T, Bakker G, James A, Preda A, Weideman A, Stein DJ, Howells F, Uhlmann A, Temmingh H, López-Jaramillo C, Díaz-Zuluaga A, Fortea L, Martinez-Heras E, Solana E, Llufriu S, Jahanshad N, Thompson P, Turner J, van Erp T, ENIGMA Consortium collaborators. **Increased power by harmonizing structural MRI site differences with the ComBat batch adjustment method in ENIGMA.** *Neuroimage.* 218:116956. I.F.: 5.902

5. Savage HS; Davey CG; Fullana MA; Harrison BJ. **Clarifying the neural substrates of threat and safety reversal learning in humans.** *Neuroimage.* 207:116427. I.F.: 5.902

6. Solé B, Bonnín CM, Radua J, Montejo L, Hogg B, Jimenez E, Reinares M, Valls E, Varo C, Pacchiarotti I, Valentí M, Garriga M, Torres I, Martínez-Arán A, Vieta E, Torrent C. **Long-term outcome predictors after functional remediation in patients with bipolar disorder.** *Psychological Medicine.* :1-9. I.F.: 5.811

7. Suarez-Jimenez B, Albajes-Eizagirre A, Lazarov A, Zhu X, Harrison BJ, Radua J, Neria Y, Fullana MA. **Neural signatures of conditioning, extinction learning, and extinction recall in posttraumatic stress disorder: a meta-analysis of functional magnetic resonance imaging studies.** *Psychological Medicine.* 50(9):1442-1451. I.F.: 5.811

8. Wong TY, Radua J, Pomarol-Clotet E, Salvador R, Albajes-Eizagirre A, Solanes A, Canales-Rodriguez EJ, Guerrero-Pedraza A, Sarro S, Kircher T, Nenadic I, Krug A, Grotegerd D, Dannlowski U, Borgwardt S, Riecher-Rössler A, Schmidt A, Andreou C, Huber CG, Turner J, Calhoun V, Jiang W, Clark S, Walton E, Spalletta G, Banaj N, Piras F, Ciullo V, Vecchio D, Lebedeva I, Tomyshev AS, Kaleda V, Klushnik T, Filho GB, Zanetti MV, Serpa MH, Penteado Rosa PG, Hashimoto R, Fukunaga M, Richter A, Krämer B, Gruber O, Voineskos AN, Dickie EW, Tomecek D, Skoch A, Spaniel F, Hoschl C, Bertolino A, Bonvino A, Di Giorgio A, Holleran L, Ciufolini S, Marques TR, Dazzan P, Murray R, Lamsma J, Cahn W, van Haren N, Díaz-Zuluaga AM, Pineda-Zapata JA, Vargas C, López-Jaramillo C, van Erp TGM, Gur RC, Nickl-Jockschat T.. **An overlapping pattern of cerebral cortical thinning is associated with both positive symptoms and aggression in schizophrenia via the ENIGMA consortium.** *Psychological Medicine.* 50(12):2034-2045. I.F.: 5.811

9. Suñol M, Martínez-Zalacaín I, Picó-Pérez M, López-Solà C, Real E, Fullana MÀ, Pujol J, Cardoner N, Menchón JM, Alonso P, Soriano-Mas C. **Differential patterns of brain activation between hoarding disorder and obsessive-compulsive disorder during executive performance.** *Psychological Medicine.* 50(4):666-673 I.F.: 5.811

10. Fullana MA, Tortella-Feliu M, Fernández de la Cruz L, Chamorro J, Pérez-Vigil A, Ioannidis JPA, Solanes A, Guardiola M, Almodóvar C, Miranda-Olivos R, Ramella-Cravaro V, Vilar A, Reichenberg A, Mataix-Cols D, Vieta E, Fusar-Poli P, Fatjó-Vilas M, Radua J. **Risk and protective factors for anxiety and obsessive-compulsive disorders: an umbrella review of systematic reviews and meta-analyses.** *Psychological Medicine.* 50(8):1300-1315. I.F.: 5.811

11. Wierenga LM, Doucet GE, Dima D, Agartz I, Aghajani M, Akudjedu TN, Albajes-Eizagirre A, Alnaes D, Alpert KI, Andreassen OA, Anticevic A, Asherson P, Banaschewski T, Bargallo N, Baumeister S, Baur-Streubel R, Bertolino A, Bonvino A, Boomsma DI, Borgwardt S, Bourque J, den Braber A, Brandeis D, Breier A, Brodaty H, Brouwer RM, Buitelaar JK, Busatto GF, Calhoun VD, Canales-Rodríguez EJ, Cannon DM, Caseras X, Castellanos FX, Chaim-Avancini TM, Ching CR, Clark VP, Conrod PJ, Conzelmann A, Crivello F, Davey CG, Dickie EW, Ehrlich S, Van't Ent D, Fisher SE, Fouche JP, Franke B, Fuentes-Claramonte P, de Geus EJ, Di Giorgio A, Glahn DC, Gotlib IH, Grabe HJ, Gruber O, Gruner P, Gur RE, Gur RC, Gurholt TP, de Haan L, Haatveit B, Harrison BJ, Hartman CA, Hatton SN, Heslenfeld DJ, van den Heuvel OA, Hickie IB, Hoekstra PJ, Hohmann S, Holmes AJ, Hoogman M, Hosten N, Howells FM, Hulshoff Pol HE, Huyser C, Jahanshad N, James AC, Jiang J, Jönsson EG, Joska JA, Kalnin AJ,, Klein M, Koenders L, Kolskår KK, Krämer B, Kuntsi J, Lagopoulos J, Lazaro L, Lebedeva IS, Lee PH, Lochner C, Machielsen MW, Maingault S, Martin NG, Martínez-Zalacaín I, Mataix-Cols D, Mazoyer B, McDonald BC, McDonald C, McIntosh AM, McMahon KL, McPhilemy G, van der Meer D, Menchón JM, Naaijen J, Nyberg L, Oosterlaan J, Paloyelis Y, Pauli P, Pergola G, Pomarol-Clotet E, Portella MJ, Radua J, Reif A, Richard G, Roffman JL, Rosa PG, Sacchet MD, Sachdev PS, Salvador R, Sarró S, Satterthwaite TD, Saykin AJ, Serpa MH, Sim K, Simmons A, Smoller JW, Sommer IE,

Soriano-Mas C, Stein DJ, Strike LT, Szeszko PR, Temmingh HS, Thomopoulos SI, Tomyshev AS, Trollor JN, Uhlmann A, Veer IM, Veltman DJ, Voineskos A, Völzke H, Walter H, Wang L, Wang Y, Weber B, Wen W, West JD, Westlye LT, Whalley HC, Williams SC, Wittfeld K, Wolf DH, Wright MJ, Yoncheva YN, Zanetti MV, Ziegler GC, de Zubicaray GI, Thompson PM, Crone EA, Frangou S, Tamnes CK Karolinska Schizophrenia Project (KaSP) Consortium. **Greater male than female variability in regional brain structure across the lifespan.** *Human Brain Mapping.* I.F.: 4.421

12. De Zwarte SMC; Brouwer RM; Agartz I; Alda M; Alonso-Lana S; Bearden CE; Bertolino A; Bonvino A; Bramon E; Buimer EEL; Cahn W; Canales-Rodríguez EJ; Cannon DM; Cannon TD; Caseras X; Castro-Fornieles J; Chen Q; Chung Y; De la Serna E; Del Mar Bonnin C; Demro C; Di Giorgio A; Doucet GE; Eker MC; Erk S; Fatjó-Vilas M; Fears SC; Foley SF; Frangou S; Fullerton JM; Glahn DC; Goghari VM; Goikolea JM; Goldman AL; Gonul AS; Gruber O; Hajek T; Hawkins EL; Heinz A; Hidiroglu Ongun C; Hillegers MHJ; Houenou J; Hulshoff Pol HE; Hultman CM; Ingvar M; Johansson V; Jönsson EG; Kane F; Kempton MJ; Koenis MMG; Kopecek M; Krämer B; Lawrie SM; Lenroot RK; Marcelis M; Mattay VS; McDonald C; Meyer-Lindenberg A; Michielse S; Mitchell PB; Moreno D; Murray RM; Mwangi B; Nabulsi L; Newport J; Olman CA; van Os J; Overs BJ; Ozerdem A; Pergola G; Picchioni MM; Piguet C; Pomarol-Clotet E; Radua J; Ramsay IS; Richter A; Roberts G; Salvador R; Saricicek Aydogan A; Sarró S; Schofield PR; Simsek EM; Simsek F; Soares JC; Sponheim SR; Sugranyes G; Toulopoulou T; Tronchin G; Vieta E; Walter H; Weinberger DR; Whalley HC; Wu MJ; Yalin N; Andreassen OA; Ching CRK; Thomopoulos SI; van Erp TGM; Jahanshad N; Thompson PM; Kahn RS; van Haren NEM. **Intelligence, educational attainment, and brain structure in those at familial high-risk for schizophrenia or bipolar disorder.** *Human Brain Mapping.* I.F.: 4.421

13. Haukvik UK, Gurholt TP, Nerland S, Elvsåshagen T, Akudjedu TN, Alda M, Alnaes D, Alonso-Lana S, Bauer J, Baune BT, Benedetti F, Berk M, Bettella F, Bøen E, Bonnín CM, Brambilla P, Canales-Rodríguez EJ, Cannon DM, Caseras X, Dandash O, Dannlowski U, Delvecchio G, Díaz-Zuluaga AM, van Erp TGM, Fatjó-Vilas M, Foley SF, Förster K, Fullerton JM, Goikolea JM, Grotegerd D, Gruber O, Haarman BCM, Haatveit B, Hajek T, Hallahan B, Harris M, Hawkins EL, Howells FM, Hülsmann C, Jahanshad N, Jørgensen KN, Kircher T, Krämer B, Krug A, Kuplicki R, Lagerberg TV, Lancaster TM, Lenroot RK, Lonning V, López-Jaramillo C, Malt UF, McDonald C, McIntosh AM, McPhilemy G, van der Meer D, Melle I, Melloni EMT, Mitchell PB, Nabulsi L, Nenadić I, Oertel V, Oldani L, Opel N, Otaduy MCG, Overs BJ, Pineda-Zapata JA, Pomarol-Clotet E, Radua J, Rauer L, Redlich R, Repple J, Rive MM, Roberts G, Ruhe HG, Salminen LE, Salvador R, Sarró S, Savitz J, Schene AH, Sim K, Soeiro-de-Souza MG, Stäblein M, Stein DJ, Stein F, Tamnes CK, Temmingh HS, Thomopoulos SI, Veltman DJ, Vieta E, Waltemate L, Westlye LT, Whalley HC, Sämann PG, Thompson PM, Ching CRK, Andreassen OA, Agartz I, ENIGMA Bipolar Disorder Working Group. **In vivo hippocampal subfield volumes in bipolar disorder-A mega-analysis from The Enhancing Neuro Imaging Genetics through Meta-Analysis Bipolar Disorder Working Group.** *Human Brain Mapping.* I.F.: 4.421

14. Martínez-Heras E; Solana E; Prados F; Andorrà M; Solanes A; López-Soley E; Montejo C; Pulido-Valdeolivas I; Alba-Arbalat S; Sola-Valls N; Sepúlveda M; Blanco Y; Saiz A; Radua J; Llufriu S. **Characterization of multiple sclerosis lesions with distinct clinical correlates through quantitative diffusion MRI.** *Neuroimage-Clinical.* 28:102411. I.F.: 4.350

15. Oliver D; Spada G; Englund A; Chesney E; Radua J; Reichenberg A; Uher R; McGuire P; Fusar-Poli P. **Real-world digital implementation of the Psychosis Polyrisk Score (PPS): A pilot feasibility study.** *Schizophrenia Research.* 226:176-183. I.F.: 3.759

16. Lee, Jinhee; Son, Min Ji; Son, Chei Yun; Jeong, Gwang Hun; Lee, Keum Hwa; Lee, Kwang Seob; Ko, Younhee; Kim, Jong Yeob; Lee, Jun Young; Radua, Joaquim; Eisenhut, Michael; Gressier, Florence; Koyanagi, Ai; Stubbs, Brendon; Solmi, Marco; Rais, Theodor B; Kronbichler, Andreas; Dragioti, Elena; Vasconcelos, Daniel Fernando Pereira; Silva, Felipe Rodolfo Pereira da; Tizaoui, Kalthoum; Brunoni, Andre Russowsky; Carvalho, Andre F; Cargnin, Sarah; Terrazzino, Salvatore; Stickley, Andrew; Smith, Lee; Thompson, Trevor; Shin, Jae Il; Fusar-Poli, Paolo. **Genetic Variation and Autism: A Field Synopsis and Systematic Meta-Analysis.** *Brain Sciences.* 10(10):692. I.F.: 3.332

17. Blanco L, Sió A, Hogg B, Esteve R, Radua J, Solanes A, Gardoki-Souto I, Sauras R, Farré A, Castillo C, Valiente-Gómez A, Pérez V, Torrens M, Amann BL, Moreno-Alcázar A. **Traumatic Events in Dual Disorders: Prevalence and Clinical Characteristics.** *Journal of Clinical Medicine.* 9(8):2553. I.F.: 3.303

18. Lee, Keum Hwa; Yoon, Sojung; Jeong, Gwang Hun; Kim, Jong Yeob; Han, Young Joo; Hong, Sung Hwi; Ryu, Seohyun; Kim, Jae Seok; Lee, Jun Young; Yang, Jae Won; Lee, Jinhee; Solmi, Marco; Koyanagi, Ai; Dragioti, Elena; Jacob, Louis; Radua, Joaquim; Smith, Lee; Oh, Hans; Tizaoui, Kalthoum; Cargnin, Sarah; Terrazzino, Salvatore; Abou Ghayda, Ramy; Kronbichler, Andreas; Shin, Jae Il. **Efficacy of Corticosteroids in Patients with SARS, MERS and COVID-19: A Systematic Review and Meta-Analysis.** *Journal of Clinical Medicine.* 9(8):2392. I.F.: 3.303

19. Giménez M; Cano M; Martínez-Zalacaín I; Real E; Alonso P; Segalàs C; Munuera J; Kegeles LS; Weinstein JJ; Xu X; Menchón JM; Cardoner N; Soriano-Mas C; Fullana MA. **Is glutamate associated with fear extinction and cognitive behavior therapy outcome in OCD? A pilot study.** *European Archives of Psychiatry and Clinical Neuroscience.* 270(8):1003-1014. I.F.: 3.288

20. Ghayda RA; Lee KH; Han YJ; Ryu S; Hong SH; Yoon S; Jeong GH; Lee J; Lee JY; Yang JW; Effenberger M; Eisenhut M; Kronbichler A; Solmi M; Li H; Jacob L; Koyanagi A; Radua J; Shin JI; Smith L. **Estimation of global case fatality rate of coronavirus disease 2019 (COVID-19) using meta-analyses: Comparison between calendar date and days since the outbreak of the first confirmed case.** *International Journal of Infectious Diseases.* 100:302-308. I.F.: 3.202

21. Garcia-Olivé I; Sintes H; Radua J; Abad Capa J; Rosell A. **D-dimer in patients infected with COVID-19 and suspected pulmonary embolism.** *Respiratory Medicine.* 169:106023. I.F.: 3.095

22. Savage HS; Davey CG; Fullana MA; Harrison BJ. **Threat and safety reversal learning in social anxiety disorder - an fMRI study.** *Journal of Anxiety Disorders.* 76:102321. I.F.: 3.079

23. Lopez-Soley E, Solana E, Martínez-Heras E, Andorra M, Radua J, Prats-Uribe A, Montejo C, Sola-Valls N, Sepulveda M, Pulido-Valdeolivas I, Blanco Y, Martinez-Lapiscina EH, Saiz A, Llufriu S. **Impact of Cognitive Reserve and Structural Connectivity on Cognitive Performance in Multiple Sclerosis.** *Frontiers in Neurology.* 11:581700. I.F.: 2.889

24. Valiente-Gómez A, Pujol N, Moreno-Alcázar A, Radua J, Monteagudo-Gimeno E, Gardoki-Souto I, Hogg B, Álvarez MJ, Safont G, Lupo W, Pérez V, Amann BL, FEP-EMDR Research Group. **A Multicenter Phase II RCT to Compare the Effectiveness of EMDR Versus TAU in Patients With a First-Episode Psychosis and Psychological Trauma: A Protocol Design.** *Frontiers in Psychiatry.* 10:1023. I.F.: 2.849

25. Beneria A; Arnedo M; Contreras S; Pérez-Carrasco M; Garcia-Ruiz I; Rodríguez-Carballeira M; Raduà J; Rius JB. **Impact of simulation-based teamwork training on COVID-19 distress in healthcare professionals.** *Bmc Medical Education.* 20(1):515. I.F.: 1.831

Review / I.F.: 84.644

1. Kim JH; Kim JY; Lee J; Jeong GH; Lee E; Lee S; Lee KH; Kronbichler A; Stubbs B; Solmi M; Koyanagi A; Hong SH; Dragioti E; Jacob L; Brunoni AR; Carvalho AF; Radua J; Thompson T; Smith L; Oh H; Yang L; Grabovac I; Schuch F; Fornaro M; Stickley A; Rais TB; de Pablo GS; Shin JI; Fusar-Poli P. **Environmental risk factors, protective factors, and peripheral biomarkers for ADHD: an umbrella review.** *Lancet Psychiatry.* 7(11):955-970. I.F.: 16.209

2. Davies C; Segre G; Estradé A; Radua J; De Micheli A; Provenzani U; Oliver D; Salazar de Pablo G; Ramella-Cravaro V; Besozzi M; Dazzan P; Miele M; Caputo G; Spallarossa C; Crossland G; Ilyas A; Spada G; Politi P; Murray RM; McGuire P; Fusar-Poli P. **Prenatal and perinatal risk and protective factors for psychosis: a systematic review and meta-analysis.** *Lancet Psychiatry.* 7(5):399-410. I.F.: 16.209

3. Fullana MA, Abramovitch A, Via E, López-Sola C, Goldberg X, Reina N, Fortea L, Solanes A, Buckley MJ, Ramella-Cravaro V, Carvalho AF, Tortella-Feliu M, Vieta E, Soriano-Mas C, Lázaro L, Stein DJ, Fernández de la Cruz L, Mataix-Cols D, Radua J. **Diagnostic biomarkers for obsessive-compulsive disorder: A reasonable quest or ignis fatuus?** *Neuroscience and Biobehavioral Reviews.* 118:504-513. I.F.: 8.329

4. Picó-Pérez M; Moreira PS; de Melo Ferreira V; Radua J; Mataix-Cols D; Sousa N; Soriano-Mas C; Morgado P. **Modality-specific overlaps in brain structure and function in obsessive-compulsive disorder: Multimodal meta-analysis of case-control MRI studies.** *Neuroscience and Biobehavioral Reviews.* 112:83-94. I.F.: 8.329

5. Dugré JR; Radua J; Carignan-Allard M; Dumais A; Rubia K; Potvin S. **Neurofunctional abnormalities in antisocial spectrum: A meta-analysis of fMRI studies on Five distinct neurocognitive research domains.** *Neuroscience and Biobehavioral Reviews.* 119:168-183. I.F.: 8.329

6. Lim L; Howells H; Radua J; Rubia K. **Aberrant structural connectivity in childhood maltreatment: A meta-analysis.** *Neuroscience and Biobehavioral Reviews.* 116:406-414. I.F.: 8.329

7. Lukito S; Norman L; Carlisi C; Radua J; Hart H; Simonoff E; Rubia K. **Comparative meta-analyses of brain structural and functional abnormalities during cognitive control in attention-deficit/hyperactivity disorder and autism spectrum disorder.** *Psychological Medicine.* 50(6):894-919. I.F.: 5.811

8. Fullana M; Dunsmoor J; Schruers K; Savage H; Bach D; Harrison B. **Human fear conditioning: From neuroscience to the clinic.** *Behaviour Research and Therapy.* 124:103528. I.F.: 4.496

9. Ching CRK; Hibar DP; Gurholt TP; Nunes A; Thomopoulos SI; Abé C; Agartz I; Brouwer RM; Cannon DM; de Zwarte SMC; Eyler LT; Favre P; Hajek T; Haukvik UK; Houenou J; Landén M; Lett TA; McDonald C; Nabulsi L; Patel Y; Pauling ME; Paus T; Radua J; Soeiro-de-Souza MG; Tronchin G; van Haren NEM; Vieta E; Walter H; Zeng LL; Alda M; Almeida J; Alnaes D; Alonso-Lana S; Altimus C; Bauer M; Baune BT; Bearden CE; Bellani M; Benedetti F; Berk M; Bilderbeck AC; Blumberg HP; Bøen E; Bollettini I; Del Mar Bonnin C; Brambilla P; Canales-Rodríguez EJ; Caseras X; Dandash O; Dannlowski U; Delvecchio G; Díaz-Zuluaga AM; Dima D; Duchesnay É; Elvsåshagen T; Fears SC; Frangou S; Fullerton JM; Glahn DC; Goikolea JM; Green MJ; Grotegerd D; Gruber O; Haarman BCM; Henry C; Howells FM; Ives-Deliperi V; Jansen A; Kircher TTJ; Knöchel C; Kramer B; Lafer B; López-Jaramillo C; Machado-Vieira R; MacIntosh BJ; Melloni EMT; Mitchell PB; Nenadic I; Nery F; Nugent AC; Oertel V; Ophoff RA; Ota M; Overs BJ; Pham DL; Phillips ML; Pineda-Zapata JA; Poletti S; Polosan M; Pomarol-Clotet E; Pouchon A; Quidé Y; Rive MM; Roberts G; Ruhe HG; Salvador R; Sarró S; Satterthwaite TD; Schene AH; Sim K; Soares JC; Stäblein M; Stein DJ; Tamnes CK; Thomaidis GV; Upegui CV; Veltman DJ; Wessa M; Westlye LT; Whalley HC; Wolf DH; Wu MJ; Yatham LN; Zarate CA; Thompson PM; Andreassen OA; ENIGMA Bipolar Disorder Working Group. **What we learn about bipolar disorder from large-scale neuroimaging: Findings and future directions from the ENIGMA Bipolar Disorder Working Group.** *Human Brain Mapping.* I.F.: 4.421

10. Soldevila-Matías P; Albajes-Eizagirre A; Radua J; García-Martí G; Rubio JM; Tordesillas-Gutierrez D; Fuentes-Durá I; Solanes A; Fortea L; Oliver D; Sanjuán J. **Precuneus and insular hypoactivation during cognitive processing in first-episode psychosis: Systematic review and meta-analysis of fMRI studies.** *Revista de Psiquiatria y Salud Mental.* S1888-9891(20):30100-2. I.F.: 2.630

11. Sheng LQ; Zhao PW; Ma HR; Radua J; Yi ZQ; Shi YY; Zhong JG; Dai ZY; Pan PL. **Cortical thickness in Parkinson disease: A coordinate-based meta-analysis.** *Medicine.* 99(31):e21403. I.F.: 1.552

Letters / I.F.: 6.741

1. Fullana MA; Hidalgo-Mazzei D; Vieta E; Radua J. **Coping behaviors associated with decreased anxiety and depressive symptoms during the COVID-19 pandemic and lockdown.** *Journal of Affective Disorders.* 275:80-81. I.F.: 3.892

2. Fusar-Poli, Paolo; Radua, Joaquim; McKenna, Peter J; Laws, Keith; Davies, Cathy; Jauhar, Sameer. **Methodological Biases in CBT Trial-Commentary: Modular Cognitive-Behavioral Therapy for**

Affective Symptoms in Young Individuals at Ultra-High Risk of First Episode of Psychosis: Randomized Controlled Trial. *Frontiers in Psychiatry*. 11:394. I.F.: 2.849

Consortium Publications / I.F.: 7.958

1. Bergé D, Mané A, Lesh TA, Bioque M, Barcones F, Gonzalez-Pinto AM, Parellada M, Vieta E, Castro-Fornieles J, Rodriguez-Jimenez R, García-Portilla MP, Usall J, Carter CS, Cabrera B, Bernardo M, Janssen J, PEPs group. **Elevated Extracellular Free-Water in a Multicentric First-Episode Psychosis Sample, Decrease During the First 2 Years of Illness.** *Schizophrenia Bulletin*. 46(4):846-856. I.F.: 7.958

GRANTS FOR RESEARCH IN PROGRESS

Fullana MA. **El modelo de incertidumbre-anticipación: uso de la neuroimagen funcional para predecir la trayectoria de los síntomas de ansiedad y caracterizar las alteraciones cerebrales relacionadas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00144
Duration: 14/12/2017-30/06/2021

Fullana MA. **Aprendizaje de estados en la corteza orbitofrontal: un estudio combinado de neuroimagen y psiquiatria computacional en el trastorno obsesivo-compulsivo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00272
Duration: 01/01/2020-31/12/2022

Fullana MA. **¿Por qué el/la niño/a no puede dejar de lavarse? Aprendizaje de hábitos en el TOC infantil.**
Sponsored by: Fundación Alicia Koplowitz. AKOPLOWITZ18_002
Duration: 01/11/2018-31/12/-

Raduà J. **Hacia biomarcadores robustos en salud mental: Creación de un atlas de los trastornos mentales basado en la resonancia magnética, y validación inicial de una herramienta asociada de ayuda diagnóstica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00394
Duration: 01/01/2020-31/12/2022

Raduà J. **Anxiety, depression and coping behaviors during the COVID-19 pandemic and lockdown.**
Sponsored by: AXA Research Fund. INT_AXA-COVID-19_1
Duration: 01/09/2020-31/08/2022

4.18 Alzheimer's disease and other cognitive disorders

LOCATION
CELLEX building, floor 3B
HCB building, E8P4

KEYWORDS
1. **Alzheimer disease**
2. **Degenerative neurological diseases**

RELATED DISEASES
1. **Alzheimer's disease**
2. **Frontotemporal dementia**
3. **Primary progressive aphasia**
4. **Dementia with lewy bodies**
5. **Prion diseases**

GROUP INVOLVED IN
AGAUR_SGR17: 01507

Original publications

TOTAL	22
IF	189,85
Mean IF	8,63
Q1	82%
D1	64%
MA	27%



GROUP LEADER
Raquel Sánchez-Valle (HCB)
T. 93 227 57 85
rsanchez@clinic.cat

RESEARCHERS
Mircea Balasa (HCB)
Beatriz Bosch (FCRB)
Albert Lladó (HCB)
Lorena Rami (IDIBAPS)

ASSISTANT RESEARCHERS
Anna Antonell (FCRB)

PRE-DOCTORAL RESEARCHERS
Sergi Borrego (HCB)
Jose Miguel Contador (HCB)
Núria Guillén (HCB)
Núria Montagut (HCB)
Agnès Pérez Millán (FCRB)
Oscar Ramos (IDIBAPS)
Adria Tort (FCRB)

TECHNICIANS
Nina Coll (IDIBAPS)
Jordi Juncà (FCRB)
Jaume Olives (FCRB)
Miguel Vergara (FCRB)

NURSING STAFF
Guadalupe Fernández Villullas (FCRB)
Yolanda González Romero (HCB-FCRB)

VISITING SCIENTISTS
Antonio Jesús Boza (Lund University, Sweden)

PROBLEM

Neurodegenerative dementias are one of the main causes of disability, dependency and death worldwide. Around 50 million people have dementia, and there are nearly 10 million new cases every year.

Alzheimer's disease is the most common neurodegenerative dementia, although there are many others, such as frontotemporal dementia, progressive aphasias, dementia with Lewy bodies, and prion diseases. The cause of these diseases in most patients are still unknown. An accurate diagnosis in the early phases of the disease is key for the optimal management of the disease.

APPROACH

The Alzheimer's disease and other cognitive disorders (ADCD) group is a multidisplinary team composed by neurologists, neuropsychologists, biologists, nurses, speech therapist, physicist and lab technicians.

The group works to better understand the causes of different forms of neurodegenerative dementias and to characterize the preclinical and early phases and the progression of these diseases with the general aim to establish an accurate early diagnosis and an accurate prognosis.

The group participates in international interventional clinical trials of modifying treatments for Alzheimer's disease, both sporadic and genetic forms of the disease and frontotemporal lobar degeneration .

IMPACT

In recent years, the group has analysed the usefulness of different diagnostic and prognostic biomarkers in Alzheimer's disease, frontotemporal dementia and dementia with Lewy bodies; characterized the initial phases of autosomal dominant Alzheimer's disease and genetic frotontemporal dementia; investigated new genetic causes and evaluated the impact of new diagnostic criteria in the clinical-neuropathological correlations.

The results have been presented in top-of their-field international conferences, and resulted in more than 100 scientific publications and several doctoral theses.

RESEARCH LINES

- Diagnostic and prognostic biomarkers of early-onset sporadic Alzheimer's disease.

- Healthy aging - Alzheimer's disease continuum.

- Neuropathology of neurodegenerative diseases.

- Rare neurodegenerative dementias: Frontotemporal lobar degeneration and prion diseases.

- Study of genetically determined dementias.

PUBLICATIONS

Originals / I.F.: 189.853

1. Moore KM, Nicholas J, Grossman M, McMillan CT, Irwin DJ, Massimo L, Van Deerlin VM, Warren JD, Fox NC, Rossor MN, Mead S, Bocchetta M, Boeve BF, Knopman DS, Graff-Radford NR, Forsberg LK, Rademakers R, Wszolek ZK, van Swieten JC, Jiskoot LC, Meeter LH, Dopper EG, Papma JM, Snowden JS, Saxon J, Jones M, Pickering-Brown S, Le Ber I, Camuzat A, Brice A, Caroppo P, Ghidoni R, Pievani M, Benussi L, Binetti G, Dickerson BC, Lucente D, Krivensky S, Graff C, Öijerstedt L, Fallström M, Thonberg H, Ghoshal N, Morris JC, Borroni B, Benussi A, Padovani A, Galimberti D, Scarpini E, Fumagalli GG, Mackenzie IR, Hsiung GR, Sengdy P, Boxer AL, Rosen H, Taylor JB, Synofzik M, Wilke C, Sulzer P, Hodges JR, Halliday G, Kwok J, Sanchez-Valle R, Lladó A, Borrego-Ecija S, Santana I, Almeida MR, Tábuas-Pereira M, Moreno F, Barandiaran M, Indakoetxea B, Levin J, Danek A, Rowe JB, Cope TE, Otto M, Anderl-Straub S, de Mendonça A, Maruta C, Masellis M, Black SE, Couratier P, Lautrette G, Huey ED, Sorbi S, Nacmias B, Laforce R, Tremblay ML, Vandenberghe R, Damme PV, Rogalski EJ, Weintraub S, Gerhard A, Onyike CU, Ducharme S, Papageorgiou SG, Ng ASL, Brodtmann A, Finger E, Guerreiro R, Bras J, Rohrer JD, FTD Prevention Initiative. **Age at symptom onset and death and disease duration in genetic frontotemporal dementia: an international retrospective cohort study.** *Lancet Neurol.* 19(2):145-156. I.F.: 30.039

2. Antonell A, Tort-Merino A, Ríos J, Balasa M, Borrego-Écija S, Auge JM, Muñoz-García C, Bosch B, Falgàs N, Rami L, Ramos-Campoy O, Blennow K, Zetterberg H, Molinuevo JL, Lladó A, Sánchez-Valle R. **Synaptic, axonal damage and inflammatory cerebrospinal fluid biomarkers in neurodegenerative dementias.** *Alzheimers & Dementia.* 16(2):262-272. I.F.: 17.127

3. Brosseron F, Kolbe CC, Santarelli F, Carvalho S, Antonell A, Castro-Gomez S, Tacik P, Namasivayam AA, Mangone G, Schneider R, Latz E, Wüllner U, Svenningsson P, Sánchez-Valle R, Molinuevo JL, Corvol JC, Heneka MT, AETIONOMY study group. **Multicenter Alzheimer's and Parkinson's disease immune biomarker verification study.** *Alzheimers & Dementia.* 16(2):292-304. I.F.: 17.127

4. Maximilian Buegler, Robbert Harms, Mircea Balasa, Irene B Meier, Themis Exarchos, Laura Rai, Rory Boyle, Adria Tort, Maha Kozori, Eutuxia Lazarou, Michaela Rampini, Carlo Cavaliere, Panagiotis Vlamos, Magda Tsolaki, Claudio Babiloni, Andrea Soricelli, Giovanni Frisoni, Raquel Sanchez-Valle, Robert Whelan, Emilio Merlo-Pich, Ioannis Tarnanas. **Digital biomarker-based individualized prognosis for people at risk of dementia.** *Alzheimers & Dementia.* 12(1):e12073. I.F.: 17.127

5. Landa J, Gaig C, Plagumà J, Saiz A, Antonell A, Sanchez-Valle R, Dalmau J, Graus F, Sabater L. **Effects of IgLON5 antibodies on neuronal cytoskeleton: a link between autoimmunity and neurodegeneration**. *Annals of Neurology.* 88(5):1023-1027. I.F.: 9.037

6. Le Blanc G, Jetté Pomerleau V, McCarthy J, Borroni B, van Swieten J, Galimberti D, Sanchez-Valle R, LaForce R, Moreno F, Synofzik M, Graff C, Masellis M, Tartaglia MC, Rowe JB, Vandenberghe R, Finger E, Tagliavini F, de Mendonça A, Santana I, Butler C, Gerhard A, Danek A, Levin J, Otto M, Frisoni G, Sorbi S, Rohrer JD, Ducharme S, Genetic Frontotemporal Dementia Initiative (GENFI). **Faster Cortical Thinning and Surface Area Loss in Presymptomatic and Symptomatic C9orf72 Repeat Expansion Adult Carriers.** *Annals of Neurology.* 88(1):113-122. I.F.: 9.037

7. Frontzek K; Carta M; Losa M; Epskamp M; Meisl G; Anane A; Brandel JP; Camenisch U; Castilla J; Haïk S; Knowles T; Lindner E; Lutterotti A; Minikel EV; Roiter I; Safar JG; Sanchez-Valle R; Žáková D; Hornemann S; Aguzzi A; THAUTAN-MC Study Group. **Autoantibodies against the prion protein in individuals with PRNP mutations.** *Neurology.* 95(14):e2028-e2037. I.F.: 8.770

8. Costa B, Manzoni C, Bernal-Quiros M, Kia DA, Aguilar M, Alvarez I, Alvarez V, Andreassen O, Anfossi M, Bagnoli S, Benussi L, Bernardi L, Binetti G, Blackburn D, Boada M, Borroni B, Bowns L, Bråthen G, Bruni AC, Chiang HH, Clarimon J, Colville S, Conidi ME, Cope TE, Cruchaga C, Cupidi C, Di Battista ME, Diehl-Schmid J, Diez-Fairen M, Dols-Icardo O, Durante E, Flisar D, Frangipane F, Galimberti D, Gallo M, Gallucci M, Ghidoni R, Graff C, Grafman JH, Grossman M, Hardy J, Hernández I, Holloway GJT, Huey ED, Illán-Gala I, Karydas A, Khoshnood B, Kramberger MG, Kristiansen M, Lewis PA, Lleó A, Madhan GK, Maletta R, Maver A, Menendez-Gonzalez M, Milan G, Miller B, Mol MO, Momeni P, Moreno-Grau S, Morris CM, Nacmias B, Nilsson C, Novelli V, Öijerstedt L, Padovani A, Pal S, Panchbhaya Y, Pastor P, Peterlin B, Piaceri I, Pickering-Brown S, Pijnenburg YAL, Puca AA, Rainero I, Rendina A, Richardson AMT, Rogaeva E, Rogelj B, Rollinson S, Rossi G, Rossmeier C, Rowe JB, Rubino E, Ruiz A, Sanchez-Valle R, Sando SB, Santillo AF, Saxon J, Scarpini E, Serpente M, Smirne N, Sorbi S, Suh E, Tagliavini F, Thompson JC, Trojanowski JQ, Van Deerlin VM, Van der Zee J, Van Broeckhoven C, van Rooij J, Van Swieten JC, Veronesi A, Vitale E, Waldö ML, Woodward C, Yokoyama J, Escott-Price V, Polke JM, Ferrari R, International FTD-Genetics Consortium. **C9orf72, AAO and ancestry help discriminating behavioural from language variants in FTLD cohorts.** *Neurology.* 95(24):e3288-e3302. I.F.: 8.770

9. Convery RS, Bocchetta M, Greaves CV, Moore KM, Cash DM, Van Swieten J, Moreno F, Sánchez-Valle R, Borroni B, Laforce R, Masellis M, Tartaglia MC, Graff C, Galimberti D, Rowe JB, Finger E, Synofzik M, Vandenberghe R, de Mendonca A, Tagliavini F, Santana I, Ducharme S, Butler C, Gerhard A, Levin J, Danek A, Otto M, Warren JD, Rohrer JD, Genetic FTD Initiative (GENFI). **Abnormal pain perception is associated with thalamo-cortico-striatal atrophy in C9orf72 expansion carriers in the GENFI cohort.** *Journal of Neurology Neurosurgery and Psychiatry.* 91(12):1325-1328. I.F.: 8.263

10. Tavares TP; Mitchell DGV; Coleman KK; Coleman BL; Shoesmith CL; Butler CR; Santana I; Danek A; Gerhard A; de Mendonca A; Borroni B; Tartaglia MC; Graff C; Galimberti

D; Tagliavini F; Moreno F; Frisoni G; Rowe JB; Levin J; Van Swieten JC; Otto M; Synofzik M; Sanchez-Valle R; Vandenberghe R; Laforce RJ; Ghidoni R; Sorbi S; Ducharme S; Masellis M; Rohrer J; Finger E. **Early symptoms in symptomatic and preclinical genetic frontotemporal lobar degeneration.** *Journal of Neurology Neurosurgery and Psychiatry.* 91(9):975-984. I.F.: 8.263

11. Heller C; Foiani MS; Moore K; Convery R; Bocchetta M; Neason M; Cash DM; Thomas D; Greaves CV; Woollacott IOC; Shafei R; Van Swieten JC; Moreno F; Sanchez-Valle R; Borroni B; Laforce R; Masellis M; Tartaglia MC; Graff C; Galimberti D; Rowe JB; Finger E; Synofzik M; Vandenberghe R; De Mendonca A; Tagliavini F; Santana I; Ducharme S; Butler CR; Gerhard A; Levin J; Danek A; Frisoni G; Sorbi S; Otto M; Heslegrave AJ; Zetterberg H; Rohrer JD. **Plasma glial fibrillary acidic protein is raised in progranulin-associated frontotemporal dementia**. *Journal of Neurology Neurosurgery and Psychiatry.* 91(3):263-270. I.F.: 8.263

12. Van der Ende EL; Xiao M; Xu D; Poos JM; Panman JL; Jiskoot LC; Meeter LH; Dopper EG; Papma JM; Heller C; Convery R; Moore K; Bocchetta M; Neason M; Peakman G; Cash DM; Teunissen CE; Graff C; Synofzik M; Moreno F; Finger E; Sánchez-Valle R; Vandenberghe R; Laforce R; Masellis M; Tartaglia MC; Rowe JB; Butler CR; Ducharme S; Gerhard A; Danek A; Levin J; Pijnenburg YA; Otto M; Borroni B; Tagliavini F; de Mendonca A; Santana I; Galimberti D; Seelaar H; Rohrer JD; Worley PF; van Swieten JC; Genetic Frontotemporal Dementia Initiative (GENFI). **Neuronal pentraxin 2: a synapse-derived CSF biomarker in genetic frontotemporal dementia**. *Journal of Neurology Neurosurgery and Psychiatry.* 91(6):612-621. I.F.: 8.263

13. Sola-Valls N; Ariño H; Escudero D; Solana E; Lladó A; Sánchez-Valle R; Blanco Y; Saiz A; Dalmau J; Graus F. **Telemedicine assessment of long-term cognitive and functional status in anti-leucine-rich, glioma-inactivated 1 encephalitis.** *Neurology-Neuroimmunology & Neuroinflammation.* 7(2):e652. I.F.: 7.724

14. Falgàs N, Ruiz-Peris M, Pérez-Millan A, Sala-Llonch R, Antonell A, Balasa M, Borrego-Écija S, Ramos-Campoy O, Augé JM, Castellví M, Tort-Merino A, Olives J, Fernández-Villullas G, Blennow K, Zetterberg H, Bargalló N, Lladó A, Sánchez-Valle R. **Contribution of CSF biomarkers to early-onset Alzheimer's disease and frontotemporal dementia neuroimaging signatures.** *Human Brain Mapping.* 41(8):2004-2013. I.F.: 4.421

15. Ramos-Campoy O; Antonell A; Falgàs N; Balasa M; Borrego-Écija S; Rodríguez-Santiago B; Datta D; Armengol L; Fernández-Villullas G; Bosch B; Olives J; Muñoz-García C; Castellví M; Tort-Merino A; Sánchez-Valle R; Lladó A. **Screening of dementia genes by whole-exome sequencing in Spanish patients with early-onset dementia: likely pathogenic, uncertain significance and risk variants.** *Neurobiology of Aging.* 93:E1-E9. I.F.: 4.347

16. Rosas I, Martínez C, Clarimón J, Lleó A, Illán-Gala I, Dols-Icardo O, Borroni B, Almeida MR, van der Zee J, Van Broeckhoven C, Bruni AC, Anfossi M, Bernardi L, Maletta R, Serpente M, Galimberti D, Scarpini E, Rossi G, Caroppo P, Benussi L, Ghidoni R, Binetti G, Nacmias B, Sorbi S, Piaceri I, Bagnoli S, Antonell A, Sánchez-Valle R, De la Casa-Fages B, Grandas F, Diez-Fairen M, Pastor P, Ferrari R, Álvarez V, Menéndez-González M. **Role for ATXN1, ATXN2, and HTT intermediate repeats in frontotemporal dementia and Alzheimer's disease.** *Neurobiology of Aging.* 87:139.e1-139.e7. I.F.: 4.347

17. Russell LL; Greaves CV; Bocchetta M; Nicholas J; Convery RS; Moore K; Cash DM; van Swieten J; Jiskoot L; Moreno F; Sanchez-Valle R; Borroni B; Laforce R; Masellis M; Tartaglia MC; Graff C; Rotondo E; Galimberti D; Rowe JB; Finger E; Synofzik M; Vandenberghe R; de Mendonça A; Tagliavini F; Santana I; Ducharme S; Butler C; Gerhard A; Levin J; Danek A; Otto M; Warren JD; Rohrer JD; Genetic FTD Initiative; GENFI. **Social cognition impairment in genetic frontotemporal dementia within the GENFI cohort.** *Cortex.* 133:384-398. I.F.: 4.009

18. Falgàs N, Balasa M, Bargalló N, Borrego-Écija S, Ramos-Campoy O, Fernández-Villullas G, Bosch B, Olives J, Tort-Merino A, Antonell A, Castellví M, Allen IE, Sánchez-Valle R, Lladó A. **Diagnostic Accuracy of MRI Visual Rating Scales in the Diagnosis of Early Onset Cognitive Impairment.** *Journal of Alzheimer's Disease.* 73(4):1575-1583. I.F.: 3.909

19. Falcon C, Grau-Rivera O, Suárez-Calvet M, Bosch B, Sánchez-Valle R, Arenaza-Urquijo EM, González-de-Echavarri JM, Gispert JD, Rami L, Molinuevo JL. **Sex Differences of Longitudinal Brain Changes in Cognitively Unimpaired Adults.** *Journal of Alzheimer's Disease.* 76(4):1413-1422. I.F.: 3.909

20. Catalán-García M, García-García FJ, Moreno-Lozano PJ, Alcarraz-Vizán G, Tort-Merino A, Milisenda JC, Cantó-Santos J, Barcos-Rodríguez T, Cardellach F, Lladó A, Novials A, Garrabou G, Grau-Junyent JM. **Mitochondrial Dysfunction: A Common Hallmark Underlying Comorbidity between sIBM and Other Degenerative and Age-Related Diseases.** *Journal of Clinical Medicine.* 9(5):1446. I.F.: 3.303

21. Manzano-Palomo S; Agüera-Ortiz LF; García-Caballero A; Martínez-Raga J; Ojea-Ortega T; Sánchez-Valle R; Antón-Jiménez M; Monge-Argilés JA; Ramos-García I. **Use of Antipsychotics in Patients with Behavioral and Psychological Symptoms of Dementia: Results of a Spanish Delphi Consensus.** *Dementia and Geriatric Cognitive Disorders.* 49(6):573-582. I.F.: 2.31

22. Moore K, Convery R, Bocchetta M, Neason M, Cash DM, Greaves C, Russell LL, Clarke MTM, Peakman G, van Swieten J, Jiskoot L, Moreno F, Barandiaran M, Sanchez-Valle R, Borroni B, Laforce R, Doré MC, Masellis M, Tartaglia MC, Graff C, Galimberti D, Rowe JB, Finger E, Synofzik M, Karnath HO, Vandenberghe R, de Mendonça A, Maruta C, Tagliavini F, Santana I, Ducharme S, Butler C, Gerhard A, Levin J, Danek A, Otto M, Warren JD, Rohrer JD, Genetic FTD Initiative, GENFI. **A modified Camel and Cactus Test detects presymptomatic semantic impairment in genetic frontotemporal dementia within the GENFI cohort.** *Applied Neuropsychology-Adult.* 1-8. I.F.: 1.488

Review / I.F.: 7.724

1. Bodro M, Compta Y, Sánchez-Valle R. **Presentations and mechanisms of CNS disorders related to COVID-19.** *Neurology-Neuroimmunology & Neuroinflammation.* 8(1):e923. I.F.: 7.724

Consortium Publications / I.F.: 8.679

1. Jecmenica Lukic, Milica; Kurz, Carolin; Respondek, Gesine; Grau-Rivera, Oriol;

Compta, Yaroslau; Gelpi, Ellen; Troakes, Claire; van Swieten, John C; Giese, Armin; Roeber, Sigrun; Arzberger, Thomas; Hoeglinger, Guenter; MDS Endorsed Psp Study Grp. **Copathology in Progressive Supranuclear Palsy: Does It Matter?** *Movement Disorders*. 35(6):984-993. I.F.: 8.679

GRANTS FOR RESEARCH IN PROGRESS

Antonell A**. Estudio comparativo de portadores de mutaciones determinantes de enfermedad de Alzheimer y demencia frontotemporal genéticas en un modelo de línea celular linfoblastoide y cerebro.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00670
Duration: 01/01/2018-31/12/2021

Balasa M. **Neurofilamentos en plasma para el diagnóstico del deterioro cognitivo en una cohorte de práctica clínica habitual:correlación con cognición, neuroimagen y otros marcadores bioquímicos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00198
Duration: 01/01/2019-31/12/2022

Lladó A. **Progresión clínica y biomarcadores pronósticos en la Enfermedad de Alzheimer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00449
Duration: 01/01/2020-31/12/2022

Rami L. **Detección precoz de disfunción cognitiva en sujetos con enfermedad de Alzheimer preclínica: asociación de una nueva batería cognitiva, resonancia magnética y biomarcadores en LCR.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00745
Duration: 01/01/2020-31/12/2022

Sánchez-Valle R. **Study of genetic frontotemporal dementia in preclinical and early stages of the disease: cognitive performance, structural and functional neuroimaging and biochemical markers.**
Sponsored by: Fundació la Marató de TV3. Neuro_14
Duration: 12/05/2015-15/11/2021

Sánchez-Valle R. **Demencias genéticamente determinadas (enf. De Alzheimer y enf. Priónicas genéticas) en fases preclínica y sintomática precoz: cognición, neuroimagen y marcadores bioquímicos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00235
Duration: 01/01/2017-30/06/2021

Sánchez-Valle R. **Investigating the impact of meditation training on mental health and wellbeing in the ageing population.**
Sponsored by: European Commission. CE_H2020-PHC-2015-2s
Duration: 01/01/2016-31/12/2020

Sánchez-Valle R. **DIAN-TU: Next generation prevention trial.**
Sponsored by: National Institutes of Health. INT_NIH_PA-16-160_3
Duration: 01/07/2018-31/05/2021

Sánchez-Valle R. **DIAN-TU: Primary prevention trial.**
Sponsored by: National Institutes of Health. INT_NIH_PAR-16-364
Duration: 15/09/2018-31/05/2021

Sánchez-Valle R. **Dominantly Inherited Alzheimer Network (DIAN).**
Sponsored by: National Institutes of Health. INT_NIH_PAR-13-147
Duration: 24/06/2019-23/06/2022

DOCTORAL THESES

Rami L. **Declive Cognitivo Subjetivo en la fase preclínica del continuo Alzheimer.**
PhD student: Natalia Teresa Valech Torres

4.19 Systems neuroscience

LOCATION
Còrsega 176

KEYWORDS
1. **Cerebral cortex**
2. **Brain states**
3. **Neural networks**
4. **Brain rhythms**
5. **Cortical models**
6. **Oscillations**
7. **Virtual reality**
8. **Body representation**

RELATED DISEASES
1. **Disorders of consciousness**
2. **Epilepsy**

GROUP INVOLVED IN
AGAUR_SGR17: 01296

Original publications

TOTAL	8
IF	29,60
Mean IF	3,70
Q1	63%
D1	0%
MA	63%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Maria V. Sanchez-Vives
(ICREA-IDIBAPS)
T. 93 227 54 00 (Ext.: 4301)
msanche3@clinic.cat

ASSISTANT RESEARCHERS
Miquel Bosch (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Almudena Barbero (IDIBAPS)
Diana Casas Torremocha (IDIBAPS)
Andrea Insabato (IDIBAPS)
Justyna Swidrak (IDIBAPS)
Melodia Torao (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Mercè Álvarez de la Campa (IDIBAPS)
Nicolás Barnés (IDIBAPS)
Alessandra Camassa (IDIBAPS)
Joana Rita Covelo (IDIBAPS)
Leonardo Dalla Porta (IDIBAPS)
Tania Jiohnston (IDIBAPS)
José Manuel Sánchez Sánchez (IDIBAPS)

TECHNICIANS
Martina Cortada (IDIBAPS)
Tony Donegan (IDIBAPS)
Christopher Heidelmann (IDIBAPS)
Arnau Manasanch (IDIBAPS)
Brenda Elizabeth Ryan (IDIBAPS)

ADMINISTRATIVE STAFF
Patricia Carvajal (IDIBAPS)
Guillermo Talavera (IDIBAPS)

PROBLEM

How are the emergent activity patterns of the brain generated in different brain states, both physiological and pathological? What are the cellular and network underlying mechanisms? These are questions of basic research in neurosciences that are critical to the design of strategies for exogenous modulation of brain activity in pathological states.

Our group has also a focus on neurotechnology, and the design and testing of novel brain interfaces. Finally, the understanding of the impact of embodiment in immersive virtual reality and its applications on rehabilitation is one of our objectives.

APPROACH

We use a combination of experimental and computational approaches. We use different electrophysiological techniques (from cellular to global brain approaches), novel neurotechnological tools that currently are mostly focused around graphene-based interfaces, brain stimulation, and photopharmacology in collaboration with the group of Dr. Gorostiza (IBEC).

But we consider that the technology employed must be determined by the questions to be answered, therefore we also use other tools like brain imaging (fMRI) or calcium imaging or collaborate with other groups.

Immersive virtual reality and embodiment techniques are also our expertise, and are being employed in laboratory and clinical settings.

IMPACT

Our group has found that the slow oscillatory pattern of the brain is the default activity of the cerebral cortex, and is generated in situations of physical or functional isolation of the cortical network.

Further, the alterations of this emergent pattern in conditions of early ageing, Alzheimer's disease, Williams syndrome, and Down syndrome, provide information about the underlying network alterations.

Our objectives are to investigate exogenous interventions for neuromodulation based on data-driven models to be applied in cortical dysfunction. In the field of a virtual reality applications, we investigate how modifying a virtual body modulates pain and brain plasticity.

RESEARCH LINES

- Cortical network dynamics.
- Brain states.
- Neurotechnology.
- Virtual embodiment.

PUBLICATIONS

Originals / I.F.: 29.595

1. Balaguer-Ballester E; Nogueira R; Abofalia JM; Moreno-Bote R; Sanchez-Vives MV. **Representation of foreseeable choice outcomes in orbitofrontal cortex triplet-wise interactions.** *Plos Computational Biology.* 16(6):e1007862. I.F.: 4.700

2. Gilson, Matthieu; Dahmen, David; Moreno-Bote, Ruben; Insabato, Andrea; Helias, Moritz. **The covariance perceptron: A new paradigm for classification and processing of time series in recurrent neuronal networks.** *Plos Computational Biology.* 16(10):e1008127. I.F.: 4.700

3. Perez-Zabalza M, Reig R, Manrique J, Jercog D, Winograd M, Parga N, Sanchez-Vives MV. **Modulation of cortical slow oscillatory rhythm by GABAB receptors: an in vitro experimental and computational study.** *Journal of Physiology-London.* 598(16):3439-3457. I.F.: 4.547

4. Dasilva M, Navarro-Guzman A, Ortiz-Romero P, Camassa A, Muñoz-Cespedes A, Campuzano V, Sanchez-Vives MV. **Altered Neocortical Dynamics in a Mouse Model of Williams-Beuren Syndrome.** *Molecular Neurobiology.* 57(2):765-777. I.F.: 4.500

5. De Borst AW; Sanchez-Vives MV; Slater M; de Gelder B. **First-Person Virtual Embodiment Modulates the Cortical Network that Encodes the Bodily Self and Its Surrounding Space during the Experience of Domestic Violence.** *Eneuro.* 7(3):eneuro.0263-19.2019. I.F.: 3.544

6. Matamala-Gomez, Marta; Nierula, Birgit; Donegan, Tony; Slater, Mel; Sanchez-Vives, Maria V. **Manipulating the Perceived Shape and Color of a Virtual Limb Can Modulate Pain Responses.** *Journal of Clinical Medicine.* 9(2):291. I.F.: 3.303

7. Carlu, M; Chehab, O; Dalla Porta, L; Depannemaecker, D; Herice, C; Jedynak, M; Ersoz, E Koksal; Muratore, P; Souihel, S; Capone, C; Zerlaut, Y; Destexhe, A; di Volo, M. **A mean-field approach to the dynamics of networks of complex neurons, from nonlinear Integrate-and-Fire to Hodgkin-Huxley models.** *Journal of Neurophysiology.* 123(3):1042-1051. I.F.: 2.234

8. Gonzalez-Liencres C; Zapata LE; Iruretagoyena G; Seinfeld S; Perez-Mendez L; Arroyo-Palacios J; Borland D; Slater M; Sanchez-Vives MV. **Being the Victim of Intimate Partner Violence in Virtual Reality: First- Versus Third-Person Perspective.** *Frontiers in Psychology.* 11:820. I.F.: 2.067

GRANTS FOR RESEARCH IN PROGRESS

Sánchez-Vives MV. **Neurovirtual.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01296
Duration: 01/01/2017-30/09/2021

Sánchez-Vives MV. **GraphCAT: comunidad emergente de grafeno de Catalunya.**
Sponsored by: Generalitat de Catalunya.
GENCAT_TecEmergent18
Duration: 01/07/2018-30/06/2021

Sánchez-Vives MV. **Cluster Emergente del Cerebro Humano (CECH).**
Sponsored by: Generalitat de Catalunya.
GENCAT_TecEmergent18
Duration: 01/01/2019-31/12/2021

Sánchez-Vives MV. **Traslacortex: Desde el estudio de la fisiología cortical a la comprensión y tratamiento de las patologías que la afectan.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_B-FU2017-85048-R
Duration: 01/01/2018-30/06/2021

Sánchez-Vives MV. **Rehabilitación domiciliaria de la rodilla inmovilizada mediante realidad virtual inmersiva.**
Sponsored by: Fundación de investigación médica mutua madrileña. FundM-M_AP171552019
Duration: 24/09/2019-23/09/2022

Sánchez-Vives MV. **Human Brain Project Specific Grant Agreement 2.**
Sponsored by: European Commission.
CE_H2020-FLAG-HBP-17
Duration: 01/04/2018-31/03/2021

Sánchez-Vives MV. **Graphene Flagship Core Project 2.**
Sponsored by: European Commission.
CE_H2020-FLAG-GRA-17
Duration: 01/04/2018-31/03/2021

Sánchez-Vives MV. **European School of Network Neuroscience.**
Sponsored by: European Commission.
CE_H2020-MSCA-ITN-19
Duration: 01/10/2019-30/09/2023

Sánchez-Vives MV, García-Esteve L. **Virtual Reality Prevention of Gender-Violence in Europe based on Neuroscience of Embodiment, peRspective and Empathy.**
Sponsored by: European Commission.
CE_REC_2019
Duration: 01/03/2020-28/02/2022

Sánchez-Vives MV. **Graphene Flagship Core Project 3.**
Sponsored by: European Commission.
CE_H2020-FLAG-GRA-19
Duration: 01/04/2020-31/03/2023

Sánchez-Vives MV. **Human Brain Project Specific Grant Agreement 3.**
Sponsored by: European Commission.
CE_H2020-FLAG-HBP-19
Duration: 01/04/2020-30/03/2023

DOCTORAL THESES

Sanchez-Vives MV. **Cortical network dynamics in physiological and pharmacologically-induced brain states.**
PhD student: Melodía Torao Angosto

Sánchez-Vives MV. **Mechanisms and modulation of cortical rhythms and complexity.**
PhD student: Almudena Barbero Castillo

4.20 Mechanisms of neurotoxicity and neurodegeneration

LOCATION
IIBB-CSIC labs

KEYWORDS
1. **Brain aging**
2. **Environment**
3. **Lifestyle**
4. **Cognitive loss**
5. **Neuroprotection**

RELATED DISEASES
1. **Alzheimer's disease**

GROUP INVOLVED IN
AGAUR_SGR17: 000106
CIBERESP

Original publications

TOTAL	4
IF	16,13
Mean IF	4,03
Q1	50%
D1	25%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Coral Sanfeliu (IIBB-CSIC)
T. 93 363 83 38
coral.sanfeliu@iibb.csic.es

RESEARCHERS
Eduardo Rodríguez Farré (IIBB-CSIC)
Cristina Suñol (IIBB-CSIC)

POST-DOCTORAL RESEARCHERS
Ruben Corpas (IIBB-CSIC)

PRE-DOCTORAL RESEARCHERS
Elisa García Lara (IIBB-CSIC)

TECHNICIANS
Clara Bartra (UB)
Albert Parull (IIBB-CSIC)

PROBLEM

The social and health improvements of recent decades have led to a significant increase in the life expectancy of the population, and these advances have been accompanied by an important rise in the incidence of diseases associated with age.

Lifestyle can also lead to unhealthy habits and environments. Most neurons in the brain age with us and, over time, memory and dementia issues may appear. In view of this scenario, new therapies are needed to prevent or decrease the onset of neurodegenerative changes.

APPROACH

The group uses animal models, cell cultures, and samples of human tissue to investigate neuroprotection and prevention therapies in the face of neurological lesions and cognitive loss.

Studying the mechanisms of neurotoxicity and neurodegeneration of Alzheimer's disease has allowed the group to define targets in the prevention of pathological brain ageing: some of these targets are changes in the brain such as the accumulation of abnormal proteins, inflammation, oxidative stress and decreased neurotrophic factors.

The strategy is to strengthen the cellular mechanisms of defence against these processes with new drugs or therapies.

IMPACT

The group has obtained neuroprotection by activating mechanisms against the accumulation of anomalous proteins that causes Alzheimer's. In doing so, it has observed cognitive improvement in Alzheimer's disease model mice. It is interesting to confirm that these mechanisms were also activated in healthy mice.

Therefore, it might be possible to achieve a preventive effect and brain resilience. The group wants to define the most powerful therapies that activate these molecular resilience pathways and, also, the influence of the environment and of lifestyle in neurodegenerative diseases.

RESEARCH LINES

- Increase of brain resilience by activation of SIRT1-SIRT3 axis.

- Neuronal effects of environmental chemicals.

- Neuroprotection by novel inhibitors of the soluble Epoxide hydrolase.

PUBLICATIONS

Originals / I.F.: 16.126

1. Griñán-Ferré C; Codony S; Pujol E; Yang J; Leiva R; Escolano C; Puigoriol-Illamola D; Companys-Alemany J; Corpas R; Sanfeliu C; Pérez B; Loza MI; Brea J; Morisseau C; Hammock BD; Vázquez S; Pallàs M; Galdeano C. **Pharmacological Inhibition of Soluble Epoxide Hydrolase as a New**

Therapy for Alzheimer's Disease. *Neurotherapeutics*. 17(4):1825-1835. I.F.: 6.035

2. Hernandez, Raul Bonne; Carrascal, Montserrat; Abian, Joaquin; Michalke, Bernhard; Farina, Marcelo; Gonzalez, Yasmilde Rodriguez; Iyirhiaro, Grace O; Moteshareie, Houman; Burnside, Daniel; Golshani, Ashkan; Sunol, Cristina. **Manganese-induced neurotoxicity in cerebellar granule neurons due to perturbation of cell network pathways with potential implications for neurodegenerative disorders.** *Metallomics*. 12(11):1656-1678. I.F.: 3.796

3. Slevin M, E EG, Capitanescu B, Sanfeliu C, Zeinolabediny Y, AlBaradie R, Olah P, Guo B, Pirici D, Napoli MD, Popa-Wagner A. **Monomeric C-Reactive Protein Aggravates Secondary Degeneration after Intracerebral Haemorrhagic Stroke and May Function as a Sensor for Systemic Inflammation.** *Journal of Clinical Medicine.* 9(9):3053. I.F.: 3.303

4. Naime AA, Lopes MW, Colle D, Dafré AL, Suñol C, da Rocha JBT, Aschner M, Leal RB, Farina M. **Glutathione in Chlorpyrifos-and Chlorpyrifos-Oxon-Induced Toxicity: a Comparative Study Focused on Non-cholinergic Toxicity in HT22 Cells.** *Neurotoxicity Research*. 38(3):603-610. I.F.: 2.992

Review / I.F.: 4.082

1. Pallàs M, Vázquez S, Sanfeliu C, Galdeano C, Griñán-Ferré C. **Soluble Epoxide Hydrolase Inhibition to Face Neuroinflammation in Parkinson's Disease: A New Therapeutic Strategy**. *Biomolecules*. 10(5):703. I.F.: 4.082

GRANTS FOR RESEARCH IN PROGRESS

Sanfeliu C. **Soluble Epoxide hydrolase modulation in brain and peripheral tissues: Involvement in early neuroinflammation.**
Sponsored by: Ministerio de Ciencia e Innovación (es). MICINN_ PID2019-106285RB-C22
Duration: 01/06/2020-31/05/2023

DOCTORAL THESES

Sanfeliu C. **Impacto del ejercicio físico a largo plazo en la neuroprotección de sujetos de mediana edad: Estudio de los mecanismos moleculares involucrados.**
PhD student: Adrián de la Rosa González

4.21 Cellular neurobiology

LOCATION
UB School of Medicine
IIBB-CSIC labs

KEYWORDS
1. **Neuroinflammation**
2. **Microglia**
3. **CD200**
4. **CD200R**
5. **C/EBPs**
6. **Neurodegenerative diseases**

RELATED DISEASES
1. **Parkinson's disease**
2. **Amytrophic lateral sclerosis**
3. **Multiple sclerosis**
4. **Alzheimer's disease**
5. **Huntington's disease**

GROUP INVOLVED IN
AGAUR_SGR17: 00939

Original publications

TOTAL	2
IF	14,72
Mean IF	7,36
Q1	100%
D1	50%
MA	100%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Josep Saura (UB)
T. 93 402 19 20
josepsaura@ub.edu

RESEARCHERS
Joan Serratosa (IIBB-CSIC)
Carme Solà (IIBB-CSIC)

TECHNICIANS
Rosario Ruiz López (UB)

PROBLEM

Glial cells are essential for the proper functioning of neurons. When there is some type of alteration in the nervous system, glial cells organise a coordinated response to try to solve or minimise the problem.

This response is very similar to inflammatory reactions (neuroinflammation). Although essentially a protective solution, if it is too intense or too prolonged in time it can cause damage to the nervous tissue. There is a wealth of scientific evidence demonstrating that neuroinflammation is involved in the progression of most neurological diseases.

APPROACH

The group's main objective is to contribute to the discovery of strategies to reduce the harmful effects of neuroinflammation in human diseases.
To achieve this, the group is working on: the development of new tools to study neuroinflammation; the identification of the elements of the neuro-inflammatory response responsible for its harmful effects; and the discovery of therapeutic strategies that inhibit harmful elements of the neuro-inflammatory response or enhance beneficial ones.

IMPACT

The group has developed new methods to cultivate the main cell types in neuroinflammation (microglia and astrocytes) and new methods to co-activate neurons with microglia that allow it to study, in culture, the neurotoxic role of the neuro-inflammatory response.

It is working to determine the role played by various microglia cell proteins (the C/EBPs and the CD200/CD200R1 system) in the neuro-inflammatory response. That is why it is designing experiments that enable it to establish whether these proteins can serve as therapeutic targets for new drugs that are capable of inhibiting the neuro-inflammatory response.

RESEARCH LINES

- Characterization and optimization of protocols for primary glial cultures.

- The PPARgamma agonist MIN-102 as potential therapeutic agent in neurological disorders.

- The microglial inhibitory receptor CD200R1 in the control of neuroinflammation.

- The transcription factors C/EBPδ and C/EBPβ in neuroinflammation.

PUBLICATIONS

Originals / I.F.: 14.715

1. Valente T, Dentesano G, Ezquerra M, Fernandez-Santiago R, Martinez-Martin J, Gallastegui E, Domuro C, Compta Y, Martí MJ, Bachs O, Márquez-Kisinousky L, Straccia M, Solà C, Saura J. **CCAAT/enhancer binding protein δ is a transcriptional repressor of α-synuclein.** *Cell Death and Differentiation.* 27(2):509-524. I.F.: 10.717

2. Rabaneda-Lombarte N, Blasco-Agell L, Serratosa J, Ferigle L, Saura J, Solà C. **Parkinsonian neurotoxicants impair the anti-inflammatory response induced by IL4 in glial cells: involvement of the CD200-CD200R1 ligand-receptor pair.** *Scientific Reports.* 10(1):10650. I.F.: 3.998

Consortium Publications / I.F.: 8.679

1. Pérez-Soriano A, Bravo P, Soto M, Infante J, Fernández M, Valldeoriola F, Muñoz E, Compta Y, Tolosa E, Garrido A, Ezquerra M, Fernández-Santiago R, Martí MJ, Catalan MSA registry (CMSAR). **MicroRNA Deregulation in Blood Serum Identifies Multiple System Atrophy Altered Pathways.** *Movement Disorders.* 35(10):1873-1879. I.F.: 8.679

GRANTS FOR RESEARCH IN PROGRESS

Saura J. **Nanoparticle delivery system for neurodegenerative disorders.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC14/00016
Duration: 01/01/2015-30/06/2020

Saura J. **C/EBPs microgliales como potencial diana terapéutica en la enfermedad de Parkinson.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI14/00302
Duration: 01/01/2015-30/06/2020

Solà C. **Búsqueda de nuevas indicaciones terapéuticas en el ámbito de enfermedades neurodegenerativas y mitocondriales para el compuesto PPAR gamma agonista MIN-102.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades.
MCIU_RTC-2017-5867-1
Duration: 01/01/2018-31/12/2020

4.22 Multimodal neuroimaging in high risk and early psychosis

LOCATION
CEK building, floor -1

KEYWORDS
1. **Psychotic disorders**
2. **Adolescence**
3. **Brain development**
4. **Brain imaging**

RELATED DISEASES
1. **Psychotic disorders**
2. **Schizophrenia**
3. **Bipolar disorders**
4. **Neurodevelopmental disorders**
5. **Nmda receptor encefalitis**

GROUP INVOLVED IN
AGAUR_SGR17: 00881
CIBERSAM_G04

Original publications

TOTAL	8
IF	36,04
Mean IF	4,50
Q1	75%
D1	38%
MA	0%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Gisela Sugranyes (HCB-IDIBAPS)
T. 93 227 54 00 (Ext.: 4804)
gernest@clinic.cat

POST-DOCTORAL RESEARCHERS
Isabel Valli (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Adriana Fortea (HCB)
Daniel Ilzarbe (HCB)
Mireia Masias (IDIBAPS)

TECHNICIANS
Francina Badia (FCRB)

PROBLEM

Psychotic disorders are one of the first causes of disability among young people. One of the strongest determinants of long-term outcome is early detection of the disorder. However, at present, diagnosis still relies on clinical interview.

It is possible that some of the changes that occur in the brain of patients with psychotic disorders begin years before clinical symptoms emerge. Therefore, the group has set out to identify brain markers with the potential to inform of the risk of disease before clinical onset of the disorder.

APPROACH

The group studies children and adolescents through clinical interviews, neuropsychological tests, brain magnetic resonance imaging, and blood or saliva samples, which are repeated over follow-up.

It evaluates both typically developing individuals and young people at different stages of psychosis risk, either because they have mild or non-specific symptoms, or because they have a family history of the disorder. It also evaluates young people with a recent diagnosis of psychotic disorder or with a specific type of autoimmune encephalitis, which is an illness that in some cases has similar manifestations to psychosis.

IMPACT

So far, the group has demonstrated that young people with an increased risk of psychosis show changes in brain structure, and specifically, that a more accentuated loss of cortical thickness is associated with the development of psychosis symptoms.

It has also found that young people with psychotic disorders have poorer connectivity in the frontal area of the brain, which could be related to some of the social difficulties that they often present.

The next step includes combining magnetic resonance data with other biological measures, to try to predict the development of psychotic disorders in high-risk population.

RESEARCH LINES

- Characterisation of neural substrates of vulnerability to psychosis, and relationship with clinical manifestations, in youth in the early stages of psychosis.

- Multimodal prediction of psychosis in high risk youth.

- New treatment options for youth with emerging psychosis.

- Understanding trajectories of change in brain structure / function leading to health and disease during youth.

PUBLICATIONS

Originals / I.F.: 36.035

1. Ariño H, Muñoz-Lopetegi A, Martinez-Hernandez E, Armangue T, Rosa-Justicia M, Escudero D, Matos N, Graus F, Sugranyes G, Castro-Fornieles J, Compte A, Dalmau J, Santamaria J. **Sleep disorders in anti-NMDAR encephalitis**. *Neurology*. 95(6):e671-e684. I.F.: 8.770

2. Bioque M, Parellada E, García-Rizo C, Amoretti S, Fortea A, Oriolo G, Palau P, Boix-Quintana E, Safont G, Bernardo M. **Clozapine and paliperidone palmitate antipsychotic combination in treatment-resistant schizophrenia and other psychotic disorders: A retrospective 6-month mirror-image study.** *European Psychiatry*. 63(1):e71. I.F.: 4.464

3. De Zwarte SMC; Brouwer RM; Agartz I; Alda M; Alonso-Lana S; Bearden CE; Bertolino A; Bonvino A; Bramon E; Buimer EEL; Cahn W; Canales-Rodríguez EJ; Cannon DM; Cannon TD; Caseras X; Castro-Fornieles J; Chen Q; Chung Y; De la Serna E; Del Mar Bonnin C; Demro C; Di Giorgio A; Doucet GE; Eker MC; Erk S; Fatjó-Vilas M; Fears SC; Foley SF; Frangou S; Fullerton JM; Glahn DC; Goghari VM; Goikolea JM; Goldman AL; Gonul AS; Gruber O; Hajek T; Hawkins EL; Heinz A; Hidiroglu Ongun C; Hillegers MHJ; Houenou J; Hulshoff Pol HE; Hultman CM; Ingvar M; Johansson V; Jönsson EG; Kane F; Kempton MJ; Koenis MMG; Kopecek M; Krämer B; Lawrie SM; Lenroot RK; Marcelis M; Mattay VS; McDonald C; Meyer-Lindenberg A; Michielse S; Mitchell PB; Moreno D; Murray RM; Mwangi B; Nabulsi L; Newport J; Olman CA; van Os J; Overs BJ; Ozerdem A; Pergola G; Picchioni MM; Piguet C; Pomarol-Clotet E; Radua J; Ramsay IS; Richter A; Roberts G; Salvador R; Saricicek Aydogan A; Sarró S; Schofield PR; Simsek EM; Simsek F; Soares JC; Sponheim SR; Sugranyes G; Toulopoulou T; Tronchin G; Vieta E; Walter H; Weinberger DR; Whalley HC; Wu MJ; Yalin N; Andreassen OA; Ching CRK; Thomopoulos SI; van Erp TGM; Jahanshad N; Thompson PM; Kahn RS; van Haren NEM. **Intelligence, educational attainment, and brain structure in those at familial high-risk for schizophrenia or bipolar disorder.** *Human Brain Mapping*. I.F.: 4.421

4. De la Serna E, Camprodon-Boadas P, Ilzarbe D, Sugranyes G, Baeza I, Moreno D, Díaz-Caneja CM, Rosa-Justicia M, Llorente C, Ayora M, Borras R, Torrent C, Bernardo M, Castro-Fornieles J. **Neuropsychological development in the child and adolescent offspring of patients diagnosed with schizophrenia or bipolar disorder: A two-year follow-up comparative study.** *Progress in Neuro-Psychopharmacology & Biological Psychiatry*. 103:109972. I.F.: 4.361

5. Tor J, Dolz M, Sintes-Estevez A, de la Serna E, Puig O, Muñoz-Samons D, Pardo M, Rodríguez-Pascual M, Sugranyes G, Sánchez-Gistau V, Baeza I. **Neuropsychological profile of children and adolescents with psychosis risk syndrome: the CAPRIS study.** *European Child & Adolescent Psychiatry*. 29(9):1311-1324. I.F.: 3.941

6. Camprodon-Boadas P, de la Serna E, Baeza I, Puig O, Ilzarbe D, Sugranyes G, Borras R, Castro-Fornieles J. **Cognitive reserve in patients with first-episode psychosis as outcome predictor at 5-year follow-up.** *European Child & Adolescent Psychiatry*. I.F.: 3.941

7. Sánchez-Gutiérrez T; Rodríguez-Toscano E; Llorente C; de la Serna E; Moreno C; Sugranyes G; Romero S; Calvo A; Baeza I; Sánchez-Gistau V; Espliego A; Castro-Fornieles J; Moreno D. **Neuropsychological, clinical and environmental predictors of severe mental disorders in offspring of patients with schizophrenia.** *European Archives of Psychiatry and Clinical Neuroscience*. 270(6):739-748. I.F.: 3.288

8. Ilzarbe D; Lukito S; Moessnang C; O'Daly OG; Lythgoe DJ; Murphy CM; Ashwood K; Stoencheva V; Rubia K; Simonoff E. **Neural Correlates of Theory of Mind in Autism Spectrum Disorder, Attention-Deficit/Hyperactivity Disorder, and the Comorbid Condition**. *Frontiers in Psychiatry*. 11:544482. I.F.: 2.849

GRANTS FOR RESEARCH IN PROGRESS

Sugranyes G. **Estudio del procesamiento perceptual temprano en adolescentes con esquizofrenia de debut reciente y pacientes con encefalitis anti-NMDAR para evaluar la hipótesis glutamatérgica de la esquizofrenia.**
Sponsored by: Generalitat de Catalunya.
PERIS_SLT006/17/00362
Duration: 17/02/2018-10/04/2021

Sugranyes G. **Construction of a multimodal model with diagnostic and prognostic potential in youth at high risk for psychosis: integration of genetic, environmental and neuroimaging factors.**
Sponsored by: Fundació Clínic per a la Recerca Biomèdica. FCRB_PB1_2018
Duration: 25/04/2018-31/12/-

Sugranyes G. **Construcción de un modelo multimodal con capacidad diagnóstica y pronóstica de adolescentes con alto riesgo de psicosis: integración de factores genéticos, ambientales y de neuroimagen.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00976
Duration: 01/01/2019-31/12/2021

Sugranyes G. **Marcadores de disfunción glutamatérgica en adolescentes con alto riesgo de psicosis: relación con estructura cerebral, sintomatología y metabolismo oxidativo.**
Sponsored by: Fundación Alicia Koplowitz.
AKOPLOWITZ20_004
Duration: 01/11/2020-31/10/2022

Sugranyes G. F**rom the synapse to brain structure and function: a comparative study between youth with early stage psychosis and patients with NMDA Receptro Encephalitis.**
Sponsored by: Brain & Behavior Research Foundation. INT_NARSAD17_YIG_02B
Duration: 15/02/2018-14/07/2021

4.23 Neurobiology

LOCATION
IIBB-CSIC labs
UB School of Medicine

KEYWORDS
1. **Neurodegeneration**
2. **Alzheimer's disease**
3. **Mitochondrial DNA**
4. **Microglia**
5. **Neuronal pentraxin**
6. **Neuronal death**
7. **Mitochondrial dynamics**

RELATED DISEASES
1. **Alzheimer**
2. **Parkinson**

GROUP INVOLVED IN
CIBERNED

Original publications

TOTAL	7
IF	40,57
Mean IF	5,80
Q1	86%
D1	29%
MA	29%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Ramon Trullàs (IIBB-CSIC)
T. 93 363 83 03
ramon.trullas@iibb.csic.es

RESEARCHERS
Anna Colell (IIBB-CSIC)
Petar Podlesniy (CIBER)
Manuel José Rodríguez Allué (UB)

PRE-DOCTORAL RESEARCHERS
Cristina de Dios (IIBB-CSIC)
Verónica Pablo (CIBER)
Vicente Roca (IIBB-CSIC)

TECHNICIANS
Carmen Andrade (UB)
Andrea Reparaz (CIBER)
Núria Serra (CIBER)

PROBLEM

At present, there are no effective treatments to combat the causes of neurodegenerative diseases such as Alzheimer's and Parkinson's diseases, due to a lack of knowledge of the mechanisms directly responsible for the death of the neurons.

The group is working on identifying these molecular mechanisms that are essential for the neurodegenerative process to take place, and on finding the necessary tools to prevent this.

APPROACH

One of the molecular mechanisms that is essential for the survival of neurons is the production of energy, a process in which the mitochondria participate. These organelles also intervene in certain types of cell death (apoptosis), in the degradation of macromolecules (autophagy) and in inflammation.

The group has based its research on the hypothesis that neurodegeneration leads to alteration of the mitochondrial function. Studying the mitochondrial function, identifying the causes of its alteration and determining how it triggers neurodegeneration are the group's main objectives.

IMPACT

Mitochondria have their own DNA which regulates the energy they produce. The group has discovered that a reduction in mitochondrial DNA content precedes the development of Alzheimer's disease.

It is now investigating the role of mitochondrial DNA transcription and replication in neurodegenerative diseases, and how mitochondrial oxidative stress and changes in glutathione levels (an enzyme) regulate cell processes such as autophagy and contribute to cytotoxicity induced by beta-amyloid peptides, which play a crucial role in Alzheimer's disease.

RESEARCH LINES

- Study the role of mitochondrial function in neuroinflammation and amyloid beta (Aβ) - induced cell death.

- To investigate the role of mitochondrial DNA in synapse elimination and neurodegeneration in genetic models of neurodegenerative diseases.

- To study the mechanisms that alter amyloid beta (Aβ) clearance and disposal of dysfunctional mitochondria.

PUBLICATIONS

Originals / I.F.: 40.567

1. Fernández-García S, Conde-Berriozabal S, García-García E, Gort-Paniello C, Bernal-Casas D, García-Díaz Barriga G, López-Gil J, Muñoz-Moreno E, Soria G, Campa L, Artigas F, Rodríguez MJ, Alberch J, Masana M. **M2 cortex-dorsolateral striatum stimulation reverses motor symptoms and synaptic deficits in Huntington's disease.** *Elife*. 9:e57017. I.F.: 7.080

2. Tutusaus A; de Gregorio E; Cucarull B; Cristóbal H; Aresté C; Graupera I; Coll M; Colell A; Gausdal G; Lorens JB; García de Frutos P; Morales A; Marí M. **A Functional Role of GAS6/TAM in Nonalcoholic Steatohepatitis Progression Implicates AXL as Therapeutic Target.** *Cellular and Molecular Gastroenterology and Hepatology*. 9(3):349-368. I.F.: 7.076

3. Fernández-García S; Orlandi JG; García-Díaz Barriga GA; Rodríguez MJ; Masana M; Soriano J; Alberch J. **Deficits in coordinated neuronal activity and network topology are striatal hallmarks in Huntington's disease.** *Bmc Biology*. 18(1):58. I.F.: 6.765

4. Cucarull B, Tutusaus A, Subías M, Stefanovic M, Hernáez-Alsina T, Boix L, Reig M, García de Frutos P, Marí M, Colell A, Bruix J, Morales A. **Regorafenib Alteration of the BCL-xL/MCL-1 Ratio Provides a Therapeutic Opportunity for BH3-Mimetics in Hepatocellular Carcinoma Models.** *Cancers*. 12(2):332. I.F.: 6.126

5. Parcerisas A; Pujadas L; Ortega-Gascó A; Perelló-Amorós B; Viais R; Hino K; Figueiro-Silva J; La Torre A; Trullás R; Simó S; Lüders J; Soriano E. **NCAM2 Regulates Dendritic and Axonal Differentiation through the Cytoskeletal Proteins MAP2 and 14-3-3.** *Cerebral Cortex*. 30(6):3781-3799. I.F.: 5.043

6. Podlesniy P; Llorens F; Puigròs M; Serra N; Sepúlveda-Falla D; Schmidt C; Hermann P; Zerr I; Trullas R. **Cerebrospinal fluid mitochondrial DNA in rapid and slow progressive forms of Alzheimer's disease.** *International Journal of Molecular Sciences*. 21(17):6298. I.F.: 4.556

7. Kim A; García-García E; Straccia M; Comella-Bolla A; Miguez A; Masana M; Alberch J; Canals JM; Rodríguez MJ. **Reduced Fractalkine Levels Lead to Striatal Synaptic Plasticity Deficits in Huntington's Disease.** *Frontiers in Cellular Neuroscience*. 14:163. I.F.: 3.921

Review / I.F.: 9.57

1. Marí M; de Gregorio E; de Dios C; Roca-Agujetas V; Cucarull B; Tutusaus A; Morales A; Colell A. **Mitochondrial glutathione: Recent insights and role in disease.** *Antioxidants*. 9(10):909. I.F.: 5.014

2. De Gregorio E; Colell A; Morales A; Marí M. **Relevance of SIRT1-NF-κB Axis as Therapeutic Target to Ameliorate Inflammation in Liver Disease.** *International Journal of Molecular Sciences*. 21(11):3858. I.F.: 4.556

GRANTS FOR RESEARCH IN PROGRESS

Colell A. **Autophagy-inflammasome interplay as a therapeutic target for Alzheimer's disease.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-095572
Duration: 01/01/2019-31/12/2022

Trullas R, Podlesniy P. **Replication and transcription of mitochondrial DNA as a key mechanism of the pathological sequence leading to neurodegeneration.**
Sponsored bt: Ministerio de Economía y Competitividad. MINECO_SAF2017-89791-R
Duration: 01/01/2018-31/12/2020

4.24 Bipolar and depressive disorders

LOCATION
HCB building
Mallorca 183 building

KEYWORDS
1. **Bipolar disorder**
2. **Depression**
3. **Cognition**

RELATED DISEASES
1. **Bipolar disorder**
2. **Depressive disorder**
3. **Addictions**
4. **Postnatal depression**

GROUP INVOLVED IN
AGAUR_SGR17: 01365, 01798
CIBERSAM

AWARDS
Premi extraordinari de Doctorat del curs acadèmic 2018-2019
Institution: Facultat de Medicina i Ciències de la Salut (UB)
Awardee/s: Norma Verdolini

Top 1% most cited researcher globally
Institution: Clarivate Analytics
Awardee/s: Eduard Vieta

Original publications

TOTAL	74
IF	373,85
Mean IF	5,05
Q1	65%
D1	20%
MA	24%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Eduard Vieta (HCB)
T. 93 227 54 00 (Ext.: 3130)
evieta@clinic.cat

RESEARCHERS
Antonio Benabarre (HCB)
Luisa Garcia Esteve (HCB)
José Manuel Goikolea (HCB)
Iria Grande (HCB)
Fernando Gutiérrez Ponce de León (HCB)
Diego Hidalgo Mazzei (HCB-IDIBAPS)
Ana Isabel Martínez Arán (HCB)
Rocío Martín-Santos (HCB)
Andrea Murru (HCB)
Isabella Pacchiarotti (HCB)
Luis Pintor (HCB-UB)
Carla Torrent (IDIBAPS)

ASSISTANT RESEARCHERS
Silvia Cañizaress (HCB)
Joana Guarch (HCB)
Victor Navarro (HCB)
Ricard Navinés (HCB)

POST-DOCTORAL RESEARCHERS
Caterina del Mar Bonnín (FCRB)
Myriam Cavero (HCB)
Marina Garriga (IDIBAPS)
Ester Jiménez Martínez (IDIBAPS)
Brissa Solé (IDIBAPS)
Eva Solé (HCB)
Anna Torres (HCB)
Imma Torres (CIBER)
Marc Valentí (HCB)
Norma Verdolini (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Ivette Morilla (HCB)
Laura Motejo (CIBER)
Estela Salagre (CIBER)
José Sánchez Moreno (CIBER)
Èlia Valls (CIBER)
Cristina Varo (CIBER)

TECHNICIANS
Rosa Maria Palaus (FCRB)

PROBLEM

Bipolar and depressive disorders are serious mental health conditions that affect almost 10% of the population at some point in their lives.

Our group takes an expert approach to bipolar disorder and depressive disorders, these being prevalent and complex pathologies that require in-depth knowledge of psychopharmacology and psychotherapy.

APPROACH

The group's research is highly translational. That is to say, it is geared towards a better understanding of bipolar and depressive disorders and corresponding improvements in clinical practice.

It employs a multidisciplinary approach, both to patient care and to teaching and research, and it investigates the neurobiological and anatomical-functional mechanisms that are involved in the clinical development and progression of these conditions, comorbidity (co-occurrence with other conditions), intervening neurocognitive mechanisms and the quest for new pharmacological, biophysical and psychosocial treatments.

IMPACT

The group has contributed to increasing the availability of new drugs for bipolar and depressive disorders, by designing and conducting clinical trials that have facilitated the introduction of new approaches to the pharmacological treatment of these diseases.

It has demonstrated the efficacy of psychoeducation combined with medications as the standard treatment for bipolar disorder, as recognised by international therapeutic guides.

It has also contributed to the identification of patterns of neurocognitive deterioration and their neuroimaging correlates in depression and bipolar disorder.

RESEARCH LINES

- Clinical trials and innovation in psychopharmacology of bipolar and depressive disorders.

- Endophenotypes, genetics and biomarkers of affective disorders.

- Epidemiology and disability associated with bipolar and unipolar disorders.

- First affective and psychotic episodes.

- Innovative psychological interventions for bipolar disorder and depression.

- Neurocognition and neuroimaging of bipolar and unipolar disorders.

- Observational studies in affective disorders.

- Psychometrics of mental disorders.

PUBLICATIONS

Originals / I.F.: 373.849

1. McIntyre RS; Berk M; Brietzke E; Goldstein BI; López-Jaramillo C; Kessing LV; Malhi GS; Nierenberg AA; Rosenblat JD; Majeed A; Vieta E; Vinberg M; Young AH; Mansur RB. **Bipolar disorders.** *Lancet*. 396(10265):1841-1856. I.F.: 60.390

2. Fornaro M, Maritan E, Ferranti R, Zaninotto L, Miola A, Anastasia A, Murru A, Solé E, Stubbs B, Carvalho AF, Serretti A, Vieta E, Fusar-Poli P, McGuire P, Young AH, Dazzan P, Vigod SN, Correll CU, Solmi M. **Lithium Exposure During Pregnancy and the Postpartum Period: A Systematic Review and Meta-Analysis of Safety and Efficacy Outcomes.** *American Journal of Psychiatry*. 177(1):76-92. I.F.: 14.119

3. Nunes A, Schnack HG, Ching CRK, Agartz I, Akudjedu TN, Alda M, Alnæs D, Alonso-Lana S, Bauer J, Baune BT, Bøen E, Bonnin CDM, Busatto GF, Canales-Rodríguez EJ, Cannon DM, Caseras X, Chaim-Avancini TM, Dannlowski U, Díaz-Zuluaga AM, Dietsche B, Doan NT, Duchesnay E, Elvsåshagen T, Emden D, Eyler LT, Fatjó-Vilas M, Favre P, Foley SF, Fullerton JM, Glahn DC, Goikolea JM, Grotegerd D, Hahn T, Henry C, Hibar DP, Houenou J, Howells FM, Jahanshad N, Kaufmann T, Kenney J, Kircher TTJ, Krug A, Lagerberg TV, Lenroot RK, López-Jaramillo C, Machado-Vieira R, Malt UF, McDonald C, Mitchell PB, Mwangi B, Nabulsi L, Opel N, Overs BJ, Pineda-Zapata JA, Pomarol-Clotet E, Redlich R, Roberts G, Rosa PG, Salvador R, Satterthwaite TD, Soares JC, Stein DJ, Temmingh HS, Trappenberg T, Uhlmann A, van Haren NEM, Vieta E, Westlye LT, Wolf DH, Yüksel D, Zanetti MV, Andreassen OA, Thompson PM, Hajek T, ENIGMA Bipolar Disorders Working Group. **Using structural MRI to identify bipolar disorders - 13 site machine learning study in 3020 individuals from the ENIGMA Bipolar Disorders Working Group.** *Molecular Psychiatry*. 25(9):2130-2143. I.F.: 12.384

4. Amare AT, Schubert KO, Hou L, Clark SR, Papiol S, Cearns M, Heilbronner U, Degenhardt F, Tekola-Ayele F, Hsu YH, Shekhtman T, Adli M, Akula N, Akiyama K, Ardau R, Arias B, Aubry JM, Backlund L, Bhattacharjee AK, Bellivier F, Benabarre A, Bengesser S, Biernacka JM, Birner A, Brichant-Petitjean C, Cervantes P, Chen HC, Chillotti C, Cichon S, Cruceanu C, Czerski PM, Dalkner N, Dayer A, Del Zompo M, DePaulo JR, Étain B, Jamain S, Falkai P, Forstner AJ, Frisen L, Frye MA, Fullerton JM, Gard S, Garnham JS, Goes FS, Grigoroiu-Serbanescu M, Grof P, Hashimoto R, Hauser J, Herms S, Hoffmann P, Hofmann A, Jiménez E, Kahn JP, Kassem L, Kuo PH, Kato T, Kelsoe JR, Kittel-Schneider S, Kliwicki S, König B, Kusumi I, Laje G, Landén M, Lavebratt C, Leboyer M, Leckband SG, Tortorella A, Manchia M, Martinsson L, McCarthy MJ, McElroy SL, Colom F, Mitjans M, Mondimore FM, Monteleone P, Nievergelt CM, Nöthen MM, Novák T, O'Donovan C, Ozaki N, Ösby U, Pfennig A, Potash JB, Reif A,, Reininghaus E, Rouleau GA, Rybakowski JK, Schalling M, Schofield PR, Schweizer BW, Severino G, Shilling PD, Shimoda K, Simhandl C, Slaney CM, Squassina A, Stamm T, Stopkova P, Maj M, Turecki G, Vieta E, Veeh J, Witt SH, Wright A, Zandi PP, Mitchell PB, Bauer M, Alda M, Rietschel M, McMahon FJ, Schulze TG, Baune BT Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. **Association of polygenic score for major depression with response to lithium in patients with bipolar disorder.** *Molecular Psychiatry*. I.F.: 12.384

5. Han LKM, Dinga R, Hahn T, Ching CRK, Eyler LT, Aftanas L, Aghajani M, Aleman A, Baune BT, Berger K, Brak I, Filho GB, Carballedo A, Connolly CG, Couvy-Duchesne B, Cullen KR, Dannlowski U, Davey CG, Dima D, Duran FLS, Enneking V, Filimonova E, Frenzel S, Frodl T, Fu CHY, Godlewska BR, Gotlib IH, Grabe HJ, Groenewold NA, Grotegerd D, Gruber O, Hall GB, Harrison BJ, Hatton SN, Hermesdorf M, Hickie IB, Ho TC, Hosten N, Jansen A, Kähler C, Kircher T, Klimes-Dougan B, Krämer B, Krug A, Lagopoulos J, Leenings R, MacMaster FP, MacQueen G, McIntosh A, McLellan Q, McMahon KL, Medland SE, Mueller BA, Mwangi B, Osipov E, Portella MJ, Pozzi E, Reneman L, Repple J, Rosa PGP, Sacchet MD, Sämann PG, Schnell K, Schrantee A, Simulionyte E, Soares JC, Sommer J, Stein DJ, Steinsträter O, Strike LT, Thomopoulos SI, van Tol MJ, Veer IM, Vermeiren RRJM, Walter H, van der Wee NJA, van der Werff SJA, Whalley H, Winter NR, Wittfeld K, Wright MJ, Wu MJ, Völzke H, Yang TT, Zannias V, de Zubicaray GI, Zunta-Soares GB, Abé C, Alda M, Andreassen OA, Bøen E, Bonnin CM, Canales-Rodriguez EJ, Cannon D, Caseras X, Chaim-Avancini TM, Elvsåshagen T, Favre P, Foley SF, Fullerton JM, Goikolea JM, Haarman BCM, Hajek T, Henry C, Houenou J, Howells FM, Ingvar M, Kuplicki R, Lafer B, Landén M, Machado-Vieira R, Malt UF, McDonald C, Mitchell PB, Nabulsi L, Otaduy MCG, Overs BJ, Polosan M, Pomarol-Clotet E, Radua J, Rive MM, Roberts G, Ruhe HG, Salvador R, Sarró S, Satterthwaite TD, Savitz J, Schene AH, Schofield PR, Serpa MH, Sim K, Soeiro-de-Souza MG, Sutherland AN, Temmingh HS, Timmons GM, Uhlmann A, Vieta E, Wolf DH, Zanetti MV, Jahanshad N, Thompson PM, Veltman DJ, Penninx BWJH, Marquand AF, Cole JH, Schmaal L. **Brain aging in major depressive disorder: results from the ENIGMA major depressive disorder working group.** *Molecular Psychiatry*. I.F.: 12.384

6. Mas S, Boloc D, Rodríguez N, Mezquida G, Amoretti S, Cuesta MJ, González-Peñas J, García-Alcón A, Lobo A, González-Pinto A, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Saiz-Ruiz J, Gassó P, Bioque M, Bernardo M, PEPs Group. **Examining Gene-Environment Interactions Using Aggregate Scores in a First-Episode Psychosis Cohort.** *Schizophrenia Bulletin*. 46(4):1019-1025. I.F.: 7.958

7. Li Q; Zhao Y; Chen Z; Long J; Dai J; Huang X; Lui S; Radua J; Vieta E; Kemp GJ; Sweeney JA; Li F; Gong Q. **Meta-analysis of cortical thickness abnormalities in medication-free patients with major depressive disorder.** *Neuropsychopharmacology*. 45(4):703-712. I.F.: 6.751

8.-Gil-López F, Boget T, Manzanares I, Donaire A, Conde-Blanco E, Baillés E, Pintor L, Setoaín X, Bargalló N, Navarro J, Casanova J, Valls J, Roldán P, Rumià J, Casanovas G, Domenech G, Torres F, Carreño M. **External trigeminal nerve stimulation for drug resistant epilepsy: a randomized controlled trial.** *Brain Stimulation.* 13(5):1245-1253. I.F.: 6.565

9. Radua J, Vieta E, Shinohara R, Kochunov P, Quidé Y, Green MJ, Weickert CS, Weickert T, Bruggemann J, Kircher T, Nenadić I, Cairns MJ, Seal M, Schall U, Henskens F, Fullerton JM, Mowry B, Pantelis C, Lenroot R, Cropley V, Loughland C, Scott R, Wolf D, Satterthwaite TD, Tan Y, Sim K, Piras F, Spalletta G, Banaj N, Pomarol-Clotet E, Solanes A, Albajes-Eizagirre A, Canales-Rodríguez EJ, Sarro S, Di Giorgio A, Bertolino A, Stäblein M, Oertel V, Knöchel C, Borgwardt S, du Plessis S, Yun JY, Kwon JS, Dannlowski U, Hahn T, Grotegerd D, Alloza C, Arango C, Janssen J, Díaz-Caneja C, Jiang W, Calhoun V, Ehrlich S, Yang K, Cascella NG, Takayanagi Y, Sawa A, Tomyshev A, Lebedeva I, Kaleda V, Kirschner M, Hoschl C, Tomecek D, Skoch A, van Amelsvoort T, Bakker G, James A, Preda A, Weideman A, Stein DJ, Howells F, Uhlmann A, Temmingh H, López-Jaramillo C, Díaz-Zuluaga A, Fortea L, Martinez-Heras E, Solana E, Llufriu S, Jahanshad N, Thompson P, Turner J, van Erp T, ENIGMA Consortium collaborators. **Increased power by harmonizing structural MRI site differences with the ComBat batch adjustment method in ENIGMA.** *Neuroimage.* 218:116956. I.F.: 5.902

10. Fullana MA, Tortella-Feliu M, Fernández de la Cruz L, Chamorro J, Pérez-Vigil A, Ioannidis JPA, Solanes A, Guardiola M, Almodóvar C, Miranda-Olivos R, Ramella-Cravaro V, Vilar A, Reichenberg A, Mataix-Cols D, Vieta E, Fusar-Poli P, Fatjó-Vilas M, Radua J. **Risk and protective factors for anxiety and obsessive-compulsive disorders: an umbrella review of systematic reviews and meta-analyses.** *Psychological Medicine.* 50(8):1300-1315. I.F.: 5.811

11. Rabelo-Da-Ponte FD; Lima FM; Martinez-Aran A; Kapczinski F; Vieta E; Rosa AR; Kunz M; Czepielewski LS. **Data-driven cognitive phenotypes in subjects with bipolar disorder and their clinical markers of severity.** *Psychological Medicine.* 1-8. I.F.: 5.811

12. Ballesteros A, Sánchez Torres AM, López-Ilundáin J, Mezquida G, Lobo A, González-Pinto A, Pina-Camacho L, Corripio I, Vieta E, de la Serna E, Mané A, Bioque M, Moreno-Izco L, Espliego A, Lorente-Omeñaca R, Amoretti S, Bernardo M, Cuesta MJ, PEPs Group. **The longitudinal effect of antipsychotic burden on psychosocial functioning in first-episode psychosis patients: The role of verbal memory.** *Psychological Medicine.* 1-10. I.F.: 5.811

13. Amoretti S, Rosa AR, Mezquida G, Cabrera B, Ribeiro M, Molina M, Bioque M, Lobo A, González-Pinto A, Fraguas D, Corripio I, Vieta E, de la Serna E, Morro L, Garriga M, Torrent C, Cuesta MJ, Bernardo M, PEPs Group. **The impact of cognitive reserve, cognition and clinical symptoms on psychosocial functioning in first-episode psychoses.** *Psychological Medicine.* 1-12. I.F.: 5.811

14. Stefana A; Youngstrom EA; Chen J; Hinshaw S; Maxwell V; Michalak E; Vieta E. **The COVID-19 pandemic is a crisis and opportunity for bipolar disorder.** *Bipolar Disorders.* 22(6):641-643. I.F.: 5.410

15. Antonietta Furio M, Popovic D, Vieta E, Stukalin Y, Hagin M, Torrent C, Azorin JM, Angst J, Bowden CL, Mosolov S, Young AH, Perugi G, BRIDGE-II-Mix Study Group. **Characterization of rapid cycling bipolar patients presenting with major depressive episode within the BRIDGE-II-MIX study.** *Bipolar Disorders.* I.F.: 5.410

16. Mas S, Gassó P, Rodríguez N, Cabrera B, Mezquida G, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Bobes J, Usall J, Saiz-Ruiz J, Contreras F, Parellada E, Bernardo M, PEPs group. **Personalized medicine begins with the phenotype: identifying antipsychotic response phenotypes in a first-episode psychosis cohort**. *Acta Psychiatrica Scandinavica.* 141(6):541-552. I.F.: 5.362

17. Pacchiarotti I; Anmella G; Colomer L; Vieta E. **How to treat mania.** *Acta Psychiatrica Scandinavica.* 142(3):173-192. I.F.: 5.362

18. Corponi F, Anmella G, Pacchiarotti I, Samalin L, Verdolini N, Popovic D, Azorin JM, Angst J, Bowden CL, Mosolov S, Young AH, Perugi G, Vieta E, Murru A. **Deconstructing major depressive episodes across unipolar and bipolar depression by severity and duration: a cross-diagnostic cluster analysis on a large, international, observational study.** *Translational Psychiatry.* 10(1):241. I.F.: 5.280

19. Mariño Z, Rodríguez-Tajes S, Bartrés C, Nácar L, Lens S, Navinés R, Cavero M, Londoño MC, Sastre L, Pocurull A, Dafieno A, Martín-Santos R, Forns X. **Improvement of sexuality after hepatitis C cure with direct acting antivirals.** *Liver International.* 40(12):2972-2977. I.F.: 5.175

20. De Zwarte SMC; Brouwer RM; Agartz I; Alda M; Alonso-Lana S; Bearden CE; Bertolino A; Bonvino A; Bramon E; Buimer EEL; Cahn W; Canales-Rodríguez EJ; Cannon DM; Cannon TD; Caseras X; Castro-Fornieles J; Chen Q; Chung Y; De la Serna E; Del Mar Bonnin C; Demro C; Di Giorgio A; Doucet GE; Eker MC; Erk S; Fatjó-Vilas M; Fears SC; Foley SF; Frangou S; Fullerton JM; Glahn DC; Goghari VM; Goikolea JM; Goldman AL; Gonul AS; Gruber O; Hajek T; Hawkins EL; Heinz A; Hidiroglu Ongun C; Hillegers MHJ; Houenou J; Hulshoff Pol HE; Hultman CM; Ingvar M; Johansson V; Jönsson EG; Kane F; Kempton MJ; Koenis MMG; Kopecek M; Krämer B; Lawrie SM; Lenroot RK; Marcelis M; Mattay VS; McDonald C; Meyer-Lindenberg A; Michielse S; Mitchell PB; Moreno D; Murray RM; Mwangi B; Nabulsi L; Newport J; Olman CA; van Os J; Overs BJ; Ozerdem A; Pergola G; Picchioni MM; Piguet C; Pomarol-Clotet E; Radua J; Ramsay IS; Richter A; Roberts G; Salvador R; Saricicek Aydogan A; Sarró S; Schofield PR; Simsek EM; Simsek F; Soares JC; Sponheim SR; Sugranyes G; Toulopoulou T; Tronchin G; Vieta E; Walter H; Weinberger DR; Whalley HC; Wu MJ; Yalin N; Andreassen OA; Ching CRK; Thomopoulos SI; van Erp TGM; Jahanshad N; Thompson PM; Kahn RS; van Haren NEM. **Intelligence, educational attainment, and brain structure in those at familial high-risk for schizophrenia or bipolar disorder.** *Human Brain Mapping.* I.F.: 4.421

21. Haukvik UK, Gurholt TP, Nerland S, Elvsåshagen T, Akudjedu TN, Alda M, Alnaes D, Alonso-Lana S, Bauer J, Baune BT, Benedetti F, Berk M, Bettella F, Bøen E, Bonnín CM, Brambilla P, Canales-Rodríguez EJ, Cannon DM, Caseras X, Dandash O, Dannlowski U, Delvecchio G, Díaz-Zuluaga AM, van Erp TGM, Fatjó-Vilas M, Foley SF, Förster K, Fullerton JM, Goikolea JM, Grotegerd D, Gruber O, Haarman BCM, Haatveit B, Hajek T, Hallahan B, Harris M, Hawkins EL, Howells FM, Hülsmann C,

Jahanshad N, Jørgensen KN, Kircher T, Krämer B, Krug A, Kuplicki R, Lagerberg TV, Lancaster TM, Lenroot RK, Lonning V, López-Jaramillo C, Malt UF, McDonald C, McIntosh AM, McPhilemy G, van der Meer D, Melle I, Melloni EMT, Mitchell PB, Nabulsi L, Nenadić I, Oertel V, Oldani L, Opel N, Otaduy MCG, Overs BJ, Pineda-Zapata JA, Pomarol-Clotet E, Radua J, Rauer L, Redlich R, Repple J, Rive MM, Roberts G, Ruhe HG, Salminen LE, Salvador R, Sarró S, Savitz J, Schene AH, Sim K, Soeiro-de-Souza MG, Stäblein M, Stein DJ, Stein F, Tamnes CK, Temmingh HS, Thomopoulos SI, Veltman DJ, Vieta E, Waltemate L, Westlye LT, Whalley HC, Sämann PG, Thompson PM, Ching CRK, Andreassen OA, Agartz I, ENIGMA Bipolar Disorder Working Group. **In vivo hippocampal subfield volumes in bipolar disorder-A mega-analysis from The Enhancing Neuro Imaging Genetics through Meta-Analysis Bipolar Disorder Working Group.** *Human Brain Mapping.* I.F.: 4.421

22. Donadon MF; Martin-Santos R; L .Osório F. **Oxytocin effects on the cognition of women with postpartum depression: A randomized, placebo-controlled clinical trial.** *Progress in Neuro-Psychopharmacology & Biological Psychiatry.* 110098. I.F.: 4.361

23. De la Serna E, Camprodon-Boadas P, Ilzarbe D, Sugranyes G, Baeza I, Moreno D, Díaz-Caneja CM, Rosa-Justicia M, Llorente C, Ayora M, Borras R, Torrent C, Bernardo M, Castro-Fornieles J. **Neuropsychological development in the child and adolescent offspring of patients diagnosed with schizophrenia or bipolar disorder: A two-year follow-up comparative study.** *Progress in Neuro-Psychopharmacology & Biological Psychiatry.* 103:109972. I.F.: 4.361

24. Madre M, Canales-Rodríguez EJ, Fuentes-Claramonte P, Alonso-Lana S, Salgado-Pineda P, Guerrero-Pedraza A, Moro N, Bosque C, Gomar JJ, Ortíz-Gil J, Goikolea JM, Bonnin CM, Vieta E, Sarró S, Maristany T, McKenna PJ, Salvador R, Pomarol-Clotet E. **Structural abnormality in schizophrenia versus bipolar disorder: A whole brain cortical thickness, surface area, volume and gyrification analyses.** *Neuroimage-Clinical.* 25:102131. I.F.: 4.350

25. Fountoulakis KN, Yatham LN, Grunze H, Vieta E, Young AH, Blier P, Tohen M, Kasper S, Moeller HJ. **The CINP guidelines on the definition and the evidence-based interventions for treatment-resistant Bipolar disorder.** *International Journal of Neuropsychopharmacology.* 23(4):230-256. I.F.: 4.333

26. Grau-Corral I; Jansà M; Gascon P; Lozano-Rubí R; Pantoja P; Roca D; Aragunde Miguens V; Hidalgo-Mazzei D; Escarrabill J. **Mobile Health Projects in a High-Complexity Reference Hospital: Case Study.** *Jmir Mhealth and Uhealth.* 8(1):e16247. I.F.: 4.313

27. Salagre E, Grande I, Vieta E, Mezquida G, Cuesta MJ, Moreno C, Bioque M, Lobo A, González-Pinto A, Moreno DM, Corripio I, Verdolini N, Castro-Fornieles J, Mané A, Pinzon-Espinosa J, Bonnin CDM, Bernardo M, PEPs Group. **Predictors of Bipolar Disorder Versus Schizophrenia Diagnosis in a Multicenter First Psychotic Episode Cohort: Baseline Characterization and a 12-Month Follow-Up Analysis.** *Journal of Clinical Psychiatry.* 81(6):19m12996. I.F.: 4.204

28. Chye Y; Mackey S; Gutman BA; Ching CRK; Batalla A; Blaine S; Brooks S; Caparelli EC; Cousijn J; Dagher A; Foxe JJ; Goudriaan AE; Hester R; Hutchison K; Jahanshad N; Kaag AM; Korucuoglu O; Li CR; London ED; Lorenzetti V; Luijten M; Martin-Santos R; Meda SA; Momenan R; Morales A; Orr C; Paulus MP; Pearlson G; Reneman L; Schmaal L; Sinha R; Solowij N; Stein DJ; Stein EA; Tang D; Uhlmann A; van Holst R; Veltman DJ; Verdejo-Garcia A; Wiers RW; Yücel M; Thompson PM; Conrod P; Garavan H. **Subcortical surface morphometry in substance dependence: An ENIGMA addiction working group study.** *Addiction Biology.* 25(6):e12830. I.F.: 4.121

29. Anmella, Gerard; Gil-Badenes, Joaquin; Pacchiarotti, Isabella; Verdolini, Norma; Aedo, Alberto; Angst, Jules; Azorin, Jean-Michel; Bowden, Charles L; Mosolov, Sergey; Samalin, Ludovic; Popovic, Dina; Young, Allan H; Perugi, Giulio; Vieta, Eduard; Murru, Andrea. **"Do depressive and manic symptoms differentially impact on functioning in acute depression? Results from a large, cross-sectional study".** *Journal of Affective Disorders.* 261:30-39. I.F.: 3.892

30. Solé B, Verdolini N, Amoretti S, Montejo L, Rosa AR, Hogg B, Garcia-Rizo C, Mezquida G, Bernardo M, Martinez-Aran A, Vieta E, Torrent C. **Effects of the COVID-19 pandemic and lockdown in Spain: comparison between community controls and patients with a psychiatric disorder.** *Journal of Affective Disorders.* 281:13-23. I.F.: 3.892

31. López-Villarreal A; Sánchez-Morla EM; Jiménez-López E; Martínez-Vizcaíno V; Aparicio AI; Mateo-Sotos J; Rodriguez-Jimenez R; Vieta E; Santos JL. **Predictive factors of functional outcome in patients with bipolar I disorder: a five-year follow-up**. *Journal of Affective Disorders.* 272:249-258. I.F.: 3.892

32. Perez, Victor; Elices, Matilde; Prat, Bibiana; Vieta, Eduard; Blanch, Jordi; Alonso, Jordi; Pifarre, Josep; Mortier, Philippe; Isabel Cebria, Ana; Campillo, Maria T; Vila-Abad, Montserrat; Colom, Francesc; Dolz, Montserrat; Molina, Cristina; Palao, Diego J. **The Catalonia Suicide Risk Code: A secondary prevention program for individuals at risk of suicide.** *Journal of Affective Disorders.* 268:201-205. I.F.: 3.892

33. Gil-Badenes J, Valero R, Valentí M, Macau E, Bertran MJ, Claver G, Bioque M, Baeza I, Bastidas Salvadó A, Lombraña Mencia M, Pacchiarotti I, Bernardo M, Vieta E. **Electroconvulsive therapy protocol adaptation during the COVID-19 pandemic.** *Journal of Affective Disorders.* 276:241-248. I.F.: 3.892

34. Tondo L; Baldessarini RJ; Barbuti M; Colombini P; Angst J; Azorin JM; Bowden CL; Mosolov S; Young AH; Vieta E; Perugi G. **Factors associated with single versus multiple suicide attempts in depressive disorders.** *Journal of Affective Disorders.* 277:306-312. I.F.: 3.892

35. Antolín-Concha D; Lähteenvuo M; Vattulainen P; Tanskanen A; Taipale H; Vieta E; Tiihonen J. **Suicide mortality and use of psychotropic drugs in patients hospitalized due to bipolar disorder: A Finnish nationwide cohort study.** *Journal of Affective Disorders.* 277:885-892. I.F.: 3.892

36. Fornaro, Michele; Carvalho, Andre F; Fusco, Andrea; Anastasia, Annalisa; Solmi, Marco; Berk, Michael; Sim, Kang; Vieta, Eduard; de Bartolomeis, Andrea. **The concept and management of acute episodes of treatment-resistant bipolar disorder: a systematic review and exploratory meta-analysis of randomized controlled trials.** *Journal of Affective Disorders.* 276:970-983. I.F.: 3.892

37. Reinares M; Pacchiarotti I; Solé B; García-Estela A; Rosa A; Bonnín CM; De Dios C; Torres I; Varo C; Montejo L; Valls È; Mur-Mila E; Hidalgo-Mazzei D; Jiménez E; Torrent C; Goikolea JM; Martínez-Arán A;

Pérez-Sola V; Vieta E; Colom F. **A prospective longitudinal study searching for predictors of response to group psychoeducation in bipolar disorder.** *Journal of Affective Disorders.* 274:1113-1121. I.F.: 3.892

38. McAllister-Williams RH; Arango C; Blier P; Demyttenaere K; Falkai P; Gorwood P; Hopwood M; Javed A; Kasper S; Malhi GS; Soares JC; Vieta E; Young AH; Papadopoulos A; Rush AJ. **The identification, assessment and management of difficult-to-treat depression: An international consensus statement.** *Journal of Affective Disorders.* 267:264-282. I.F.: 3.892

39. Mosheva M, Serretti A, Stukalin Y, Fabbri C, Hagin M, Horev S, Mantovani V, Bin S, Mattiaccio A, Nivoli A, Vieta E, Popovic D. **Association between CANCA1C gene rs1034936 polymorphism and alcohol dependence in bipolar disorder.** *Journal of Affective Disorders.* 261:181-186. I.F.: 3.892

40. Andrade-González N; Hernández-Gómez A; Álvarez-Sesmero S; Gutiérrez-Rojas L; Vieta E; Reinares M; Lahera G. **The influence of the working alliance on the treatment and outcomes of patients with bipolar disorder: A systematic review.** *Journal of Affective Disorders.* 260:263-271. I.F.: 3.892

41. Gómez-Benito J; Abdelhamid G; Pino O; Rojo E; Vieta E; Guilera G. **Disability in bipolar I disorder: Application of Mokken scaling analysis and the graded response model to the World Health Organization Disability Assessment Schedule 2.0.** *Journal of Affective Disorders.* 260:506-513. I.F.: 3.892

42. Corponi F; Anmella G; Verdolini N; Pacchiarotti I; Samalin L; Popovic D; Azorin JM; Angst J; Bowden CL; Mosolov S; Young AH; Perugi G; Vieta E; Murru A. **Symptom networks in acute depression across bipolar and major depressive disorders: A network analysis on a large, international, observational study.** *European Neuropsychopharmacology.* 35:49-60. I.F.: 3.853

43. Solé E; Roca A; Torres A; Hernández AS; Fernández N; Díaz CN; Vieta E; Garcia-Esteve L. **Obstetric complications in bipolar disorder: Psychiatric factors and the risk of caesarean section.** *European Neuropsychopharmacology.* 32:47-55. I.F.: 3.853

44. Manchia M; Vieta E; Smeland OB; Altimus C; Bechdolf A; Bellivier F; Bergink V; Fagiolini A; Geddes JR; Hajek T; Henry C; Kupka R; Lagerberg TV; Licht RW; Martinez-Cengotitabengoa M; Morken G; Nielsen RE; Pinto AG; Reif A; Rietschel M; Ritter P; Schulze TG; Scott J; Severus E; Yildiz A; Kessing LV; Bauer M; Goodwin GM; Andreassen OA; European College of Neuropsychopharmacology (ECNP) Bipolar Disorders Network. **Translating big data to better treatment in bipolar disorder - a manifesto for coordinated action.** *European Neuropsychopharmacology.* 36:121-136. I.F.: 3.853

45. Jacobs A; Hagin M; Shugol M; Shomron N; Pillar N; Fañanás L; Serretti A; Vieta E; Popovic D. **The black sheep of the family-whole-exome sequencing in family of lithium response discordant bipolar monozygotic twins.** *European Neuropsychopharmacology.* 34:19-27. I.F.: 3.853

46. Pujol N, Mané A, Bergé D, Mezquida G, Amoretti S, Pérez L, González-Pinto A, Barcones F, Cuesta MJ, Sánchez-Tomico G, Vieta E, Castro-Fornieles J, Bernardo M, Parellada M, PEPs GROUP. **Influence of BDNF and MTHFR polymorphisms on hippocampal volume in first-episode psychosis.** *Schizophrenia Research.* 223:345-352. I.F.: 3.759

47. Salvador R; Verdolini N; Garcia-Ruiz B; Jiménez E; Sarró S; Vilella E; Vieta E; Canales-Rodríguez EJ; Pomarol-Clotet E; Voineskos AN. **Multivariate Brain Functional Connectivity Through Regularized Estimators.** *Frontiers in Neuroscience.* 14:569540. I.F.: 3.707

48. Ruiz, Jose; Gutierrez, Fernando; Maria Peri, Josep; Aluja, Anton; Bailles, Eva; Gutierrez-Zotes, Alfonso; Vall, Gemma; Edo Villamon, Silvia; Melia de Alba, Amanda; Ruiperez Rodriguez, Maria Angeles. **Mean-Level Change in Pathological Personality Dimensions Over 4 Decades in Clinical and Community Samples: A Cross-Sectional Study.** *Personality Disorders-Theory Research and Treatment.* 11(6):409-417. I.F.: 3.421

49. Andreu A; Jimenez A; Vidal J; Ibarzabal A; De Hollanda A; Flores L; Cañizares S; Molero J; Moizé V. **Bariatric Support Groups Predicts Long-term Weight Loss.** *Obesity Surgery.* 30(6):2118-2123. I.F.: 3.412

50. Kato, Tadafumi; Ishigooka, Jun; Miyajima, Mari; Watabe, Kei; Fujimori, Tomohiro; Masuda, Takahiro; Higuchi, Teruhiko; Vieta, Eduard. **Double-blind, placebo-controlledstudy of lurasidone monotherapy for the treatment of bipolar I depression.** *Psychiatry and Clinical Neurosciences.* 74(12):635-644. I.F.: 3.351

51. López-Villarreal A; Sánchez-Morla E; Jiménez-López E; Martínez-Vizcaíno V; Aparicio A; Mateo-Sotos J; Rodriguez-Jimenez R; Vieta E; Santos J. **Progression of the functional deficit in a group of patients with bipolar disorder: a cluster analysis based on longitudinal data.** *European Archives of Psychiatry and Clinical Neuroscience.* 270(8):947-957. I.F.: 3.288

52. Soda T, McLoughlin DM, Clark SR, Oltedal L, Kessler U, Haavik J, Bousman C, Smith DJ, Bioque M, Clements CC, Loo C, Vila-Rodriguez F, Minelli A, Mickey BJ, Milev R, Docherty AR, Langan Martin J, Achtyes ED, Arolt V, Redlich R, Dannlowski U, Cardoner N, Clare E, Craddock N, Di Florio A, Dmitrzak-Weglarz M, Forty L, Gordon-Smith K, Husain M, Ingram WM, Jones L, Jones I, Juruena M, Kirov G, Landén M, Müller DJ, Nordensköld A, Pålsson E, Paul M, Permoda A, Pliszka B, Rea J, Schubert KO, Sonnen JA, Soria V, Stageman W, Takamiya A, Urretavizcaya M, Watson S, Zavorotny M, Young AH, Vieta E, Rybakowski JK, Gennarelli M, Zandi PP, Sullivan PF, Baune BT. **International Consortium on the Genetics of Electroconvulsive Therapy and Severe Depressive Disorders (Gen-ECT-ic).** *European Archives of Psychiatry and Clinical Neuroscience.* 270(7):921-932. I.F.: 3.288

53. Gassó P, Arnaiz JA, Mas S, Lafuente A, Bioque M, Cuesta MJ, Díaz-Caneja CM, García C, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Rodríguez N, Boloc D, Saiz-Ruiz J, Bernardo M, PEPs Group. **Association study of candidate genes with obesity and metabolic traits in antipsychotic-treated patients with first-episode psychosis over a 2-year period.** *Journal of Psychopharmacology.* 34(5):514-523. I.F.: 3.121

54. Orhan M; Korten N; Kupka R; van Oppen P; Stek M; Vieta E; Schouws S; van Ballegooijen W; Dols A. **Reliability and validity of the functioning assessment short test for older adults with bipolar disorder (FAST-O).** *International Journal of Bipolar Disorders.* 8(1):28. I.F.: 2.966

55. Brehaut E, Neupane D, Levis B, Wu Y, Sun Y, Krishnan A, He C, Bhandari PM, Negeri Z,

Riehm KE, Rice DB, Azar M, Yan XW, Imran M, Chiovitti MJ, Saadat N, Cuijpers P, Ioannidis JPA, Markham S, Patten SB, Ziegelstein RC, Henry M, Ismail Z, Loiselle CG, Mitchell ND, Tonelli M, Boruff JT, Kloda LA, Beraldi A, Braeken APBM, Carter G, Clover K, Conroy RM, Cukor D, da Rocha E Silva CE, De Souza J, Downing MG, Feinstein A, Ferentinos PP, Fischer FH, Flint AJ, Fujimori M, Gallagher P, Goebel S, Jetté N, Julião M, Keller M, Kjærgaard M, Love AW, Löwe B, Martin-Santos R, Michopoulos I, Navines R, O'Rourke SJ, Öztürk A, Pintor L, Ponsford JL, Rooney AG, Sánchez-González R, Schwarzbold ML, Sharpe M, Simard S, Singer S, Stone J, Tung KY, Turner A, Walker J, Walterfang M, White J, Benedetti A, Thombs BD. **Depression prevalence using the HADS-D compared to SCID major depression classification: An individual participant data meta-analysis.** *Journal of Psychosomatic Research.* 139:110256. I.F.: 2.860

56. Wu Y; Levis B; Sun Y; Krishnan A; He C; Riehm KE; Rice DB; Azar M; Yan XW; Neupane D; Bhandari PM; Imran M; Chiovitti MJ; Saadat N; Boruff JT; Cuijpers P; Gilbody S; McMillan D; Ioannidis JPA; Kloda LA; Patten SB; Shrier I; Ziegelstein RC; Henry M; Ismail Z; Loiselle CG; Mitchell ND; Tonelli M; Al-Adawi S; Beraldi A; Braeken APBM; Büel-Drabe N; Bunevicius A; Carter G; Chen CK; Cheung G; Clover K; Conroy RM; Cukor D; da Rocha e Silva CE; Wu Y; Levis B; Sun Y; Krishnan A; He C; Riehm KE; Rice DB; Azar M; Yan XW; Neupane D; Bhandari PM; Imran M; Chiovitti MJ; Saadat N; Boruff JT; Cuijpers P; Gilbody S; McMillan D; Ioannidis JPA; Kloda LA; Patten SB; Shrier I; Ziegelstein RC; Henry M; Ismail Z; Loiselle CG; Mitchell ND; Tonelli M; Al-Adawi S; Beraldi A; Braeken APBM; Büel-Drabe N; Bunevicius A; Carter G; Chen CK; Cheung G; Clover K; Conroy RM; Cukor D; da Rocha e Silva CE; Wu Y; Levis B; Sun Y; Krishnan A; He C; Riehm KE; Rice DB; Azar M; Yan XW; Neupane D; Bhandari PM; Imran M; Chiovitti MJ; Saadat N; Boruff JT; Cuijpers P; Gilbody S; McMillan D; Ioannidis JPA; Kloda LA. **Probability of major depression diagnostic classification based on the SCID, CIDI and MINI diagnostic interviews controlling for Hospital Anxiety and Depression Scale - Depression subscale scores: An individual participant data meta-analysis of 73 primary studies.** *Journal of Psychosomatic Research.* 129:109892. I.F.: 2.860

57. Guilera, Georgina; Pino, Oscar; Barrios, Maite; Rojo, Emilio; Vieta, Eduard; Gomez-Benito, Juana. **Towards an ICF Core Set for functioning assessment in severe mental disorders: Commonalities in bipolar disorder, depression and schizophrenia.** *Psicothema.* 32(1):7-14. I.F.: 2.632

58. Bioque M; Mac-Dowell KS; Font C; Meseguer A; Macau E; Garcia-Orellana M; Valentí M; Leza JC; Bernardo M. **Acute effects of a session of electroconvulsive therapy on brain-derived neurotrophic factor plasma levels.** *Revista de Psiquiatría y Salud Mental.* S1888-9891(20):30069. I.F.: 2.630

59. Lahera G; Cid J; Gonzalez-Pinto A; Cabrera A; Mariner C; Vieta E; Arango C; Crespo-Facorro B. **Needs of people with psychosis and their caregivers: «In their own voice»**. *Revista de Psiquiatría y Salud Mental.* 13(2):80-89. I.F.: 2.630

60. Valls È, Sánchez-Moreno J, Bonnín CM, Solé B, Prime-Tous M, Torres I, Brat M, Gavin P, Morilla I, Montejo L, Jiménez E, Varo C, Torrent C, Hidalgo-Mazzei D, Vieta E, Martínez-Arán A, Reinares M. **Effects of an integrative approach to bipolar disorders combining psychoeducation, mindfulness-based cognitive therapy and functional remediation: Study protocol for a randomized controlled trial**. *Revista de Psiquiatría y Salud Mental.* 13(3):165-173. I.F.: 2.630

61. Gelabert E; Gutierrez-Zotes A; Navines R; Labad J; Puyané M; Donadon MF; Guillamat R; Mayoral F; Jover M; Canellas F; Gratacós M; Guitart M; Gornemann I; Roca M; Costas J; Ivorra JL; Subirà S; de Diego Y; Osorio FL; Garcia-Esteve L; Sanjuan J; Vilella E; Martin-Santos R. **The role of personality dimensions, depressive symptoms and other psychosocial variables in predicting postpartum suicidal ideation: a cohort study.** *Archives of Womens Mental Health.* 23(4):585-593. I.F.: 2.500

62. Gutiérrez-Zotes A; Díaz-Peña R; Costas J; Martorell L; Gelabert E; Sans T; Navinés R; Albacar G; Ímaz ML; García-Esteve L; Sanjuan J; Martín-Santos R; Carracedo A; Vilella E. **Interaction between the functional SNP rs2070951 in NR3C2 gene and high levels of plasma corticotropin-releasing hormone associates to postpartum depression.** *Archives of Womens Mental Health.* 23(3):413-420. I.F.: 2.500

63. Gutiérrez F, Ruiz J, Peri JM, Gárriz M, Vall G, Cavero M. **Toward an Integrated Model of Pathological Personality Traits: Common Hierarchical Structure of the PID-5 and the DAPP-BQ.** *Journal of Personality Disorders.* 1-S18. I.F.: 2.440

64. Pacchiarotti I, Anmella G, Fico G, Verdolini N, Vieta E . **A psychiatrist's perspective from a COVID-19 epicentre: a personal account.** *Bjpsych Open.* 6(5):e108. I.F.: 2.286

65. Calabro, Marco; Porcelli, Stefano; Crisafulli, Concetta; Albani, Diego; Kasper, Siegfried; Zohar, Joseph; Souery, Daniel; Montgomery, Stuart; Mantovani, Vilma; Mendlewicz, Julien; Bonassi, Stefano; Vieta, Eduard; Frustaci, Alessandra; Ducci, Giuseppe; Landi, Stefano; Boccia, Stefania; Bellomo, Antonello; Di Nicola, Marco; Janiri, Luigi; Colombo, Roberto; Benedetti, Francesco; Mandelli, Laura; Fabbri, Chiara; Serretti, Alessandro. **Genetic variants associated with psychotic symptoms across psychiatric disorders.** *Neuroscience Letters.* 720:134754. I.F.: 2.274

66. Castellano, Sabrina; Torrent, Carla; Petralia, Maria Cristina; Godos, Justyna; Cantarella, Rita Anna; Ventimiglia, Andrea; De Vivo, Simona; Platania, Silvia; Guarnera, Maria; Pirrone, Concetta; Drago, Filippo; Vieta, Eduard; Di Nuovo, Santo F; Popovic, Dina; Caraci, Filippo. **Clinical and Neurocognitive Predictors of Functional Outcome in Depressed Patients with Partial Response to Treatment: One Year Follow-Up Study.** *Neuropsychiatric Disease and Treatment.* 16:589-595. I.F.: 2.157

67. Shahin I; Del Mar Bonnin C; Saleh E; Helmy K; Youssef UM; Vieta E. **Validity of the Shahin mixed depression scale: A self-rated instrument designed to measure the non-DSM mixed features in depression.** *Neuropsychiatric Disease and Treatment.* 16:2209-2219. I.F.: 2.157

68. Toyoshima K; Toyomaki A; Miyazaki A; Martinez-Aran A; Vieta E; Kusumi I. **Associations between cognitive impairment and P300 mean amplitudes in individuals with bipolar disorder in remission.** *Psychiatry Research.* 290:113125. I.F.: 2.118

69. Egmond E, Mariño Z, Navines R, Oriolo G, Pla A, Bartres C, Lens S, Forns X, Martin-Santos R. **Incidence of depression in patients with hepatitis C treated with direct-acting antivirals.** *Revista Brasileira de Psiquiatría.* 42(1):72-76. I.F.: 1.904

70. Okkels N, Jensen LG, Skovshoved LC, Arendt R, Blicher AB, Vieta E, Straszek S. **Lighting as an aid for recovery in hospitalized psychiatric patients: a randomized controlled effectiveness trial.** *Nordic Journal of Psychiatry*. 74(2):105-114. I.F.: 1.780

71. Yatham LN; Vieta E; Earley W. **Evaluation of cariprazine in the treatment of bipolar I and II depression: a randomized, double-blind, placebo-controlled, phase 2 trial.** *International Clinical Psychopharmacology*. 35(3):147-156. I.F.: 1.742

72. Bach B; Kerber A; Aluja A; Bastiaens T; Keeley JW; Claes L; Fossati A; Gutierrez F; Oliveira SES; Pires R; Riegel KD; Rolland JP; Roskam I; Sellbom M; Somma A; Spanemberg L; Strus W; Thimm JC; Wright AGC; Zimmermann J. **International Assessment of DSM-5 and ICD-11 Personality Disorder Traits: Toward a Common Nosology in DSM-5.1.** *Psychopathology*. 53(3-4):179-188. I.F.: 1.659

73. Calabrò M, Mandelli L, Crisafulli C, Porcelli S, Albani D, Politis A, Papadimitriou GN, Di Nicola M, Janiri L, Colombo R, Martinotti G, Bellomo A, Vieta E, Bonassi S, Frustaci A, Ducci G, Landi S, Boccia S, Serretti A. **Psychiatric disorders and SLC6A4 gene variants: possible effects on alcohol dependence and alzheimer's disease.** *Molecular Biology Reports*. 47(1):191-200. I.F.: 1.402

74. Calabro, Marco; Mandelli, Laura; Crisafulli, Concetta; Porcelli, Stefano; Albani, Diego; Politis, Antonis; Papadimitriou, George N; Di Nicola, Marco; Janiri, Luigi; Colombo, Roberto; Martinotti, Giovanni; Bellomo, Antonello; Vieta, Eduard; Bonassi, Stefano; Frustaci, Alessandra; Ducci, Giuseppe; Landi, Stefano; Boccia, Stefania; Serretti, Alessandro. **Psychiatric disorders and SLC6A4 gene variants: possible effects on alcohol dependence and alzheimer's disease.** *Molecular Biology Reports*. 47(3):2415-2415. I.F.: 1.402

Review / I.F.: 192.938

1. Carvalho AF; Firth J; Vieta E. **Bipolar Disorder.** *New England Journal of Medicine*. 383(1):58-66. I.F.: 74.699

2. Moreno C, Wykes T, Galderisi S, Nordentoft M, Crossley N, Jones N, Cannon M, Correll CU, Byrne L, Carr S, Chen EYH, Gorwood P, Johnson S, Kärkkäinen H, Krystal JH, Lee J, Lieberman J, López-Jaramillo C, Männikkö M, Phillips MR, Uchida H, Vieta E, Vita A, Arango C. **How mental health care should change as a consequence of the COVID-19 pandemic.** *Lancet Psychiatry*. 7(9):813-824. I.F.: 16.209

3. Almeida HS, Mitjans M, Arias B, Vieta E, Ríos J, Benabarre A. **Genetic differences between bipolar disorder subtypes: A systematic review focused in bipolar disorder type Ii.** *Neuroscience and Biobehavioral Reviews*. 118:623-630. I.F.: 8.329

4. Fico G, Anmella G, Pacchiarotti I, Verdolini N, Sagué-Vilavella M, Corponi F, Manchia M, Vieta E, Murru A. **The biology of aggressive behavior in bipolar disorder: A systematic review.** *Neuroscience and Biobehavioral Reviews*. 119:9-20. I.F.: 8.329

5. Fullana MA, Abramovitch A, Via E, López-Sola C, Goldberg X, Reina N, Fortea L, Solanes A, Buckley MJ, Ramella-Cravaro V, Carvalho AF, Tortella-Feliu M, Vieta E, Soriano-Mas C, Lázaro L, Stein DJ, Fernández de la Cruz L, Mataix-Cols D, Radua J. **Diagnostic biomarkers for obsessive-compulsive disorder: A reasonable quest or ignis fatuus?** *Neuroscience and Biobehavioral Reviews*. 118:504-513. I.F.: 8.329

6. Kloiber S; Rosenblat JD; Husain MI; Ortiz A; Berk M; Quevedo J; Vieta E; Maes M; Birmaher B; Soares JC; Carvalho AF. **Neurodevelopmental pathways in bipolar disorder.** *Neuroscience and Biobehavioral Reviews*. 112:213-226. I.F.: 8.329

7. L Del Matto, M Muscas, A Murru, N Verdolini, G Anmella, G Fico, F Corponi, A F Carvalho, L Samalin, B Carpiniello, A Fagiolini, E Vieta, I Pacchiarotti. **Lithium and suicide prevention in mood disorders and in the general population: A systematic review.** *Neuroscience and Biobehavioral Reviews*. 116:142-153. I.F.: 8.329

8. Fornaro M, Solmi M, Stubbs B, Veronese N, Monaco F, Novello S, Fusco A, Anastasia A, De Berardis D, Carvalho AF, de Bartolomeis A, Vieta E. **Prevalence and correlates of major depressive disorder, bipolar disorder and schizophrenia among nursing home residents without dementia: systematic review and meta-analysis.** *British Journal of Psychiatry*. 216(1):6-15. I.F.: 7.850

9. Memon A; Rogers I; Fitzsimmons SMDD; Carter B; Strawbridge R; Hidalgo-Mazzei D; Young AH. **Association between naturally occurring lithium in drinking water and suicide rates: systematic review and meta-analysis of ecological studies.** *British Journal of Psychiatry*. 217(6):667-678. I.F.: 7.850

10. Carvalho AF; Solmi M; Sanches M; Machado MO; Stubbs B; Ajnakina O; Sherman C; Sun YR; Liu CS; Brunoni AR; Pigato G; Fernandes BS; Bortolato B; Husain MI; Dragioti E; Firth J; Cosco TD; Maes M; Berk M; Lanctôt KL; Vieta E; Pizzagalli DA; Smith L; Fusar-Poli P; Kurdyak PA; Fornaro M; Rehm J; Herrmann N. **Evidence-based umbrella review of 162 peripheral biomarkers for major mental disorders.** *Translational Psychiatry*. 10(1):152. I.F.: 5.280

11. Bassetti M; Almirante B; Giamarellos-Bourboulis EJ; Gournellis R; Grande I; Marini MG; Balestrieri M. **The interplay between acute bacterial skin and skin structure infections and depression: a vicious circle of major clinical importance.** *Current Opinion in Infectious Diseases*. 33(2):155-165. I.F.: 4.577

12. Ching CRK; Hibar DP; Gurholt TP; Nunes A; Thomopoulos SI; Abé C; Agartz I; Brouwer RM; Cannon DM; de Zwarte SMC; Eyler LT; Favre P; Hajek T; Haukvik UK; Houenou J; Landén M; Lett TA; McDonald C; Nabulsi L; Patel Y; Pauling ME; Paus T; Radua J; Soeiro-de-Souza MG; Tronchin G; van Haren NEM; Vieta E; Walter H; Zeng LL; Alda M; Almeida J; Alnaes D; Alonso-Lana S; Altimus C; Bauer M; Baune BT; Bearden CE; Bellani M; Benedetti F; Berk M; Bilderbeck AC; Blumberg HP; Bøen E; Bollettini I; Del Mar Bonnin C; Brambilla P; Canales-Rodríguez EJ; Caseras X; Dandash O; Dannlowski U; Delvecchio G; Díaz-Zuluaga AM; Dima D; Duchesnay É; Elvsåshagen T; Fears SC; Frangou S; Fullerton JM; Glahn DC; Goikolea JM; Green MJ; Grotegerd D; Gruber O; Haarman BCM; Henry C; Howells FM; Ives-Deliperi V; Jansen A; Kircher TTJ; Knöchel C; Kramer B; Lafer B; López-Jaramillo C; Machado-Vieira R; MacIntosh BJ; Melloni EMT; Mitchell PB; Nenadic I; Nery F; Nugent AC; Oertel V; Ophoff RA; Ota M; Overs BJ; Pham DL; Phillips ML; Pineda-Zapata JA; Poletti S; Polosan M; Pomarol-Clotet E; Pouchon A; Quidé Y; Rive MM; Roberts G; Ruhe HG; Salvador R; Sarró S; Satterthwaite TD; Schene AH; Sim K; Soares JC; Stäblein M; Stein DJ; Tamnes CK; Thomaidis GV; Upegui CV; Veltman DJ; Wessa M; Westlye LT; Whalley HC; Wolf DH; Wu MJ; Yatham LN;

Zarate CA; Thompson PM; Andreassen OA; ENIGMA Bipolar Disorder Working Group. **What we learn about bipolar disorder from large-scale neuroimaging: Findings and future directions from the ENIGMA Bipolar Disorder Working Group.** *Human Brain Mapping.* I.F.: 4.421

13. Ehrenreich H; Weissenborn K; Begemann M; Busch M; Vieta E; Miskowiak KW. **Erythropoietin as candidate for supportive treatment of severe COVID-19.** *Molecular Medicine.* 26(1):58. I.F.: 4.096

14. Solmi M; Bodini L; Cocozza S; Seeman MV; Vieta E; Dragioti E; Carvalho AF; Fusar-Poli P. **Aripiprazole monotherapy as transdiagnostic intervention for the treatment of mental disorders: An umbrella review according to TRANSD criteria.** *European Neuropsychopharmacology.* 41:16-27. I.F.: 3.853

15. Salazar de Pablo G; De Micheli A; Nieman DH; Correll CU; Kessing LV; Pfennig A; Bechdolf A; Borgwardt S; Arango C; van Amelsvoort T; Vieta E; Solmi M; Oliver D; Catalan A; Verdino V; Di Maggio L; Bonoldi I; Vaquerizo-Serrano J; Baccaredda Boy O; Provenzani U; Ruzzi F; Calorio F; Nosari G; Di Marco B; Famularo I; Molteni S; Filosi E; Mensi M; Balottin U; Politi P; Shin JI; Fusar-Poli P. **Universal and selective interventions to promote good mental health in young people: Systematic review and meta-analysis.** *European Neuropsychopharmacology.* 41:28-39. I.F.: 3.853

16. Krol, Fas Jacob; Hagin, Michal; Vieta, Eduard; Harazi, Rephael; Lotan, Amit; Strous, Rael D; Lerer, Bernard; Popovic, Dina. **Placebo-To be or not to be? Are there really alternatives to placebo-controlled trials?** *European Neuropsychopharmacology.* 32:1-11. I.F.: 3.853

17. Silva Ribeiro J, Pereira D, Salagre E, Coroa M, Santos Oliveira P, Santos V, Madeira N, Grande I, Vieta E. **Risk Calculators in Bipolar Disorder: A Systematic Review.** *Brain Sciences.* 10(8):525. I.F.: 3.332

18. Murru A; Manchia M; Hajek T; Nielsen RE; Rybakowski JK; Sani G; Schulze TG; Tondo L; Bauer M. **Lithium's antiviral effects: a potential drug for CoViD-19 disease?** *International Journal of Bipolar Disorders.* 8(1):21. I.F.: 2.966

19. Rey Souto D; Pinzón Espinosa J; Vieta E; Benabarre Hernández A. **Clozapine in patients with schizoaffective disorder: A systematic review.** *Revista de Psiquiatría y Salud Mental.* S1888-9891(20):30059-8. I.F.: 2.630

20. Pacchiarotti I; Kotzalidis GD; Murru A; Mazzarini L; Rapinesi C; Valentí M; Anmella G; Gomes-da-Costa S; Gimenez A; Llach C; Perugi G; Vieta E; Verdolini N. **Mixed Features in Depression: The Unmet Needs of Diagnostic and Statistical Manual of Mental Disorders Fifth Edition.** *Psychiatric Clinics of North America.* 43(1):59-68. I.F.: 2.178

21. Colomer L, Anmella G, Vieta E, Grande I. **Physical health in affective disorders: a narrative review of the literature.** *Revista de Psiquiatría y Salud Mental.* I.F.: 1.904

22. Hidalgo-Mazzei D; Llach C; Vieta E. **mHealth in affective disorders: hype or hope? A focused narrative review.** *International Clinical Psychopharmacology.* 35(2):61-68. I.F.: 1.742

Letters / I.F.: 42.796

1. Berk M; Vieta E; Dean OM. **Anti-inflammatory treatment of bipolar depression: promise and disappointment.** *Lancet Psychiatry.* 7(6):467-468. I.F.: 16.209

2. Solé B, Vieta E. **What else is needed for a full functional recovery in bipolar disorder?** *Bipolar Disorders.* 22(4):411-412. I.F.: 5.410

3. Garriga M; Agasi I; Fedida E; Pinzón-Espinosa J; Vazquez M; Pacchiarotti I; Vieta E. **The role of Mental Health Home Hospitalization Care during the COVID-19 pandemic.** *Acta Psychiatrica Scandinavica.* 141(5):479-480. I.F.: 5.362

4. Fullana MA; Hidalgo-Mazzei D; Vieta E; Radua J. **Coping behaviors associated with decreased anxiety and depressive symptoms during the COVID-19 pandemic and lockdown.** *Journal of Affective Disorders.* 275:80-81. I.F.: 3.892

5. Lengvenyte A, Vieta E. **Association between selective serotonin reuptake inhibitors and violent crime - could underlying psychopathology be the cause?** *European Neuropsychopharmacology.* 36:151-153. I.F.: 3.853

6. García-Rizo C, Bioque M, Mezquida G, Amoretti S, Cuesta MJ, Díaz-Caneja CM, Mas S, Lobo A, González-Pinto A, Fraguas D, Corripio I, Vieta E, Baeza I, Bergé D, Fernandez-Egea E, Garriga M, Bernardo M, PEPs GROUP. **Birth weight and antipsychotic induced weight gain: A prenatal programming approach in the PEPs study.** *Schizophrenia Research.* 218:292-294. I.F.: 3.759

7. Vieta E; Pérez V; Arango C. **Psychiatry in the aftermath of COVID-19.** *Revista de Psiquiatría y Salud Mental.* 13(2):105-110. I.F.: 2.630

8. León-Caballero J, Córcoles D, Alba-Pale L, Sabaté-Gomez A, Pérez E, Monteagudo E, Miguel Martin L, Pérez V, Pacchiarotti I. **Psychiatric hospitalization at home unit in Spain: clinical and functional outcomes after three years of experience.** *Actas Españolas de Psiquiatría.* 48(3):138-144. I.F.: 1.681

Editorial / I.F.: 11.44

1. Stein, Dan J; Szatmari, Peter; Gaebel, Wolfgang; Berk, Michael; Vieta, Eduard; Maj, Mario; de Vries, Ymkje Anna; Roest, Annelieke M; de Jonge, Peter; Maercker, Andreas; Brewin, Chris R; Pike, Kathleen M; Grilo, Carlos M; Fineberg, Naomi A; Briken, Peer; Cohen-Kettenis, Peggy T; Reed, Geoffrey M. **Mental, behavioral and neurodevelopmental disorders in the ICD-11: an international perspective on key changes and controversies.** *Bmc Medicine.* 18(1):21. I.F.: 6.782

2. Vieta E. **Disruptive treatments in psychiatry.** *Revista de Psiquiatría y Salud Mental.* 13(1):1-4. I.F.: 2.630

3. Torres A, Ferrer M. **COPD in the Intensive Care Unit.** *Seminars in Respiratory and Critical Care Medicine.* 41(6):785. I.F.: 2.028

Case Reports / I.F.: 7.784

1. Anmella G, Fico G, Roca A, Gómez-Ramiro M, Vázquez M, Murru A, Pacchiarotti I, Verdolini N, Vieta E. **Unravelling potential severe psychiatric repercussions on healthcare professionals during the COVID-19 crisis.** *Journal of Affective Disorders.* 273:422-424. I.F.: 3.892

2. Anmella G, Arbelo N, Fico G, Murru A, Llach CD, Madero S, Gomes-da-Costa S, Imaz ML,

López-Pelayo H, Vieta E, Pintor L. **COVID-19 inpatients with psychiatric disorders: Real-world clinical recommendations from an expert team in consultation-liaison psychiatry.** *Journal of Affective Disorders.* 274:1062-1067. I.F.: 3.892

Consortium Publications / I.F.: 25.463

1. Coleman JRI, Gaspar HA, Bryois J, Breen G Bipolar Disorder Working Group of the Psychiatric Genomics Consortium, Major Depressive Disorder Working Group of the Psychiatric Genomics Consortium. **The Genetics of the Mood Disorder Spectrum: Genome-wide Association Analyses of More Than 185,000 Cases and 439,000 Controls.** *Biological Psychiatry.* 88(2):169-184. I.F.: 12.095

2. Bergé D, Mané A, Lesh TA, Bioque M, Barcones F, Gonzalez-Pinto AM, Parellada M, Vieta E, Castro-Fornieles J, Rodriguez-Jimenez R, García-Portilla MP, Usall J, Carter CS, Cabrera B, Bernardo M, Janssen J, PEPs group. **Elevated Extracellular Free-Water in a Multicentric First-Episode Psychosis Sample, Decrease During the First 2 Years of Illness.** *Schizophrenia Bulletin.* 46(4):846-856. I.F.: 7.958

3. Scott, Jan; Etain, Bruno; Manchia, Mirko; Brichant-Petitjean, Clara; Geoffroy, Pierre A; Schulze, Thomas; Alda, Martin; Bellivier, Frank; Amare, A; Ardau, R; Backlund, L; Baune, B; Barboza, A; Benabarre, A; Chaumette, B; Chen, H; Chillotti, C; Clark, S; Colom, F; Del Zompo, M; Dalkner, N; Dantas, C; Ferentinos, P; Garnham, J; Jamain, S; Jimenez, E; Khan, J-P; Kuo, P; Lavebratt, C; Maj, M; Millischer, V; Monteleone, P; Pisanu, C; Potash, J; Reif, A; Reininghaus, E; Schalling, M; Schofield, P; Schubert, K; Severino, G; Slaney, C; Smith, D; Squassina, A; Tondo, L; Vieta, E; Witt, S; ConLIGen Collaborators. **An examination of the quality and performance of the Alda scale for classifying lithium response phenotypes.** *Bipolar Disorders.* 22(3):255-265. I.F.: 5.410

GRANTS FOR RESEARCH IN PROGRESS

Benabarre A. **Identificación de variables biológicas asociadas a la conducta suicida en el trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01122
Duration: 01/01/2018-31/12/2021

García-Esteve L, Sánchez-Vives MV. **Virtual Reality Prevention of Gender-Violence in Europe based on Neuroscience of Embodiment, peRspective and Empathy.**
Sponsored by: European Commission.
CE_REC_2019
Duration: 01/03/2020-28/02/2022

Goikolea JM. **Effectiveness of brief intervention on substance use in bipolar disorders patients.**
Sponsored by: Fundació Clínic per a la Recerca Biomèdica. FCRB_PB1_2016
Duration: 02/05/2016-31/12/-

Grande I. **Disbiosis en el trastorno bipolar: MicrObiota Bipolar study (MOB study).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00187
Duration: 01/01/2017-30/06/2021

Grande I. **Prevención e Intervención en Suicidio (SURVIVE): estudio de cohorte y ensayos clínicos controlados anidados de programas de prevención secundaria para intentos de suicidio.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00954
Duration: 01/01/2020-31/12/2022

Gutierrez-Ponce F. **Un modelo integrado para la patología de la personalidad: estructura jerárquica, significación e impacto biográfico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00536
Duration: 01/01/2016-30/11/2020

Hidalgo-Mazzei D. **Development, feasibility and effectiveness of a digital support platform for mental health in primary care (PRESTO) based on a machine learning approach.**
Sponsored by: Fundació Clínic per a la Recerca Biomèdica. FCRB_PB1_2020
Duration: 04/05/2020-03/05/2022

Martínez-Arán A. **Marcadors transdiagnòstics dels símptomes cognitius en els trastorns afectius.**
Sponsored by: Generalitat de Catalunya.
PERIS_SLT006/17/00177
Duration: 17/02/2018-31/12/2020

Martínez-Arán A. **Eficacia de un módulo e-neurocognitivo como coadyudante a la rehabilitación funcional para pacientes con trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00330
Duration: 01/01/2016-30/11/2020

Martínez-Arán A. **Eficacia de la Rehabilitación Funcional adaptada a pacientes con primeros episodios psicóticos coadyuvante al tratamiento farmacológico versus tratamiento farmacológico habitual (FROzEN).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00789
Duration: 01/01/2019-31/12/2021

Martín-Santos R. **Estado de ánimo, cognición, inflamación y daño cerebral en pacientes con hepatitis C tratados con los "agentes antivirales directos" estudio de neuroimagen multimodal-Estudio PSICO-AAD.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/02297
Duration: 01/01/2018-30/06/2022

Murru A. **Predicción de recaídas depresivas en trastorno bipolar mediante la monitorización actigráfica continua: Un estudio prospectivo a 12 meses.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00672
Duration: 01/01/2020-31/12/2022

Pachiarotti I. **Obtención de un algoritmo de diagnóstico para el trastorno bipolar con máquinas de aprendizaje utilizando datos de neuroimagen estructural, variantes genéticas y función cognitiva.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01001
Duration: 01/01/2019-31/12/2021

Sánchez-Moreno J. **Efectos de un programa integral de terapia cognitiva basada en mindfulness, psicoeducación y rehabilitación funcional en el trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/00941
Duration: 01/01/2018-30/06/2022

Sánchez-Moreno J, Jiménez-Martínez E. **Eficacia de la Rehabilitación Funcional para pacientes con trastorno bipolar de edad avanzada (FROA-BD) coadyuvante al tratamiento farmacológico versus tratamiento farmacológico habitual.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI20/00060
Duration: 01/01/2021-31/12/2023

Torrent C. **Estudi sobre l'eficàcia d'un programa de potenciació de reserva cognitiva en població d'alt risc genètic a desenvolupar un trastorn bipolar.**
Sponsored by: Generalitat de Catalunya.
PERIS_SLT006/17/00352
Duration: 17/02/2018-31/03/2021

Torrent C. **Estudio sobre la eficacia de la potenciación de la reserva cognitiva en niños, adolescentes y adultos jóvenes de alto riesgo genético para esquizofrenia o trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01066
Duration: 01/01/2018-30/06/2022

Vieta E. **Trastorn Bipolar.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01365
Duration: 01/01/2017-30/09/2021

Vieta E. **Caracterització dels pròdroms i detecció de factors predictors pronòstics en una mostra de pacients bipolars amb un primer episodi maniac.**
Sponsored by: Generalitat de Catalunya.
PERIS_SLT006/17/00357
Duration: 17/02/2018-31/03/2021

Vieta E. **INNOBRAIN: noves tecnologies per a la innovació en rehabilitació i estimulació cognitiva.**
Sponsored by: Fundació Institut Guttmann.
ACCIO_COMRDI15-1-0017-07
Duration: 02/01/2017-02/01/2020

Vieta E. **Implicación de variantes del gen DDR1 en la integridad de la mielina y en la velocidad de procesamiento cognitivo en pacientes con trastorno bipolar en fase autímica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00283
Duration: 01/01/2016-30/11/2020

Vieta E. **Estudio sobre la eficacia de un abordaje psicológico para la potenciación de la reserva cognitiva en población bipolar con un primer episodio reciente.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00805
Duration: 01/01/2019-31/12/2021

Vieta E. **Recovery with MIND/COVID-19: Development, feasibility and effectiveness of a smartphone application (PRESTOapp) for mental health problems in health workers during the COVID-19 pandemic.**
Sponsored by: Fundación Española de Psiquiatría y Salud Mental. FEPSM_COVID19_20_1
Duration: 02/12/2020-01/12/2021

Vieta E. **Optimizing response to Li treatment through personalized evaluation of individuals with bipolar I disorder: the R-LiNK initiative.**
Sponsored by: European Commission.
CE_H2020-SC1_17_2s
Duration: 01/01/2018-31/12/2022

DOCTORAL THESES

Vieta E, Garcia-Esteve L. **Trastorn bipolar i embaràs: avaluació dels resultats obstètrics i neonatals.**
PhD student: Eva Sole Roige

Grande I. **Electroconvulsive therapy: clinical features and cognitive adverse effects.**
PhD student: Sebastian Alvarez Grandi

4.25 Pathogenesis and new treatments in multiple sclerosis

LOCATION
CELLEX building, floor 3A

KEYWORDS
1. **Neuroprotection**
2. **Antigen tolerization**
3. **Systems biology**
4. **Neuroimaging**

RELATED DISEASES
1. **Multiple sclerosis**
2. **Neuromyelitis optica**
3. **Anti-mog associated encephalitis**

GROUP INVOLVED IN
IMSVISUAL: International Multiple Sclerosis Visual System consortium
RETIC-Esclerosis Multiple (REEM)

Original publications

TOTAL	3
IF	25,33
Mean IF	8,44
Q1	100%
D1	67%
MA	0%



GROUP LEADER
Pablo Villoslada (IDIBAPS)
T. 93 227 54 00 (Ext.: 4802)
pvillosl@clinic.cat

POST-DOCTORAL RESEARCHERS
Magi Andorra (IDIBAPS)
Irene Pulido (IDIBAPS)

TECHNICIANS
Salut Albà (IDIBAPS)
Ana Isabel Guerrero (IDIBAPS)

ADMINISTRATIVE STAFF
Laura Planas (IDIBAPS)

PROBLEM

The principal objective of the Group is the study of Multiple Sclerosis and Neuromyelitis Optica, and the elucidation of the underlying immunopathogenic mechanisms involved in the inflammatory response and brain damage.

We pursuit a translational medicine approach by developing new therapies and diagnostics for these diseases

APPROACH

Our team is pioneering the application of Systems Medicine to the study of Multiple Sclerosis and the development of new tools for personalized medicine. We are developing new therapies such as the trophic factor like drug ACT-01 as neuroprotective therapy or antigen-specific tolerization using dendritic cells for stopping the disease.

We have developed new diagnostic tools such as molecular imaging of the retina to monitor disease progression.

We have combined omics, imaging and clinical information with machine learning tools in order to develop clinical decision support systems for personalized medicine.

Lastly, the group has a commitment to innovation, both in terms of the generation of patents and as regards the creation of spin-off companies.

IMPACT

We have moved our therapeutic programs to clinical stages: the neuroprotectant ACT-02 is now being tested in a phase 2 trial.

The tolerogenic dendritic cell therapy has already started a phase 2 trial as well. The prognosis biomarkers based on OCT analysis are becoming use in clinical practice.

RESEARCH LINES

- The use of systems biology and omics to dissect the immunological mechanisms leading to brain damage in demyelinating diseases.

- The development of magnetic resonance imaging and optical coherence tomography techniques to elucidate substrates of clinical dysfunction, biomarkers of treatment response and mechanisms of brain plasticity in demyelinating diseases.

- Discovery of new therapies for Multiple Sclerosis and Neuromyelitis Optica.

PUBLICATIONS

Originals / I.F.: 25.33

1. Andorrà M; Alba-Arbalat S; Camos-Carreras A; Gabilondo I; Fraga-Pumar E; Torres-Torres R; Pulido-Valdeolivas I; Tercero-Uribe AI; Guerrero-Zamora AM; Ortiz-Perez S; Zubizarreta I; Sola-Valls N; Llufriu S; Sepulveda M; Martinez-Hernandez E; Armangue T; Blanco Y; Villoslada P; Sanchez-Dalmau B; Saiz A; Martinez-Lapiscina EH. **Using Acute Optic Neuritis Trials to Assess Neuroprotective and Remyelinating Therapies in Multiple Sclerosis.** *Jama Neurology*. 77(2):234-244. I.F.: 13.608

2. Cellerino M, Ivaldi F, Pardini M, Rotta G, Vila G, Bäcker-Koduah P, Berge T, Laroni A, Lapucci C, Novi G, Boffa G, Sbragia E, Palmeri S, Asseyer S, Høgestøl E, Campi C, Piana M, Inglese M, Paul F, Harbo HF, Villoslada P, Kerlero de Rosbo N, Uccelli A. **Impact of treatment on cellular immunophenotype in MS: A cross-sectional study.** *Neurology-Neuroimmunology & Neuroinflammation*. 7(3). I.F.: 7.724

3. Pulido-Valdeolivas I, Andorrà M, Gómez-Andrés D, Nakamura K, Alba-Arbalat S, Lampert EJ, Zubizarreta I, Llufriu S, Martinez-Heras E, Solana E, Sola-Valls N, Sepulveda M, Tercero-Uribe A, Blanco Y, Camos-Carreras A, Sanchez-Dalmau B, Villoslada P, Saiz A, Martinez-Lapiscina EH. **Retinal and brain damage during multiple sclerosis course: inflammatory activity is a key factor in the first 5 years.** *Scientific Reports*. 10(1):13333. I.F.: 3.998

Letters / I.F.: 18.952

1. Villoslada P, Baeza-Yates R, Masdeu JC. **Reclassifying neurodegenerative diseases.** *Nature Biomedical Engineering*. 4(8):759-760. I.F.: 18.952

Editorial / I.F.: 8.77

1. Villoslada P; Sanchez-Dalmau B; Galetta S. **Optical coherence tomography: A useful tool for identifying subclinical optic neuropathy in diagnosing multiple sclerosis.** *Neurology*. 95(6):239-240. I.F.: 8.770

GRANTS FOR RESEARCH IN PROGRESS

Villoslada P. **Estudio del daño axonal en esclerosis múltiple mediante estudios de neuroimagen de la vía óptica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00061
Duration: 01/01/2016-30/11/2020

Villoslada P. **Multiple manifestations of genetic and non-genetic factors in Multiple Sclerosis disentangled with a multi-omics approach to accelerate personalised medicine.**
Sponsored by: European Commission. CE_H2020-SC1_16abr1s
Duration: 01/01/2017-31/12/2021

Villoslada P. **Retinal molecular imaging in MS by Raman Spectroscopy to quantify inflammatory and neurodegenerative activity in MS.**
Sponsored by: Fundación Merck Salud. INT_MERCKSER_GMSI_16_01
Duration: 01/01/2017-31/03/2020

ANNUAL
SCIENTIFIC REPORT
2020

AREA 5

ONCOLOGY AND HAEMATOLOGY



5

© Saül Pascual-Diaz

AREA 5

ONCOLOGY AND HAEMATOLOGY

5.1 **Signal transduction and cell cycle**
Neus Agell

5.2 **Functional characterization of oncogenic mechanisms in lymphomagenesis**
Virginia Amador

5.3 **Myeloma and other monoclonal gammopathies**
Joan Bladé

5.4 **Molecular pathology of lymphoid neoplasms**
Elias Campo

5.5 **Myeloid neoplasms**
Francisco Cervantes

5.6 **Experimental therapies in lymphoid neoplasms**
Dolors Colomer

5.7 **Molecular pathology of inflammatory conditions and solid tumours**
Miriam Cuatrecasas

5.8 **Endocytosis and intracellular trafficking of proteins and colesterol**
Carles Enrich

5.9 **Hemotherapy-hemostasis**
Ginés Escolar

5.10 **Mechanisms of progression in monoclonal gammopathies**
Carlos Fernández de Larrea

5.11 **Lymphoid neoplasms**
Armando López Guillermo

5.12 **Biomedical epigenomics**
Iñaki Martín Subero

5.13 **Molecular biology of reproduction and development**
Rafael Oliva

5.14 **Microenvironment in lymphoma pathogenesis and therapy**
Patricia Pérez Galán

5.15 **Lipid trafficking and disease**
Albert Pol

5.16 **Diagnosis and therapy in oncology**
Francesca Pons

5.17 **Transcriptional regulation of gene expression**
Antonio Postigo

5.18 **Translational genomics and targeted therapies in solid tumours**
Aleix Prat

5.19 **Melanoma: imaging, genetics and immunology**
Susana Puig

5.20 **Molecular genetics of paediatric lymphomas**
Itziar Salaverria

5.21 **Hematopoietic progenitor cell transplantation**
Álvaro Urbano-Ispizua

5.1 Signal transduction and cell cycle

LOCATION
CELLEX building, floor 1A
UB School of Medicine

KEYWORDS
1. **RAS**
2. **RAC**
3. **Replication stress**
4. **Cell cycle checkpoints**

RELATED DISEASES
1. **Cancer**

GROUP INVOLVED IN
AGAUR_SGR17: 01225

Original publications

TOTAL	8
I.F.	93,13
Mean I.F.	11,64
Q1	75%
D1	50%
MA	25%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Neus Agell (UB)
T. 93 403 52 67
neusagell@ub.edu

RESEARCHERS
Montserrat Jaumot (UB)
Francesc Tebar (IDIBAPS-UB)

PRE-DOCTORAL RESEARCHERS
Baraa Abuasaker (UB)
Debora Cabot (UB)
Albert Chavero (UB)
Fernando Unzueta (UB)

TECHNICIANS
Sonia Brun (UB)

PROBLEM

Cancer is one of the most prevalent diseases in developed countries. Although great progress has been made in early detection and treatment, no effective strategies exist as yet in the majority of cases.

The cells that are resistant to treatment continue to proliferate, forming new tumours, even in tissues far from the initial tumour site, thus generating metastasis, the main cause of death in patients.

APPROACH

The objective of the group's studies is to improve cancer therapies to prevent the appearance, migration and proliferation of tumour cells.

One of the characteristics of tumour cells is their uncontrolled proliferation and migration. In other words, they act regardless of the internal and external signals they receive.

The study of the basic mechanisms that regulate such processes in normal cells and the way in which they are altered in cancer cells allows us to understand the development of tumours and thus know their weaknesses, in order to design new therapies.

IMPACT

The group's studies are focused on firstly understanding the DNA replication control mechanisms and secondly, the functioning of Ras family proteins, which appear mutated in many human tumours.

The group aims to find new strategies to suppress the genes that provoke tumours (oncogenes) and halt cell proliferation and migration, as well as inducing replication stress in tumour cells and causing their death.

RESEARCH LINES

- New strategies to inhibit oncogenic K-Ras.

- Replicative stress: response of untransformed cells versus tumor cells.

- Signaling, cytoskeleton and cellular migration.

PUBLICATIONS

Originals / I.F.: 93.13

1. Bosch M, Sánchez-Álvarez M, Fajardo A, Kapetanovic R, Steiner B, Dutra F, Moreira L, López JA, Campo R, Marí M, Morales-Paytuví F, Tort O, Gubern A, Templin RM, Curson JEB, Martel N, Català C, Lozano F, Tebar F, Enrich C, Vázquez J, Del Pozo MA, Sweet MJ, Bozza PT, Gross SP, Parton RG, Pol A. **Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense.** *Science*. 370(6514):eaay8085. I.F.: 41.846

2. Alvarez-Guaita A, Blanco-Muñoz P, Meneses-Salas E, Wahba M, Pollock AH, Jose J, Casado M, Bosch M, Artuch R, Gaus K, Lu A, Pol A, Tebar F, Moss SE, Grewal T, Enrich C, Rentero C. **Annexin A6 is critical to maintain glucose homeostasis and survival during liver regeneration.** *Hepatology*. 72(6):2149-2164. I.F.: 14.679

3. Pelletier J., Riaño-Canalias F., Almacellas E., Mauvezin C., Samino S., Feu S., Menoyo S., Domostegui A., Garcia-Cajide M., Salazar R., Cortés C., Marcos R., Tauler A., Yanes O., Agell N., Kozma S.C., Gentilella A., Thomas G. **Nucleotide depletion reveals the impaired ribosome biogenesis checkpoint as a barrier against DNA damage.** *Embo Journal.* 39(13):e103838. I.F.: 9.889

4. Meneses-Salas E; García-Melero A; Kanerva K; Blanco-Muñoz P; Morales-Paytuvi F; Bonjoch J; Casas J; Egert A; Beevi S; Jose J; Llorente-Cortés V; Rye K; Heeren J; Lu A; Pol A; Tebar F; Ikonen E; Grewal T; Enrich C; Rentero C. **Annexin A6 modulates TBC1D15/Rab7/StARD3 axis to control endosomal cholesterol export in NPC1 cells.** *Cellular and Molecular Life Sciences.* 77(14):2839-2857. I.F.: 6.496

5. Ercilla A, Feu S, Aranda S, Llopis A, Brynjólfsdóttir SH, Sørensen CS, Toledo LI, Agell N. **Acute hydroxyurea-induced replication blockade results in replisome components disengagement from nascent DNA without causing fork collapse.** *Cellular and Molecular Life Sciences.* 77(4):735-749. I.F.: 6.496

6. Feu S; Unzueta F; Llopis A; Semple JI; Ercilla A; Guaita-Esteruelas S; Jaumot M; Freire R; Agell N. **OZF is a Claspin-interacting protein essential to maintain the replication fork progression rate under replication stress.** *Faseb Journal.* 34(5):6907-6919. I.F.: 4.966

7. Hoque, Monira; Elmaghrabi, Yasmin A; Kose, Meryem; Beevi, Syed S; Jose, Jaimy; Meneses-Salas, Elsa; Blanco-Munoz, Patricia; Conway, James R W; Swarbrick, Alexander; Timpson, Paul; Tebar, Francesc; Enrich, Carlos; Rentero, Carles; Grewal, Thomas. **Annexin A6 improves anti-migratory and anti-invasive properties of tyrosine kinase inhibitors in EGFR overexpressing human squamous epithelial cells.** *Febs Journal.* 287(14):2961-2978. I.F.: 4.392

8. Meneses-Salas E; García-Melero A; Blanco-Muñoz P; Jose J; Brenner MS; Lu A; Tebar F; Grewal T; Rentero C; Enrich C. **Selective Degradation Permits a Feedback Loop Controlling Annexin A6 and Cholesterol Levels in Endolysosomes of NPC1 Mutant Cells.** *Cells.* 9(5):1152. I.F.: 4.366

Review / I.F.: 4.556

1. Tebar F; Chavero A; Agell N; Lu A; Rentero C; Enrich C; Grewal T. **Pleiotropic roles of calmodulin in the regulation of KRas and rac1 GTPases: Functional diversity in health and disease.** *International Journal of Molecular Sciences.* 21(10):3680. I.F.: 4.556

GRANTS FOR RESEARCH IN PROGRESS

Agell N. **Nuevas interacciones de KRAS relevantes para su actividad oncogénica y efecto del estrés de replicación en la actividad transcripcional.**
Sponsored by: Ministerio de Ciencia, Innovación y Universidades.
MCIU_PID2019-105483RB-I00
Duration: 01/06/2020-31/05/2023

DOCTORAL THESES

Agell N, Jaumot M. **Analysis of KRAS phosphorylation and KRAS effector domain as targets for cancer therapy.**
PhD student: Debora Cabot Romero

Tebar F, Enrich C. **Rac1 regula la endocitosis y la tensión de membrana plasmática mediante el control de los niveles de pi(4,5)p2 y la dinámica de actina.**
PhD student: Albert Chavero Pieres

5.2 Functional characterization of oncogenic mechanisms in lymphomagenesis

LOCATION
CEK building, floor 2

KEYWORDS
1. **Lymphoma**
2. **Mantle cell lymphoma**
3. **SOX11**
4. **Tumor immune microenvironment**
5. **Immunecheckpoints**
6. **Cancer stem cells**

RELATED DISEASES
1. **Lymphoma**
2. **Mantle cell lymphoma**

GROUP INVOLVED IN
AGAUR_SGR17: 1482



GROUP LEADER
Virginia Amador (IDIBAPS)
T. 93 227 54 00 (Ext.: 4582)
vamador@clinic.cat

POST-DOCTORAL RESEARCHERS
Patricia Balsas (FCRB)

PRE-DOCTORAL RESEARCHERS
Anna de Bolòs (IDIBAPS)
Marta Sureda Gómez (IDIBAPS)

TECHNICIANS
Marta Leonor Rodríguez Borràs (IDIBAPS)

PROBLEM

Personalised therapies have great potential for the treatment of various types of cancer, such as lymphomas. However, resistance (to drugs) remains a problem that must be resolved. Normal cells within the tumour's micro-environment provide factors that help cancer cells to grow and survive despite the presence of drugs.

The identification and description of new signalling networks and factors responsible for cancer emergence, progression and resistance to drugs, in both cancer cells and normal cells in the tumour micro-environment, will be essential for the design of new therapeutic strategies for aggressive cancers with relapse, such as lymphomas.

APPROACH

The group identifies and describes the molecular mechanisms and the clinical impact of new oncogenic factors and the signalling pathways of aggressive lymphomas using innovative screening tools in primary patient samples, molecular and cellular biology tools and mimicking the tumour microenvironment in 3D cocultures. It also conducts translational research, in which it generates lymphoma in murine models to test the treatments in vivo.

In this way it can better understand the disease and it can find new targets in order to develop specific therapies that benefit patients with aggressive relapsing lymphomas, many of them incurable to date.

IMPACT

The results of the group have helped to show that, as with solid tumours, the tumour micro-environment and the immune system play an important role in aggressive behaviour and response to current treatments against mantle cell lymphoma.

Its ultimate goal is to transfer the best experimental therapies to patients with aggressive lymphomas, to improve their response to treatments and their quality of life. Its experimental approaches will also allow the establishment of new biomarkers to stratify patients, which will result in a more accurate allocation of these new treatments.

RESEARCH LINES

Functional characterization of oncogenic mechanisms in lymphomagenesis.

The objective of the group is to identify and characterize the functional role of new candidates and signaling pathways, in both cancerous and normal cells of the tumor microenvironment, responsible for the appearance, maintenance and aggressive behavior of lymphomas, for a better understanding of the pathogenesis and to find potential candidates for tailored therapies.

GRANTS FOR RESEARCH IN PROGRESS

Amador V. **Tumor-immune microenvironment in mantle cell lymphoma.**
Sponsored by: Fundació La Marató de TV3. Cancer_19
Duration: 30/07/2020-29/07/2023

Amador V. **El microambiente inmune tumoral en la progresión y control de los linfomas de células del manto: caracterización de críticos factores inmunes y desafíos para la terapia.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-099793-B-I00
Duration: 01/01/2019-31/12/2021

Amador V. **Identifying immune system evasion mechanisms in aggressive Mantle Cell lymphoma (MCL).**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_Investigador18
Duration: 01/11/2018-31/12/2022

5.3 Myeloma and other monoclonal gammopathies

LOCATION
HCB building

KEYWORDS
1. **Multiple myeloma**
2. **Amyloidosis**
3. **Monoclonal gammopathy**
4. **Waldenstrom's macroglobulinemia**

RELATED DISEASES
1. **Multiple myeloma**
2. **Amyloidosis**
3. **Monoclonal gammopathy of undetermined significance**
4. **Waldenstrom's macroglobulinemia**

GROUP INVOLVED IN
AGAUR_SGR17: 00792

Original publications

TOTAL	26
I.F.	281,15
Mean I.F.	10,81
Q1	81%
D1	46%
MA	0%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Joan Bladé (HCB)
T. 93 227 54 00 (Ext.: 3352)
jblade@clinic.cat

RESEARCHERS
Maria Teresa Cibeira (HCB)
Laura Rosiñol (HCB)

POST-DOCTORAL RESEARCHERS
Natalia Tovar (HCB)

PRE-DOCTORAL RESEARCHERS
Raquel Jiménez (FCRB)
Ana Triguero (FCRB)

PROBLEM

Multiple myeloma (MM) accounts for 15% of malignant disease. It consists of the proliferation in the bone marrow of plasma cells that produce an abnormal protein. MM manifests with bone involvement, abnormal kidney function, anaemia, increased calcium levels, infections and tumours of the plasma cells (extramedullary disease).

Although the mean survival rate for patients has increased from 3 to 6 years, only 3% of cases are cured. Preventing the disease and improving treatment results are therefore the healthcare problems to be solved.

APPROACH

The group studies mechanisms of progression in people with monoclonal gammopathy of undetermined significance and in patients with MM who respond to treatment.

It studies the efficacy of new models (phase-I and phase-II clinical trials) and of drug combinations (phase-III trials) to increase survival and the proportion of patients cured.

It also participates as the principal national investigator in clinical trials by the Spanish Myeloma Group, in trials by the pharmaceutical industry, and it will shortly begin a project with a phase-I clinical trial with anti-BCMA CAR-T-cell therapy (first-in-human).

IMPACT

The work carried out to date has enabled the group to develop international criteria for responding to MM (Bladé BJH 1998), describe evolving smouldering MM, provide a response to extramedullary involvement with new drugs, and obtain approval from the EMEA for pre-transplant induction treatment with VTD.

The group leader is among the top 1% of most cited researchers in the world, according to the Thompson&Reuters ranking agency.

RESEARCH LINES

- Cardiac involvement in al amyloidosis.

- Clinical trials.

- Extramedullary involvement in multiple myeloma.

- Mechanisms of progression in monoclonal gammopathies.

- Real life data.

PUBLICATIONS

Originals / I.F.: 281.149

1. Mateos, Maria-Victoria; Cavo, Michele; Blade, Joan; Dimopoulos, Meletios A; Suzuki, Kenshi; Jakubowiak, Andrzej; Knop, Stefan; Doyen, Chantal; Lucio, Paulo; Nagy, Zsolt; Pour, Ludek; Cook, Mark; Grosicki, Sebastian; Crepaldi, Andre; Liberati, Anna Marina; Campbell, Philip; Shelekhova, Tatiana; Yoon, Sung-Soo; Iosava, Genadi; Fujisaki, Tomoaki; Garg, Mamta; Krevvata, Maria; Chen, Ying; Wang, Jianping; Kudva, Anupa; Ukropec, Jon; Wroblewski, Susan; Qi, Ming; Kobos, Rachel; San-Miguel, Jesus. **Overall survival with daratumumab, bortezomib, melphalan, and prednisone in newly diagnosed multiple myeloma (ALCYONE): a randomi-**

sed, open-label, phase 3 trial. *Lancet.* 395(10218):132-141. I.F.: 60.390

2. Paiva B., Puig N., Cedena M.T., Rosiñol L., Cordón L., Vidriales M.B., Burgos L., Flores-Montero J., Sanoja-Flores L., Lopez-Anglada L., Maldonado R., de la Cruz J., Gutierrez N.C., Calasanz M.J., Martin-Ramos M.L., Garcia-Sanz R., Martinez-Lopez J., Oriol A., Blanchard M.J., Rios R., Martin J., Martinez-Martinez R., Sureda A., Hernandez M.T., de la Rubia J., Krsnik I., Moraleda J.M., Palomera L., Bargay J., van Dongen J.J.M., Orfao A., Mateos M.V., Blade J., San-Miguel J.F., Lahuerta J.J. **Measurable Residual Disease by Next-Generation Flow Cytometry in Multiple Myeloma.** *Journal of Clinical Oncology.* 38(8):784-792. I.F.: 32.956

3. Kastritis E, Leleu X, Arnulf B, Zamagni E, Cibeira MT, Kwok F, Mollee P, Hájek R, Moreau P, Jaccard A, Schönland SO, Filshie R, Nicolas-Virelizier E, Augustson B, Mateos MV, Wechalekar A, Hachulla E, Milani P, Dimopoulos MA, Fermand JP, Foli A, Gavriatopoulou M, Klersy C, Palumbo A, Sonneveld P, Johnsen HE, Merlini G, Palladini G. **Bortezomib, Melphalan, and Dexamethasone for Light-Chain Amyloidosis**. *Journal of Clinical Oncology* 38(28):3252-3260. I.F.: 32.956

4. Perez C, Botta C, Zabaleta A, Puig N, Cedena MT, Goicoechea I, Alameda D, San José-Eneriz E, Merino J, Rodríguez-Otero P, Maia C, Alignani D, Maiso P, Manrique I, Lara-Astiaso D, Vilas-Zornoza A, Sarvide S, Riillo C, Rossi M, Rosiñol L, Oriol A, Blanchard MJ, Rios R, Sureda A, Martin J, Martinez R, Bargay J, de la Rubia J, Hernandez MT, Martinez-Lopez J, Orfao A, Agirre X, Prosper F, Mateos MV, Lahuerta JJ, Blade J, San-Miguel JF, Paiva B. **Immunogenomic identification and characterization of granulocytic myeloid derived suppressor cells in multiple myeloma.** *Blood.* 136(2):199-209. I.F.: 17.794

5. Maia C, Puig N, Cedena MT, Goicoechea I, Valdes-Mas R, Vazquez I, Chillon MC, Aguirre P, Sarvide S, Gracia-Aznárez FJ, Alkorta G, Calasanz MJ, Garcia-Sanz R, Gonzalez M, Gutierrez NC, Martinez-Lopez J, Perez JJ, Merino J, Moreno C, Burgos L, Alignani D, Botta C, Prosper F, Matarraz S, Orfao A, Oriol A, Teruel AI, de Paz R, de Arriba F, Hernandez MT, Palomera L, Martinez R, Rosiñol L, Mateos MV, Lahuerta JJ, Blade J, San Miguel JF, Paiva B. Biological and clinical significance of dysplastic hematopoiesis in patients with newly-diagnosed multiple myeloma. *Blood.* 135(26):2375-2387. I.F.: 17.794

6. Mateos, Maria-Victoria; Nahi, Hareth; Legiec, Wojciech; Grosicki, Sebastian; Vorobyev, Vladimir; Spicka, Ivan; Hungria, Vania; Korenkova, Sibirina; Bahlis, Nizar; Flogegard, Max; Blade, Joan; Moreau, Philippe; Kaiser, Martin; Iida, Shinsuke; Laubach, Jacob; Magen, Hila; Cavo, Michele; Hulin, Cyrille; White, Darrell; De Stefano, Valerio; Clemens, Pamela L; Masterson, Tara; Lantz, Kristen; O'Rourke, Lisa; Heuck, Christoph; Qin, Xiang; Parasrampuria, Dolly A; Yuan, Zhilong; Xu, Steven; Qi, Ming; Usmani, Saad Z. **Subcutaneous versus intravenous daratumumab in patients with relapsed or refractory multiple myeloma (COLUMBA): a multicentre, open-label, non-inferiority, randomised, phase 3 trial.** *Lancet Haematology.* 7(5):E370-E380. I.F.: 10.406

7. Lozano E, Mena MP, Díaz T, Martin-Antonio B, León S, Rodríguez-Lobato LG, Oliver-Caldés A, Cibeira MT, Bladé J, Prat A, Rosiñol L, Fernández de Larrea C. **Nectin-2 expression on malignant plasma cells is associated with better response to TIGIT blockade in multiple myeloma.** *Clinical Cancer Research.* 26(17):4688-4698. I.F.: 10.107

8. Garcés JJ; Bretones G; Burgos L; Valdes-Mas R; Puig N; Cedena MT; Alignani D; Rodriguez I; Puente DÁ; Álvarez MG; Goicoechea I; Rodriguez S; Calasanz MJ; Agirre X; Flores-Montero J; Sanoja-Flores L; Rodriguez-Otero P; Rios R; Martinez-Lopez J; Millacoy P; Palomera L; Del Orbe R; Pérez-Montaña A; El Omri H; Prosper F; Mateos MV; Rosiñol L; Blade J; Lahuerta JJ; Orfao A; Lopez-Otin C; San Miguel JF; Paiva B; GEM/PETHEMA (Grupo Español de Mieloma/Programa para el Estudio de la Terapéutica en Hemopatías Malignas) cooperative study group. **Circulating tumor cells for comprehensive and multiregional non-invasive genetic characterization of multiple myeloma.** *Leukemia.* 34(11):3007-3018. I.F.: 8.665

9. Medina A., Jiménez C., Sarasquete M.E., González M., Chillón M.C., Balanzategui A., Prieto-Conde I., García-Álvarez M., Puig N., González-Calle V., Alcoceba M., Cuenca I., Barrio S., Escalante F., Gutiérrez N.C., Gironella M., Hernández M.T., Sureda A., Oriol A., Bladé J., Lahuerta J.J., San Miguel J.F., Mateos M.V., Martínez-López J., Calasanz M.J., García-Sanz R. **Molecular profiling of immunoglobulin heavy-chain gene rearrangements unveils new potential prognostic markers for multiple myeloma patients**. *Blood Cancer Journal.* 10(2):14. I.F.: 8.023

10. Martínez-López J; Mateos MV; Encinas C; Sureda A; Hernández-Rivas JÁ; Lopez de la Guía A; Conde D; Krsnik I; Prieto E; Riaza Grau R; Gironella M; Blanchard MJ; Caminos N; Fernández de Larrea C; Senin MA; Escalante F; de la Puerta JE; Giménez E; Martínez-Barranco P; Mateos JJ; Casado LF; Bladé J; Lahuerta JJ; de la Cruz J; San-Miguel J. **Multiple myeloma and SARS-CoV-2 infection: clinical characteristics and prognostic factors of inpatient mortality.** *Blood Cancer Journal.* 10(10):103. I.F.: 8.023

11. Medina A; Puig N; Flores-Montero J; Jimenez C; Sarasquete ME; Garcia-Alvarez M; Prieto-Conde I; Chillon C; Alcoceba M; Gutierrez NC; Oriol A; Rosinol L; Bladè J; Gironella M; Hernandez MT; Gonzalez-Calle V; Cedena MT; Paiva B; San-Miguel JF; Lahuerta JJ; Mateos MV; Martinez-Lopez J; Orfao A; Gonzalez M; Garcia-Sanz R. **Comparison of next-generation sequencing (NGS) and next-generation flow (NGF) for minimal residual disease (MRD) assessment in multiple myeloma.** *Blood Cancer Journal.* 10(10):108. I.F.: 8.023

12. Beksac M, Seval GC, Kanellias N, Coriu D, Rosiñol L, Ozet G, Goranova-Marinova V, Unal A, Bila J, Ozsan H, Ivanaj A, Balić LI, Kastritis E, Bladé J, Dimopoulos MA. **A real world multicenter retrospective study on extramedullary disease from Balkan Myeloma Study Group and Barcelona University: analysis of parameters that improve outcome.** *Haematologica.* 105(1):201-208. I.F.: 7.116

13. Goldman-Mazur S, Jurczyszyn A, Castillo JJ, Waszczuk-Gajda A, Grząśko N, Radocha J, Bittrich M, Kortüm KM, Gozzetti A, Usnarska-Zubkiewicz L, Davila Valls J, Jayabalan DS, Niesvizky R, Kelman J, Coriu D, Rosiñol L, Szukalski Ł, González-Calle V, Mateos MV, Jamroziak K, Hus I, Avivi I, Cohen Y, Suska A, Chappell A, Madduri D, Chhabra S, Kleman A, Hari P, Delforge M, Robak P, Gentile M, Kozłowska I, Goldberg SL, Czepiel J, Silbermann R, Olszewski AJ, Barth P, Mikala G, Chim CS, Długosz-Danecka M, Grosicki S, Vesole DH. **A multicenter retrospective study of 223 patients with t(14;16) in multiple myeloma**. *American Journal of Hematology.* 95(5):503-509. I.F.: 6.973

14. Puig N; Corchete-Sánchez LA; Pérez-Morán JJ; Dávila J; Paíno T; de la Rubia J; Oriol A; Martín-Sánchez J; de Arriba F; Bladé J; Blanchard MJ; González-Calle V; García-Sanz R; Paiva B; Lahuerta JJ; San-Miguel JF; Mateos MV; Ocio EM.

Pembrolizumab as consolidation strategy in patients with multiple myeloma: Results of the GEM-pembresid clinical trial. *Cancers*. 12(12):3615. I.F.: 6.126

15. Misiewicz-Krzeminska I; de Ramón C; Corchete LA; Krzeminski P; Rojas EA; Isidro I; García-Sanz R; Martínez-López J; Oriol A; Bladé J; Lahuerta JJ; San Miguel J; Rosiñol L; Mateos MV; Gutiérrez NC. **Quantitative expression of Ikaros, IRF4, and PSMD10 proteins predicts survival in VRD-treated patients with multiple myeloma**. *Blood Advances*. 4(23):6023-6033. I.F.: 4.910

16. Gutiérrez-García G; Villarreal J; Garrote M; Rovira M; Blasco M; Suárez-Lledó M; Rodríguez-Lobato LG; Charry P; Rosiñol L; Marín P; Pedraza A; Solano MT; Ramos C; de Llobet N; Lozano M; Cid J; Martínez C; Poch E; Carreras E; Urbano-Ispizua Á; Fernández-Avilés F; Pereira A; Quintana LF. **Impact of severe acute kidney injury and chronic kidney disease on allogeneic hematopoietic cell transplant recipients: a retrospective single center analysis**. *Bone Marrow Transplantation*. 55(7):1264-1271. I.F.: 4.725

17. Puerta-Alcalde P; Cardozo C; Marco F; Suárez-Lledó M; Moreno E; Morata L; Fernández-Avilés F; Gutiérrez-Garcia G; Chumbita M; Rosiñol L; Martínez JA; Martínez C; Mensa J; Urbano Á; Rovira M; Soriano A; Garcia-Vidal C. **Changing epidemiology of bloodstream infection in a 25-years hematopoietic stem cell transplant program: current challenges and pitfalls on empiric antibiotic treatment impacting outcomes**. *Bone Marrow Transplantation*. 55(3):603-612. I.F.: 4.725

18. Martinez-Sanchez J; Palomo M; Torramade-Moix S; Moreno-Castaño AB; Rovira M; Gutiérrez-García G; Fernández-Avilés F; Escolar G; Penack O; Rosiñol L; Carreras E; Diaz-Ricart M. **The induction strategies administered in the treatment of multiple myeloma exhibit a deleterious effect on the endothelium**. *Bone Marrow Transplantation*. 55(12):2270-2278. I.F.: 4.725

19. Costa LJ; Iacobelli S; Pasquini MC; Modi R; Giaccone L; Blade J; Schonland S; Evangelista A; Perez-Simon JA; Hari P; Brown EE; Giralt SA; Patriarca F; Stadtmauer EA; Rosinol L; Krishnan AY; Gahrton G; Bruno B. **Long-term survival of 1338 MM patients treated with tandem autologous vs. autologous-allogeneic transplantation.** *Bone Marrow Transplantation*. 55:18010-18016. I.F.: 4.725

20. Gutierrez-Garcia, Gonzalo; Rovira, Montserrat; Arab, Nacira; Gallego, Cristina; Sanchez, Joan; Angeles Alvarez, Maria; Ayora, Pilar; Domenech, Ariadna; Borras, Nuria; Gerardo Rodriguez-Lobato, Luis; Rosinol, Laura; Marin, Pedro; Pedraza, Alexandra; Martinez-Roca, Alexandra; Carcelero, Esther; Dolores Herrera, Maria; Teresa Solano, Maria; Ramos, Carla; de Llobet, Noemi; Serrahima, Anna; Lozano, Miquel; Cid, Joan; Martinez, Carmen; Suarez-Lledo, Maria; Urbano-Ispizua, Alvaro; Fernandez-Aviles, Francesc. **A reproducible and safe at-home allogeneic haematopoietic cell transplant program: first experience in Central and Southern Europe**. *Bone Marrow Transplantation*. 55(5):965-973. I.F.: 4.725

21. Xu, Xu Steven; Moreau, Philippe; Usmani, Saad Z; Lonial, Sagar; Jakubowiak, Andrzej; Oriol, Albert; Krishnan, Amrita; Blade, Joan; Luo, Man; Sun, Yu-Nien; Zhou, Honghui; Nnane, Ivo; Deraedt, William; Qi, Ming; Ukropec, Jon; Clemens, Pamela L. **Split First Dose Administration of Intravenous Daratumumab for the Treatment of Multiple Myeloma (MM): Clinical and Population Pharmacokinetic Analyses.** *Advances In Therapy*. 37(4):1464-1478. I.F.: 3.871

22. Rodríguez-Lobato LG, Martínez-Roca A, Moreno DF, Gutiérrez-García G, Suárez-Lledó M, Rovira M, Martínez C, Rosiñol L, Almeida Jorge AS, Pedraza A, Cardozo C, Puerta-Alcalde P, Garcia-Vidal C, Marín P, Cid J, Lozano M, Gallego C, Hernando A, Segura S, Urbano-Ispizua Á, Fernández-Avilés F . **Impact of intensifying primary antibiotic prophylaxis in at-home autologous stem cell transplantation program for lymphoma patients.** *Leukemia & Lymphoma*. 61(7):1565-1574. I.F.: 2.969

23. Goldman-Mazur, Sarah; Jurczyszyn, Artur; Castillo, Jorge J; Waszczuk-Gajda, Anna; Grzasko, Norbert; Radocha, Jakub; Bittrich, Max; Kortuem, Klaus Martin; Gozzetti, Alessandro; Usnarska-Zubkiewicz, Lidia; Valls, Julio D; Jayabalan, David S; Niesvizky, Ruben; Kelman, Julia; Coriu, Daniel; Rosinol, Laura; Szukalski, Lukasz; Gonzalez-Calle, Veronica; Mateos, Maria-Victoria; Jamroziak, Krzysztof; Hus, Iwona; Avivi, Irit; Cohen, Yael; Mazur, Piotr; Suska, Anna; Chappell, Aimee; Madduri, Deepu; Chhabra, Saurabh; Kleman, Ariel; Hari, Parameswaran; Delforge, Michel; Robak, Pawel; Gentile, Massimo; Kozlowska, Izabela; Goldberg, Stuart L; Czepiel, Jacek; Dlugosz-Danecka, Monika; Silbermann, Rebecca; Olszewski, Adam J; Barth, Peter; Mikala, Gabor; Chim, Chor S; Vesole, David H. **Different MAF translocations confer similar prognosis in newly diagnosed multiple myeloma patients**. *Leukemia & Lymphoma*. 61(8):1885-1893. I.F.: 2.969

24. Cid, Joan; Castillo, Carlos; Marin, Pedro; Carbasse, Gloria; Herrera, Dolores; Monfort, Nuria; Fernandez-Aviles, Francesc; Gutierrez-Garcia, Gonzalo; Martinez, Carmen; Rosinol, Laura; Suarez-Lledo, Maria; Rovira, Montserrat; Urbano-Ispizua, Alvaro; Lozano, Miquel. **Increased collection efficiency of CD34+cells after mobilization with preemptive use of plerixafor followed by leukocytapheresis on the same day.** *Transfusion*. 60(4):779-785. I.F.: 2.800

25. Rodríguez-Lobato LG, Martínez-Roca A, Castaño-Díez S, Palomino-Mosquera A, Gutiérrez-García G, Pedraza A, Suárez-Lledó M, Rovira M, Martínez C, Fernández de Larrea C, Cibeira MT, Rosiñol L, Lozano E, Marín P, Cid J, Lozano M, Moreno-Castaño AB, Palomo M, Díaz-Ricart M, Gallego C, Hernando A, Segura S, Carreras E, Urbano-Ispizua Á, Bladé J, Fernández-Avilés F . **The avoidance of G-CSF and the addition of prophylactic corticosteroids after autologous stem cell transplantation for multiple myeloma patients appeal for the at-home setting to reduce readmission for neutropenic fever.** *Plos One*. 15(11):e0241778. I.F.: 2.740

26. Molina-Andújar A, Robles P, Cibeira MT, Montagud-Marrahi E, Guillen E, Xipell M, Blasco M, Poch E, Rosiñol L, Bladé J, Quintana LF. **The renal range of the κ/λ sFLC ratio: best strategy to evaluate multiple myeloma in patients with chronic kidney disease.** *Bmc Nephrology*. 21(1):111. I.F.: 1.913

Review / I.F.: 18.04

1. Dimopoulos MA, Jakubowiak AJ, McCarthy PL, Orlowski RZ, Attal M, Bladé J, Goldschmidt H, Weisel KC, Ramasamy K, Zweegman S, Spencer A, Huang JSY, Lu J, Sunami K, Iida S, Chng WJ, Holstein SA, Rocci A, Skacel T, Labotka R, Palumbo A, Anderson KC. **Developments in continuous therapy and maintenance treatment approaches for patients with newly diagnosed multiple myeloma.** *Blood Cancer Journal*. 10(2):1-17. I.F.: 8.023

2. Kastritis E, Wechalekar A, Schönland S, Sanchorawala V, Merlini G, Palladini G, Minnema M, Roussel M, Jaccard A, Hegenbart U, Kumar S, Cibeira MT, Blade J, Dimopoulos MA. **Challenges in the Management of patients with systemic light chain (AL) amyloidosis during the COVID-19 pandemic.** *British Journal of Haematology.* 190(3):346-357. I.F.: 5.518

3. Mateos MV; Bladé J; Bringhen S; Ocio EM; Efebera Y; Pour L; Gay F; Sonneveld P; Gullbo J; Richardson PG. **Melflufen: A Peptide-Drug Conjugate for the Treatment of Multiple Myeloma.** *Journal of Clinical Medicine.* 9(10):3120. I.F.: 3.303

4. Cibeira MT, Ortiz-Pérez JT, Quintana LF, Fernádez de Larrea C, Tovar N, Bladé J. **Supportive Care in AL Amyloidosis.** *Acta Haematologica.* 143(4):335-342. I.F.: 1.196

Case Reports / I.F.: 2.8

1. García-García I; Cid J; Palomino A; Giné E; Alvarez-Larrán A; Cibeira MT; Lozano M. **Role of therapeutic plasma exchanges in refractory severe warm autoimmune hemolytic anemia: Presentation of two case reports.** *Transfusion.* 60(11):2753-2757. I.F.: 2.800

5.4 Molecular pathology of lymphoid neoplasms

LOCATION
CEK building, floor 2

KEYWORDS
1. **Lymphoid neoplasms**
2. **Genomic alterations**
3. **Epigenome**
4. **Transcriptional regulation**
5. **Molecular pathology**

RELATED DISEASES
1. **Lymphoid neoplasms**

GROUP INVOLVED IN
AGAUR_SGR17: 00709, 01142
CIBERONC
ICGC
LLMPP

AWARDS
Gregorio Marañón National Research Award of Medicine Area
Institution: Ministry of science and Innovation (MCI)
Awardee/s: Elías Campo

Original publications

TOTAL	27
I.F.	194,90
Mean I.F.	7,22
Q1	78%
D1	56%
MA	15%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Elías Campo (HCB-UB)
T. 93 227 54 50
ecampo@clinic.cat

RESEARCHERS
Olga Balagué (HCB)
Sílvia Beà (IDIBAPS)
Luis Hernández Pous (IDIBAPS)
Pedro Jares (HCB-UB)
Antonio Martínez Pozo (HCB-UB)

POST-DOCTORAL RESEARCHERS
Carles Barceló (IDIBAPS)
Guillem Clot (IDIBAPS)
Santiago Demajo (IDIBAPS)
Blanca González Farré (HCB)
Cristina López González (IDIBAPS)
Daniel Martínez Hernández (HCB)
Ferran Nadeu (IDIBAPS)
Alba Navarro (CIBER)
Neus Roca Ayats (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Elena Fernández Garnacho (IDIBAPS)
Marta Grau (IDIBAPS)

TECHNICIANS
Cristina Capdevila (IDIBAPS)
Rosó Marés (IDIBAPS)
Silvia Martín Román (CIBER)
Miriam Prieto (FCRB)

ADMINISTRATIVE STAFF
Mª Carmen Muro (FCRB)
Sílvia Ruiz (IDIBAPS)

VISITING SCIENTISTS
Marco Matteo (University Hospital Zurich, Switzerland)

PROBLEM

The group is striving to understand the molecular mechanisms involved in the development and progression of lymphoid neoplasms, a group of extremely heterogeneous cancers that are relatively common and affect the blood, lymph nodes and other organs in the form of leukaemia or lymphomas.

Our aim is to discover the mechanisms that transform lymphoid cells to improve the diagnosis of these tumours, predict their evolution and identify the most effective treatments.

APPROACH

To understand the complexity of lymphoid neoplasms, the group approaches the study of these tumors from a multidisciplinary perspective, using advanced microscopy, DNA and RNA sequencing with next-generation sequencing technologies, single cell analysis, biochips and bioinformatics studies.

These studies use tissues and cells that the patients themselves have donated to research. The group also uses animal models and cell cultures that reproduce in the laboratory the diseases to be studied.

All the experimental data that we obtain are combined with clinical observations of patients, and we use these results to design novel diagnostic tools, models to predict evolution of these disease and orient new treatments.

IMPACT

The group has identified and characterized several lymphoid neoplasms about which very little was known. We have defined the way in which two oncogenes, which are involved in the development of mantle cell lymphoma (cyclin D1 and SOX11) function, and have described the whole genome sequence and epigenomic alterations of chronic lymphatic leukaemia and mantle cell lymphoma that have change our view of these neoplasms.

We have also designed new bioinformatics tools to analyze regions of interest in lymphoid neoplasms from genome sequences.

This information has help to designed novel treatments, improve the diagnosis of diverse lymphomas and identified new mechanisms that could be used as targets for treatment.

RESEARCH LINES

- Genetic and molecular mechanisms involved in the pathogenesis of lymphoid neoplasms.

- Genomic alterations of chronic lymphocytic leukemia and mantle cell lymphoma.

- Identification of biomarkers for more precise diagnosis, prognosis and prediction for therapy.

PUBLICATIONS

Originals / I.F.: 194.897

1. Ramis-Zaldivar JE, Gonzalez-Farré B, Balagué O, Celis V, Nadeu F, Salmerón-Villalobos J, Andrés M, Martin-Guerrero I, Garrido-Pontnou M, Gaafar A, Suñol M, Bárcena C, Garcia-Bragado F, Andión M, Azorín D, Astigarraga I, Sagaseta de Ilurdoz M, Sábado C, Gallego S, Verdú-Amorós J, Fernandez-Delgado R, Perez V, Tapia G, Mozos A, Torrent M, Solano-Páez P, Rivas-Delgado A, Dlouhy I, Clot G, Enjuanes A, López-Guillermo A, Galera P, Oberley MJ, Maguire A, Ramsower C, Rimsza LM, Quintanilla-Martinez L, Jaffe ES, Campo E, Salaverria I. **Distinct molecular profile of IRF4-rearranged large B-cell lymphoma.** *Blood*. 135(4):274-286. I.F.: 17.794

2. Nadeu F, Martin-Garcia D, Clot G, Díaz-Navarro A, Duran-Ferrer M, Navarro A, Vilarrasa-Blasi R, Kulis M, Royo R, Gutiérrez-Abril J, Valdés-Mas R, López C, Chapaprieta V, Puiggros M, Castellano G, Costa D, Aymerich M, Jares P, Espinet B, Muntañola A, Ribera-Cortada I, Siebert R, Colomer D, Torrents D, Gine E, López-Guillermo A, Küppers R, Martin-Subero JI, Puente XS, Beà S, Campo E. **Genomic and epigenomic insights into the origin, pathogenesis and clinical behavior of mantle cell lymphoma subtypes.** *Blood*. 136(12):1419-1432. I.F.: 17.794

3. Nadeu F, Mas-de-Les-Valls R, Navarro A, Royo R, Martín S, Villamor N, Suárez-Cisneros H, Mares R, Lu J, Enjuanes A, Rivas-Delgado A, Aymerich M, Baumann T, Colomer D, Delgado J, Morin RD, Zenz T, Puente XS, Campbell PJ, Beà S, Maura F, Campo E. **IgCaller for reconstructing immunoglobulin gene rearrangements and oncogenic translocations from whole-genome sequencing in lymphoid neoplasms.** *Nature Communications*. 11(1):3390. I.F.: 12.121

4. Rustad EH, Yellapantula V, Leongamornlert D, Bolli N, Ledergor G, Nadeu F, Angelopoulos N, Dawson KJ, Mitchell TJ, Osborne RJ, Ziccheddu B, Carniti C, Montefusco V, Corradini P, Anderson KC, Moreau P, Papaemmanuil E, Alexandrov LB, Puente XS, Campo E, Siebert R, Avet-Loiseau H, Landgren O, Munshi N, Campbell PJ, Maura F. **Timing the initiation of multiple myeloma.** *Nature Communications*. 11(1):1917. I.F.: 12.121

5. Ordoñez R, Kulis M, Russiñol N, Chapaprieta V, Carrasco-Leon A, García-Torre B, Charalampopoulou S, Clot G, Beekman R, Meydan C, Duran-Ferrer M, Verdaguer-Dot N, Vilarrasa-Blasi R, Soler-Vila P, Garate L, Miranda E, San José-Enériz E, Rodriguez-Madoz JR, Ezponda T, Martínez-Turrilas R, Vilas-Zornoza A, Lara-Astiaso D, Dupéré-Richer D, Martens JHA, El-Omri H, Taha RY, Calasanz MJ, Paiva B, San Miguel J, Flicek P, Gut I, Melnick A, Mitsiades CS, Licht JD, Campo E, Stunnenberg HG, Agirre X, Prosper F, Martin-Subero JI. **Chromatin activation as a unifying principle underlying pathogenic mechanisms in multiple myeloma.** *Genome Research*. 30(9):1217-1227. I.F.: 11.093

6. Massoni-Badosa R, Iacono G, Moutinho C, Kulis M, Palau N, Marchese D, Rodríguez Ubreva J, Ballestar E, Rodriguez-Esteban G, Marsal S, Aymerich M, Colomer D, Campo E, Julià A, Martín-Subero JI, Heyn H. **Sampling time-dependent artifacts in single-cell genomics studies.** *Genome Biology*. 21(1):112. I.F.: 10.806

7. Brieghel C, da Cunha-Bang C, Yde CW, Schmidt AY, Kinalis S, Nadeu F, Andersen MA, Jacobsen LO, Andersen MK, Pedersen LB, Delgado J, Baumann T, Mattsson M, Mansouri L, Rosenquist R, Campo E, Nielsen FC, Niemann CU. **The Number of Signaling Pathways Altered by Driver Mutations in Chronic Lymphocytic Leukemia Impacts Disease Outcome**. *Clinical Cancer Research*. 26(6):1507-1515. I.F.: 10.107

8. Nadeu F, Royo R, Maura F, Dawson K, Dueso-Barroso A, Aymerich M, Pinyol M, Beà S, López-Guillermo A, Delgado J, Puente X, Campo E. **Minimal spatial heterogeneity in chronic lymphocytic leukemia at diagnosis.** *Leukemia*. 34(7):1929-1933. I.F.: 8.665

9. Giménez N, Schulz R, Higashi M, Aymerich M, Villamor N, Delgado J, Juan M, López-Guerra M, Campo E, Rosich L, Seiffert M, Colomer D. **Targeting IRAK4 disrupts inflammatory pathways and delays tumor development in chronic lymphocytic leukemia.** *Leukemia*. 34(1):100-114. I.F.: 8.665

10. Mozas P, Nadeu F, Rivas-Delgado A, Rivero A, Garrote M, Balagué O, González-Farré B, Veloza L, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Magnano L, López-Guillermo A. **Patterns of change in treatment, response, and outcome in patients with follicular lymphoma over the last four decades: a single-center experience.** *Blood Cancer Journal*. 10(3):31. I.F.: 8.023

11. López-Guerra M, Xargay-Torrent S, Fuentes P, Roldán J, González-Farré B, Rosich L, Silkenstedt E, García-León MJ, Lee-Vergés E, Giménez N, Giró A, Aymerich M, Villamor N, Delgado J, López-Guillermo A, Puente XS, Campo E, Toribio ML, Colomer D. **Specific NOTCH1 antibody targets DLL4-induced proliferation, migration, and angiogenesis in NOTCH1-mutated CLL cells**. *Oncogene*. 39(6):1185-1197. I.F.: 7.971

12. Vidal-Crespo A, Matas-Céspedes A, Rodriguez V, Rossi C, Valero JG, Serrat N, Sanjuan-Pla A, Menéndez P, Roué G, López-Guillermo A, Giné E, Campo E, Colomer D, Bezombes C, van Bueren JL, Chiu C, Doshi P, Pérez-Galán P. **Daratumumab displays in vitro and in vivo anti-tumor activity in models of B-cell non-Hodgkin lymphoma and improves responses to standard chemo-immunotherapy regimens.** *Haematologica*. 105(4):1032-1041. I.F.: 7.116

13. Fuster C, Martín-Garcia D, Balagué O, Navarro A, Nadeu F, Costa D, Prieto M, Salaverria I, Espinet B, Rivas-Delgado A, Terol MJ, Giné E, Forcada P, Ashton-Key M, Puente XS, Swerdlow SH, Beà S, Campo E. **Cryptic insertions of the immunoglobulin light chain enhancer region near CCND1 in t(11;14)-negative mantle cell lymphoma**. *Haematologica*. 105(8):e408-e411. I.F.: 7.116

14. Tsagiopoulou M, Chapaprieta V, Duran-Ferrer M, Moysiadis T, Psomopoulos F, Kollia P, Papakonstantinou N, Campo E, Stamatopoulos K, Martin-Subero JI. **Chronic lymphocytic leukemias with trisomy 12 show a distinct DNA methylation profile linked to altered chromatin activation.** *Haematologica*. 105(12):2864-2867. I.F.: 7.116

15. Tomita S, Kikuti YY, Carreras J, Sakai R, Takata K, Yoshino T, Bea S, Campo E, Missiaglia E, Bouilly J, Letourneau A, de Leval L, Nakamura N. **Monomorphic epitheliotropic intestinal T-cell lymphoma in Asia frequently shows setd2 alterations.** *Cancers*. 12(12):3539. I.F.: 6.126

16. Castella M, Caballero-Baños M, Ortiz-Maldonado V, González-Navarro EA, Suñé G, Antoñana-Vidósola A, Boronat A, Marzal B, Millán L, Martín-Antonio B, Cid J, Lozano M, García E, Tabera J, Trias E, Perpiña U, Canals JM, Baumann T, Benítez-Ribas D, Campo E, Yagüe J, Urbano-Ispizua Á, Rives S, Delgado J, Juan M. **Point-of-care CAR T-cell production (ARI-0001) using a closed semi-automatic bioreactor: Experience from an academic phase i clinical trial.** *Frontiers In Immunology*. 11(482). I.F.: 5.085

17. Egan C, Laurent C, Alejo JC, Pileri S, Campo E, Swerdlow SH, Piris M, Chan WC, Warnke R, Gascoyne RD, Xi L, Raffeld M, Pittaluga S, Jaffe ES. **Expansion of PD1-positive T Cells in Nodal Marginal Zone Lymphoma: A Potential Diagnostic Pitfall.** *American Journal of Surgical Pathology*. 44(5):657-664. I.F.: 4.958

18. Nann D, Ramis-Zaldivar JE, Müller I, Gonzalez-Farre B, Schmidt J, Egan C, Salmeron-Villalobos J, Clot G, Mattern S, Otto F, Mankel B, Colomer D, Balagué O, Szablewski V, Lome-Maldonado C, Leoncini L, Dojcinov S, Chott A, Copie-Bergman C, Bonzheim I, Fend F, Jaffe ES, Campo E, Salaverria I, Quintanilla-Martinez L. **Follicular lymphoma t(14;18)-negative is genetically a heterogeneous disease.** *Blood Advances*. 4(22):5652-5665. I.F.: 4.910

19. Serrat N, Guerrero-Hernández M, Matas-Céspedes A, Yahiaoui A, Valero JG, Nadeu F, Clot G, Di Re M, Corbera-Bellalta M, Magnano L, Rivas-Delgado A, Enjuanes A, Beà S, Cid MC, Campo E, Montero J, Hodson DJ, López-Guillermo A, Colomer D, Tannheimer S, Pérez-Galán P. **PI3Kδ inhibition reshapes follicular lymphoma-immune microenvironment cross talk and unleashes the activity of venetoclax.** *Blood Advances*. 4(17):4217-4231. I.F.: 4.910

20. Gimenez N, Tripathi R, Giró A, Rosich L, López-Guerra M, López-Oreja I, Playa-Albinyana H, Arenas F, Mas JM, Pérez-Galán P, Delgado J, Campo E, Farrés J, Colomer D. **Systems biology drug screening identifies statins as enhancers of current therapies in chronic lymphocytic leukemia.** *Scientific Reports (Nature Publisher Group)*. 10(1):22153. I.F.: 3.998

21. Patil P, Cieslak A, Bernhart SH, Toprak UH, Wagener R, López C, Wiehle L, Bens S, Altmüller J, Franitza M, Scholz I, Jayne S, Ahearne MJ, Scheffold A, Jebaraj BMC, Schneider C, Costa D, Braun T, Schrader A, Campo E, Dyer MJS, Nürnberg P, Dürig J, Johansson P, Böttcher S, Schlesner M, Herling M, Stilgenbauer S, Macintyre E, Siebert R . **Reconstruction of rearranged T-cell receptor loci by whole genome and transcriptome sequencing gives insights into the initial steps of T-cell prolymphoc Ribociclib plus letrozole versus chemotherapy for postmenopausal women with hormone receptor-positive, HER2-negative ytic leukemia.** *Genes Chromosomes & Cancer*. 59(4):261-267. I.F.: 3.444

22. Croci GA, Hoster E, Beà S, Clot G, Enjuanes A, Scott DW, Cabeçadas J, Veloza L, Campo E, Clasen-Linde E, Goswami RS, Helgeland L, Pileri S, Rymkiewicz G, Reinke S, Dreyling M, Klapper W. **Reproducibility of histologic prognostic parameters for mantle cell lymphoma: cytology, Ki67, p53 and SOX11.** *Virchows Archiv*. 477(2):259-267. I.F.: 2.906

23. Benavente Y, Costas L, Rodríguez-Suarez MM, Alguacil J, Santibáñez M, Vila J, Robles C, Alonso E, de la Banda E, Gonzalez-Barca E, Dierssen-Sotos T, Gimeno Vazquez E, Aymerich M, Campo E, Jiménez-Moleón JJ, Marcos-Gragera R, Castaño-Vinyals G, Aragonés N, Pollan M, de Sanjose S, Kogevinas M, Tardón A, Casabonne D. **Occupational Exposure to Pesticides and Chronic Lymphocytic Leukaemia in the MCC-Spain Study.** *International Journal oOf Environmental Research And Public Health*. 17(14):5174. I.F.: 2.849

24. Boiza-Sanchez M, Manso R, Balague O, Chamizo C, Askari E, Salgado RN, Blas-Lopez C, Aguirregoicoa-Garcia E, Menarguez J, Santonja C, Adrados M, Limeres-Gonzalez MA, Piris MA, Rodriguez-Pinilla S. **Lymphoplasmacytic lymphoma associated with diffuse large B-cell lymphoma: Progression or divergent evolution?** *Plos One*. 15(11):e0241634. I.F.: 2.740

25. Mozas P, Rivas-Delgado A, Rivero A, Dlouhy I, Nadeu F, Balagué O, González-Farré B, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Pérez-Galán P, Filella X, Magnano L, López-Guillermo A. **High serum levels of IL-2R, IL-6, and TNF-α are associated with higher tumor burden and poorer outcome of follicular lymphoma patients in the rituximab era**. *Leukemia Research*. 94(106371):106371. I.F.: 2.214

26. Solans M, Romaguera D, Gracia-Lavedan E, Molinuevo A, Benavente Y, Saez M, Marcos-Gragera R, Costas L, Robles C, Alonso E, de la Banda E, Gonzalez-Barca E, Llorca J, Rodriguez-Suarez MM, Lozano-Lorca M, Aymerich M, Campo E, Gimeno-Vázquez E, Castaño-Vinyals G, Aragonés N, Pollán M, Kogevinas M, de Sanjose S, Amiano P, Casabonne D. **Adherence to the 2018 WCRF/AICR cancer prevention guidelines and chronic lymphocytic leukemia in the MCC-Spain study.** *Cancer Epidemiology*. 64(101629). I.F.: 2.179

27. Sorigue M, Junca J, Ferra C, Marce S, Ruiz-Xivillé N, Pinyol L, Cabezon M, Espasa A, Dominguez D, Lopez-Viaplana L, Ruiz R, Buch J, Plensa E, Mostacedo SZ, Aranda J, Vergara S, Raya M, Granada I, Tapia G, Navarro JT, Beà S, Zamora L . **FMOD expression in whole blood aids in distinguishing between chronic lymphocytic leukemia and other leukemic lymphoproliferative disorders**. *Cytometry Part B-Clinical Cytometry*. 98(5):421-428. I.F.: 2.070

28. Duran-Ferrer M, Clot G, Nadeu F, Beekman R, Baumann T, Nordlund J, Marincevic-Zuniga Y, Lonnerholm G , Rivas-Delgado A, Martin S, Ordonez R, Castellano G , Kulis M , Queiros AC, Lee ST, Wiemels J, Royo R, Puiggros M, Lu JY , Gine E, Bea S, Jares P, Agirre X, Prosper F, Lopez-Otin C, Puente XS, Oakes CC, Zenz T, Delgado J, Lopez-Guillermo A, Campo E, Martin-Sbero JI. **The proliferative history shapes the DNA methylome of B-cell tumors and predicts clinical outcome.** *Nature Cancer*. 1(11):1066-1081

Review / I.F.: 26.973

1. Nadeu F, Diaz-Navarro A, Delgado J, Puente X, Campo E. **Genomic and Epigenomic Alterations in Chronic Lymphocytic Leukemia.** *Annual Review of Pathology-Mechanisms of Disease*. 15:149-177. I.F.: 16.750

2. Delgado J. Nadeu F, Colomer D, Campo E. **Chronic lymphocytic leukemia: from molecular pathogenesis to novel therapeutic strategies. Haematologica.** 105(9):2205-2217. I.F.: 7.116

3. Navarro A, Beà S, Jares P, Campo E. **Molecular Pathogenesis of Mantle Cell Lymphoma.** *Hematology-Oncology Clinics of North America.* 34(5):795-807. I.F.: 3.107

Case Reports / I.F.: 16.477

1. Magnano L, Navarro A, López-Guerra M, Clot G, Beà S, Bastidas G, Costa D, Rivero A, Garrote M, Giné E, Rozman M, Aymerich M, Colomer D, López-Guillermo A, Campo E, Villamor N, Matutes E. Chronic lymphocytic leukemia and prolymphocytic leukemia. **Two coins or two sides of the same coin?** *Haematologica.* 105(9):E484-E487. I.F.: 7.116

2. Rodríguez-Pinilla SM, García FJS, Balagué O, Rodríguez-Justo M, Piris MÁ. **Breast implant-associated EBV-positive large B-cell lymphomas: report of three cases.** *Haematologica.* 105(8):e412-e414. I.F.: 7.116

3. Sanchez S, Veloza L, Wang L, López M, López-Guillermo A, Marginet M, Martínez A, Balagué O, Campo E. **HHV8-positive, EBV-positive Hodgkin lymphoma-like large B cell lymphoma: expanding the spectrum of HHV8 and EBV-associated lymphoproliferative disorders.** *International Journal of Hematology.* 112(5):734-740. I.F.: 2.245

Consortium Publications / I.F.: 42.779

1. ICGC/TCGA Pan-Cancer Analysis of Whole Genomes Consortium. **Pan-cancer analysis of whole genomes.** *Nature.* 578(7793):82-93. I.F.: 42.779

GRANTS FOR RESEARCH IN PROGRESS

Balagué O. **II Workshop de diagnóstico integrado en linfoma no hodgkin pediátrico.**
Sponsored by: Gilead Sciences (SLU).
GLD20_0010
Duration: 01/01/2020-29/04/2020

Beà S. **Resistance mechanisms of molecular targeted therapies in mantle Cell lymphoma (RESTMCL).**
Sponsored by: Fundació La Marató de TV3.
Cancer_19
Duration: 30/07/2020-29/07/2023

Beà S. **Caracterización de la inestabilidad genómica y las mutaciones somáticas en linfoma de células del manto y su impacto pronóstico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01061
Duration: 01/01/2018-31/12/2021

Beà S. **Mutational landscape of follicular lymphoma at late relapse, early failure and histological transformation.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_Proyectos18
Duration: 01/11/2018-31/10/2021

Campo E. **Patologia Molecular Oncològica (Prèviament Oncomorfologia Funcional Humana i Experimental).**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01142
Duration: 01/01/2017-30/09/2021

Campo E. **Genomic and epigenomic drivers of disease evolution in chronic lymphocytic leukemia. Targets for clinical intervention.**
Sponsored by: Fundació Bancaria "La Caixa".
HealthRes17-00221
Duration: 31/12/2018-30/12/2022

Campo E. **Functional and Clinical Impact of Genomic Analysis in CLL.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PMP15/00007
Duration: 01/01/2016-30/09/2020

Campo E. **Impacto clínico y biológico de las alteraciones genómicas en neoplasias linfoides.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_-SAF2016-81860-REDT
Duration: 01/07/2017-31/12/2020

Campo E. **Alteraciones genómicas y epigenómicas en la evolución de linfomas agresivos. Dianas para aplicaciones clínicas.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-094274-B-I00
Duration: 01/01/2019-31/12/2021

Campo E. **EUCANCan: a federated network of aligned and interoperable infrastructures for the homogeneous analysis, management and sharing of genomic oncology data for Personalized Medicine.**
Sponsored by: European Commission.
CE_H2020-SC1_18_1s
Duration: 01/01/2019-31/12/2022

Campo E. **Single-cell genomics to comprehensively understand healthy B-cell maturation and transformation chronic lymphocytic leukemia.**
Sponsored by: European Commission.
CE_H2020-ERC-2018_Sy
Duration: 01/04/2019-31/03/2024

Campo E. **Molecular Diagnosis, Prognosis, and Therapeutic Targets in Mantle Cell Lymphoma.**
Sponsored by: National Institutes of Health.
INT_NIH_PAR-16-457_01
Duration: 19/09/2018-31/08/2023

Hernández-Pous L. **Search of non-coding RNAs as new biomarkers and targets for improving the response to Ibrutinib treatment in CLL.**
Sponsored by: Fundació La Marató de TV3.
Cancer_19
Duration: 30/09/2020-29/09/2023

Jares P. **Caracterizar el estrés transcripcional y el de replicación inducidos por la sobreexpresión de ciclina D1 en células B, relevancia en la patogénesis del LCM y potenciales implicaciones terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01838
Duration: 01/01/2020-31/12/2022

DOCTORAL THESES

Campo E, Martinez A. **Microambiente tumoral en síndromes linfoproliferativos de células B: estudio en los modelos de síndromes linfoproliferativos post-trasplante y linfomas de células del manto.**
PhD student: Luis Alberto Veloza Cabrera

Campo E. **Genomic determinants of chronic lymphocytic leukemia progression: from individual drivers to a heterogeneous genetic makeup.**
PhD student: Ferran Nadeu Prat

5.5 Myeloid neoplasms

LOCATION
CEK building, floor 2

KEYWORDS
1. **Genomic profile**
2. **Myeloproliferative neoplasms**
3. **Acute myeloid leukemia**

RELATED DISEASES
1. **Primary myelofibrosis**
2. **Chronic myeloid leukemia**
3. **Essential thrombocythemia**
4. **Polycythemia vera**
5. **Myelodysplastic syndrome**
6. **Acute myeloid leukemia**
7. **Acute lymphoblastic leukemia**

GROUP INVOLVED IN
RTICC
AGAUR_SGR17: 01655

Original publications

TOTAL	26
I.F.	225,02
Mean I.F.	8,65
Q1	65%
D1	35%
MA	23%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Francisco Cervantes (HCB)
T. 93 227 54 28
fcervan@clinic.cat

RESEARCHERS
Alberto Álvarez Larrán (HCB)
Marina Díaz Beyá (HCB)
Jordi Esteve (HCB)

PRE-DOCTORAL RESEARCHERS
Alex Bataller (FCRB)
Juan Gonzalo Correa (HCB)
Daniel Esteban (FCRB)
Marta Garrote (HCB)
Anna Gaya (FCRB)
Francisca Guijarro (HCB)

ADMINISTRATIVE STAFF
Marta Bistagne (HCB)

PROBLEM

In recent years there have been important advances in the treatment of patients with haematologic neoplasms. But for a significant proportion of these patients, the benefits obtained, in terms of both treatment response and survival, are still limited.

In view of this situation, greater knowledge of the biology of these neoplasms is sure to contribute to the improvement of therapeutic results and, therefore, of the prognosis and survival of patients.

APPROACH

The strategy of the group is the analysis of genomics of diverse myeloid neoplasms for a more precise estimation of risk and refined prediction of response to main treatment strategies.

The group is also deeply committed to the search of novel therapeutic agents for these diseases, including the development of innovative immunotherapy strategies and targeting novel pathways.

IMPACT

The results of the group's research have contributed to a more precise evaluation of transplantation outcome based on AML genetic features; the evaluation of a preemptive strategy based on measurable residual disease (MRD) monitoring in NPM1-mutated AML; development of novel agents in clinical practice; and estimation of the thrombotic risk and prognosis of myeloproliferative neoplasms.

RESEARCH LINES

- Elucidation of natural history and prognostic factors of myeloproliferative neoplasms.

- Prognostic impact of main AML genetic drivers on treatment outcome, including allogeneic hematopoietic transplantation .

- Role of non-coding RNA in AML.

- Development of novel agents for myeloid neoplasms and paroxysmal nocturnal hemoglobinuria (PNH) .

PUBLICATIONS

Originals / I.F.: 225.016

1. DiNardo CD, Jonas BA, Pullarkat V, Thirman MJ, Garcia JS, Wei AH, Konopleva M, Döhner H, Letai A, Fenaux P, Koller E, Havelange V, Leber B, Esteve J, Wang J, Pejsa V, Hájek R, Porkka K, Illés Á, Lavie D, Lemoli RM, Yamamoto K, Yoon SS, Jang JH, Yeh SP, Turgut M, Hong WJ, Zhou Y, Potluri J, Pratz KW. **Azacitidine and Venetoclax in Previously Untreated Acute Myeloid Leukemia.** *New England Journal of Medicine.* 383(7):617-629. I.F.: 74.699

2. De Stefano, Valerio; Ghirardi, Arianna; Masciulli, Arianna; Carobbio, Alessandra; Palandri, Francesca; Vianelli, Nicola; Rossi, Elena; Betti, Silvia; Di Veroli, Ambra; Iurlo,

Alessandra; Cattaneo, Daniele; Finazzi, Guido; Bonifacio, Massimiliano; Scaffidi, Luigi; Patriarca, Andrea; Rumi, Elisa; Casetti, Ilaria Carola; Stephenson, Clemency; Guglielmelli, Paola; Elli, Elena Maria; Palova, Miroslava; Rapezzi, Davide; Erez, Daniel; Gomez, Montse; Wille, Kai; Perez-Encinas, Manuel; Lunghi, Francesca; Angona, Anna; Laura Fox, Maria; Beggiato, Eloise; Benevolo, Giulia; Carli, Giuseppe; Cacciola, Rossella; McMullin, Mary Frances; Tieghi, Alessia; Recasens, Valle; Isfort, Susanne; Marchetti, Monia; Griesshammer, Martin; Alvarez-Larran, Alberto; Vannucchi, Alessandro Maria; Rambaldi, Alessandro; Barbui, Tiziano. **Arterial thrombosis in Philadelphia-negative myeloproliferative neoplasms predicts second cancer. A case-control study**. *Blood*. 135(5):381-386. I.F.: 17.794

3. Baroni ML; Sanchez Martinez D; Gutierrez Aguera F; Roca Ho H; Castella M; Zanetti S; Velasco Hernandez T; Diaz de la Guardia R; Castaño J; Anguita E; Vives S; Nomdedeu J; Lapillone H; Bras AE; van der Velden VHJ; Junca J; Marin P; Bataller A; Esteve J; Vick B; Jeremias I; Lopez A; Sorigue M; Bueno C; Menendez P. **41BB-based and CD28-based CD123-redirected T-cells ablate human normal hematopoiesis in vivo.** *Journal for Immunotherapy of Cancer*. 8(1). I.F.: 10.252

4. Bazarbachi A, Schmid C, Labopin M, Beelen D, Wolfgang Blau I, Potter V, Niittyvuopio R, Socié G, Blaise D, Sanz J, Ciceri F, Abou Dalle I, Spyridonidis A, Bug G, Esteve J, Savani BN, Nagler A, Mohty M. **Evaluation of Trends and Prognosis Over Time in Patients with AML Relapsing After Allogeneic Hematopoietic Cell Transplant Reveals Improved Survival for Young Patients in Recent Years.** *Clinical Cancer Research*. 26(24):6475-6482. I.F.: 10.107

5. Díaz-Santa J, Rodríguez-Romanos R, Osca G, Pratcorona M, Garrido A, Coll R, Moret C, Escoda L, Tormo M, Heras I, Arnan M, Vives S, Salamero O, Lloveras N, Bargay J, Sampol A, Cruz D, Garcia A, Quiñones T, Esteve J, Sierra J, Gallardo D, on the behalf of CETLAM Group. **UGT1A1 genotype influences clinical outcome in patients with intermediate-risk acute myeloid leukemia treated with cytarabine-based chemotherapy.** *Leukemia*. 34(11):2925-2933. I.F.: 8.665

6. Pfirrmann M, Clark RE, Prejzner W, Lauseker M, Baccarani M, Saussele S, Guilhot F, Heibl S, Hehlmann R, Faber E, Turkina A, Ossenkoppele G, Höglund M, Zaritskey A, Griskevicius L, Olsson-Strömberg U, Everaus H, Koskenvesa P, Labar B, Sacha T, Zackova D, Cervantes F, Colita A, Zupan I, Bogdanovic A, Castagnetti F, Guilhot J, Hasford J, Hochhaus A, Hoffmann VS. **The EUTOS long-term survival (ELTS) score is superior to the Sokal score for predicting survival in chronic myeloid leukemia.** *Leukemia*. 34(8):2138-2149. I.F.: 8.665

7. Nagler A; Dholaria B; Labopin M; Socie G; Huynh A; Itälä-Remes M; Deconinck E; Yakoub-Agha I; Cahn JY; Bourhis JH; Labussière-Wallet H; Chantepie S; Esteve J; Savani B; Mohty M. **The impact of anti-thymocyte globulin on the outcomes of Patients with AML with or without measurable residual disease at the time of allogeneic hematopoietic cell transplantation.** *Leukemia*. 34(4):1144-1153. I.F.: 8.665

8. Halaburda K; Labopin M; Mailhol A; Socié G; Craddock C; Aljurf M; Beelen D; Cornelissen JJ; Bourhis JH; Labussière-Wallet H; Blaise D; Gedde-Dahl T; Gilleece M; Yakoub-Agha I; Mufti G; Esteve J; Mohty M; Nagler A. **Allogeneic stem cell transplantation in second complete remission for core binding factor acute myeloid leukemia: A study from the acute leukemia working party of the european society for blood and marrow transplantation.** *Haematologica*. 105(6):1723-1730. I.F.: 7.116

9. Poiré X; Labopin M; Polge E; Forcade E; Ganser A; Volin L; Michallet M; Blaise D; Yakoub-Agha I; Maertens J; Espiga CR; Cornelissen J; Finke J; Mohty M; Esteve J; Nagler A. **Allogeneic stem cell transplantation using HLA-matched donors for acute myeloid leukemia with deletion 5q or monosomy 5: A study from the Acute Leukemia Working Party of the EBMT**. *Haematologica*. 105(2):414-423. I.F.: 7.116

10. Poiré X; Labopin M; Polge E; Volin L; Finke J; Ganser A; Blaise D; Yakoub-Agha I; Beelen D; Forcade E; Lioure B; Socié G; Niederwieser D; Labussière-Wallet H; Maertens J; Cornelissen J; Craddock C; Mohty M; Esteve J; Nagler A. **The impact of concomitant cytogenetic abnormalities on acute myeloid leukemia with monosomy 7 or deletion 7q after HLA-matched allogeneic stem cell transplantation.** *American Journal of Hematology*. 95(3):282-294. I.F.: 6.973

11. Sant'Antonio E, Guglielmelli P, Pieri L, Primignani M, Randi ML, Santarossa C, Rumi E, Cervantes F, Delaini F, Carobbio A, Betti S, Rossi E, Lavi N, Harrison CN, Curto-Garcia N, Gisslinger H, Gisslinger B, Specchia G, Ricco A, Vianelli N, Polverelli N, Koren-Michowitz M, Ruggeri M, Girodon F, Ellis M, Iurlo A, Mannelli F, Mannelli L, Sordi B, Loscocco GG, Cazzola M, De Stefano V, Barbui T, Tefferi A, Vannucchi AM. **Splanchnic Vein Thromboses associated with Myeloproliferative Neoplasms: an international, retrospective study on 518 cases.** *American Journal of Hematology*. 95(2):156-166. I.F.: 6.973

12. Mora B, Guglielmelli P, Rumi E, Maffioli M, Barraco D, Rambaldi A, Caramella M, Komrokji RS, Kiladjian JJ, Gotlib J, Iurlo A, Cervantes F, Devos T, Palandri F, De Stefano V, Ruggeri M, Silver RT, Albano F, Benevolo G, Cavalloni C, Uccella S, Accetta R, Siracusa C, Agnoli S, Merli M, Barbui T, Bertù L, Cazzola M, Vannucchi AM, Passamonti F. **Impact of bone marrow fibrosis grade in post-polycythemia vera and post-essential thrombocythemia myelofibrosis: A study of the MYSEC group.** *American Journal of Hematology*. 95(1):E1-E3. I.F.: 6.973

13. Bataller A, Oñate G, Diaz-Beyá M, Guijarro F, Garrido A, Vives S, Tormo M, Arnan M, Salamero O, Sampol A, Coll R, Vall-Llovera F, Oliver-Caldés A, López-Guerra M, Pratcorona M, Zamora L, Villamon E, Roué G, Blanco A, Nomdedeu JF, Colomer D, Brunet S, Sierra J, Esteve J, Grupo Cooperativo Para el Estudio y Tratamiento de las Leucemias Agudas y Mielodisplasias (CETLAM). **Acute myeloid leukemia with NPM1 mutation and favorable European LeukemiaNet category: outcome after preemptive intervention based on measurable residual disease.** *British Journal of Haematology*. 191(1):52-61. I.F.: 5.518

14. Díaz-Beyá M, Labopin M, Maertens J, Alijurf M, Passweg J, Dietrich B, Schouten H, Socié G, Schaap N, Schwerdtfeger R, Volin L, Michallet M, Polge E, Sierra J, Mohty M, Esteve J, Nagler A, Acute Leukaemia Working Party (ALWP) of the European Society for Blood and Marrow Transplantation (EBMT). **Allogeneic stem cell transplantation in AML with t(6;9)(p23;q34); DEK-NUP214 shows a favourable outcome when performed in first complete remission.** *British Journal of Haematology*. 189(5):920-925. I.F.: 5.518

15. Gupta V, Wolleschak D, Hasselbalch H, Vannucchi AM, Koschmieder S, Cervantes F, Li Y, Dong T, Wroclawska M, Bharathy S, Harrison C . **Safety and efficacy of the combination of sonidegib and ruxolitinib in myelofibrosis: a phase 1b/2 dose-finding study**. *Blood Advances*. 4(13):3063-3071. I.F.: 4.910

16. Shouval R; Labopin M; Bomze D; Baerlocher GM; Capria S; Blaise D; Hänel M; Forcade E; Huynh A; Saccardi R; Milone G; Zuckerman T; Reményi P; Versluis J; Esteve J; Gorin NC; Mohty M; Nagler A. **Risk stratification using FLT3 and NPM1 in acute myeloid leukemia patients autografted in first complete remission.** *Bone Marrow Transplantation.* 55(12):2244-2253. I.F.: 4.725

17. Spyridonidis A; Labopin M; Savani BN; Niittyvuopio R; Blaise D; Craddock C; Socié G; Platzbecker U; Beelen D; Milpied N; Cornelissen JJ; Ganser A; Huynh A; Griskevicius L; Giebel S; Brissot E; Malard F; Esteve J; Peric Z; Baron F; Ruggeri A; Schmid C; Gilleece M; Gorin NC; Lanza F; Shouval R; Versluis J; Bug G; Fløisand Y; Ciceri F; Sanz J; Bazarbachi A; Nagler A; Mohty M. **Redefining and measuring transplant conditioning intensity in current era: a study in acute myeloid leukemia patients.** *Bone Marrow Transplantation.* 55(6):1114-1125. I.F.: 4.725

18. Cornet-Masana JM; Banús-Mulet A; Cuesta-Casanovas L; Carbó JM; Guijarro F; Torrente MÁ; Esteve J; Risueño RM. **Histamine receptor 1 is expressed in leukaemic cells and affects differentiation sensitivity.** *Journal of Cellular and Molecular Medicine.* 24(22):13536-13541. I.F.: 4.486

19. Hernández-Boluda JC, Pereira A, Alvarez-Larran A, Martín AA, Benzaquen A, Aguirre L, Mora E, González P, Mora J, Dorado N, Sampol A, García-Gutiérrez V, López-Godino O, Fox ML, Reguera JL, Pérez-Encinas M, Pascual MJ, Xicoy B, Parody R, González-Pinedo L, Español I, Avendaño A, Correa JG, Vallejo C, Jurado M, García-Cadenas I, Osorio S, Durán MA, Sánchez-Guijo F, Cervantes F, Piñana JL . **Predicting Survival after Allogeneic Hematopoietic Cell Transplantation in Myelofibrosis: Performance of the Myelofibrosis Transplant Scoring System (MTSS) and Development of a New Prognostic Model: Prognostication in myelofibrosis.** *Biology of Blood and Marrow Transplantation.* 26(12):2237-2244. I.F.: 3.853

20. Alvarez-Larrán A, Pereira A, Magaz M, Hernández-Boluda JC, Garrote M, Cuevas B, Ferrer-Marín F, Gómez-Casares MT, García-Gutiérrez V, Mata-Vázquez MI, Turon F, Hernandez-Gea V, Arellano-Rodrigo E, Cervantes F, García-Pagán JC, GEMFIN and REHEVASC groups. **Natural history of polycythemia vera and essential thrombocythemia presenting with splanchnic vein thrombosis.** *Annals of Hematology.* 99(4):791-798. I.F.: 2.904

21. Bussaglia E, Pratcorona M, Carricondo M, Sansegundo L, Rubio MA, Monter A, Brell A, Badell I, Esteve J, Arnan M, Talarn C, Tormo M, García A, Vall-Llovera F, Ortin X, Pedro C, Bargay J, Brunet S, Sierra J, Nomdedéu J. **Application of a digital PCR method for WT1 to myeloid neoplasms in CR and deep ELN WT1 molecular response (< 10 copies).** *Annals of Hematology.* 99(4):765-772. I.F.: 2.904

22. Peipert JD; Kulasekararaj AG; Gaya A; Langemeijer SMC; Yount S; Gonzalez-Fernandez FA; Gutierrez EO; Martens C; Sparling A; Webster KA; Cella D; Tomazos I; Ogawa M; Piatek CI; Wells R; de Fontbrune FS; Röth A; Mitchell L; Hill A; Kaiser K. **Patient preferences and quality of life implications of ravulizumab (every 8 weeks) and eculizumab (every 2 weeks) for the treatment of paroxysmal nocturnal hemoglobinuria.** *Plos One.* 15(9 September):e0237497. I.F.: 2.740

23. Montesinos P; Beckermann BM; Catalani O; Esteve J; Gamel K; Konopleva MY; Martinelli G; Monnet A; Papayannidis C; Park A; Récher C; Rodríguez-Veiga R; Röllig C; Vey N; Wei AH; Yoon SS; Fenaux P. **MIRROS: A randomized, placebo-controlled, Phase III trial of cytarabine ± idasanutlin in relapsed or refractory acute myeloid leukemia.** *Future Oncology.* 16(13):807-815. I.F.: 2.660

24. Sobas M, Rodriguez-Veiga R, Vellenga E, Paluszewska M, De la Serna J, García-Álvarez F, Gil C, Brunet S, Bergua J, González-Campos J, Ribera JM, Tormo M, González M, Fernández I, Benavente C, González-Sanmiguel JD, Esteve J, Pérez-Encinas M, Salamero O, Manso F, Lowenberg B, Sanz MA, Montesinos P, PETHEMA, HOVON, PALG, GATLA cooperative groups. **Characteristics and outcome of adult patients with acute promyelocytic leukemia and increased body mass index treated with the PETHEMA Protocols.** *European Journal of Haematology.* 104(3):162-169. I.F.: 2.220

25. Sitges M, Boluda B, Garrido A, Morgades M, Granada I, Barragan E, Arnan M, Serrano J, Tormo M, Miguel Bergua J, Colorado M, Salamero O, Esteve J, Benavente C, Pérez-Encinas M, Coll R, Martí-Tutusaus JM, Brunet S, Sierra J, Ángel Sanz M, Montesinos P, Ribera JM, Vives S, PETHEMA, CETLAM cooperative groups. **Acute myeloid leukemia with inv(3)(q21.3q26.2)/t(3;3)(-q21.3;q26.2): Study of 61 patients treated with intensive protocols.** *European Journal of Haematology.* 105(2):138-147. I.F.: 2.997

26. Pastor-Galán I, Hernández-Boluda JC, Correa JG, Alvarez-Larrán A, Ferrer-Marín F, Raya JM, Ayala R, Velez P, Pérez-Encinas M, Estrada N, García-Gutiérrez V, Fox ML, Payer A, Kerguelen A, Cuevas B, Durán MA, Ramírez MJ, Gómez-Casares MT, Mata-Vázquez MI, Mora E, Martínez-Valverde C, Arbelo E, Angona A, Magro E, Antelo ML, Somolinos N, Cervantes F, en representación del Grupo Español de Enfermedades Mieloproliferativas Filadelfia Negativas (GEMFIN). **Clinico-biological characteristics of patients with myelofibrosis: an analysis of 1,000 cases from the Spanish Registry of Myelofibrosis.** *Medicina Clinica.* 155(4):152-158. I.F.: 1.635

Review / I.F.: 21.907

1. Hochhaus A, Baccarani M, Silver RT, Schiffer C, Apperley JF, Cervantes F, Clark RE, Cortes JE, Deininger MW, Guilhot F, Hjorth-Hansen H, Hughes TP, Janssen JJWM, Kantarjian HM, Kim DW, Larson RA, Lipton JH, Mahon FX, Mayer J, Nicolini F, Niederwieser D, Pane F, Radich JP, Rea D, Richter J, Rosti G, Rousselot P, Saglio G, Saußele S, Soverini S, Steegmann JL, Turkina A, Zaritskey A, Hehlmann R. **European LeukemiaNet 2020 recommendations for treating chronic myeloid leukemia.** *Leukemia.* 34(4):966-984. I.F.: 8.665

2. Bazarbachi A, Bug G, Baron F, Brissot E, Ciceri F, Dalle IA, Döhner H, Esteve J, Floisand Y, Giebel S, Gilleece M, Gorin NC, Jabbour E, Aljurf M, Kantarjian H, Kharfan-Dabaja M, Labopin M, Lanza F, Malard F, Peric Z, Prebet T, Ravandi F, Ruggeri A, Sanz J, Schmid C, Shouval R, Spyridonidis A, Versluis J, Vey N, Savani BN, Nagler A, Mohty M. **Clinical practice recommendation on hematopoietic stem cell transplantation for acute myeloid leukemia patients with FLT3 internal tandem duplication: a position statement from the Acute Leukemia Working Party of the European Society for Blood and Marrow Transplantation.** *Haematologica.* 105(6):1507-1516. I.F.: 7.116

3. Sobas M; Talarn-forcadell MC; Martínez-cuadrón D; Escoda L; García-pérez MJ; Mariz J; Mela-osorio MJ; Fernández I; Alonso-domínguez JM; Cornago-navascués J; Rodríguez-macias G; Amutio ME; Rodríguez-medina C; Esteve J; Sokół A; Murciano-carrillo T; Calasanz MJ; Barrios M; Barragán E; Sanz MA; Montesinos P. **Plzf-rar α, npm1-rarα, and other acute promyelocytic leukemia variants: The pethema registry experience and systematic literature review.** *Cancers.* 12(5):1313. I.F.: 6.126

Clinical Guidelines / I.F.: 7.116

1. Dholaria B; Savani BN; Labopin M; Luznik L; Ruggeri A; Mielke S; Al Malki MM; Kongtim P; Fuchs E; Huang XJ; Locatelli F; Aversa F; Castagna L; Bacigalupo A; Martelli M; Blaise D; Soussan PB; Arnault Y; Handgretinger R; Roy DC; O'Donnell P; Bashey A; Solomon S; Romee R; Lewalle P; Gayoso J; Maschan M; Lazarus HM; Ballen K; Giebel S; Baron F; Ciceri F; Esteve J; Gorin NC; Spyridonidis A; Schmid C; Ciurea SO; Nagler A; Mohty M. **Clinical applications of donor lymphocyte infusion from an HLA-haploidentical donor: Consensus recommendations from the Acute Leukemia Working Party of the EBMT.** *Haematologica*. 105(1):47-58. I.F.: 7.116

Consortium Publications / I.F.: 8.665

1. Hochhaus A, Gambacorti-Passerini C, Abboud C, Gjertsen BT, Brümmendorf TH, Smith BD, Ernst T, Giraldo-Castellano P, Olsson-Strömberg U, Saussele S, Bardy-Bouxin N, Viqueira A, Leip E, Russell-Smith TA, Leone J, Rosti G, Watts J, Giles FJ, BYOND Study Investigators. **Bosutinib for pretreated patients with chronic phase chronic myeloid leukemia: primary results of the phase 4 BYOND study.** *Leukemia*. 34(8):2125-2137. I.F.: 8.665

GRANTS FOR RESEARCH IN PROGRESS

Álvarez-Larrán A. **Evolución natural, caracterización molecular y disfunción endotelial de las neoplasias mieloproliferativas que debutan en forma de trombosis esplácnica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00205
Duration: 01/01/2019-31/12/2021

Esteve J, Día-Beyá M. **Caracterización genética de la leucemia mieloblástica aguda de riesgo citogenético intermedio y genotipo NPM1/CEBPA/FLT3-ITD triple negativo; análisis mutacional, expresión de lncRNAs.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/01027
Duration: 01/01/2017-31/12/2020

Esteve J, Día-Beyá M. **Caracterización clínico-biológica de la leucemia mieloide aguda no definida molecularmente: perfil mutacional y de expresión génica, arquitectura clonal, pronóstico y sensibilidad a nuevos tratamientos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01476
Duration: 01/01/2020-31/12/2022

Esteve J. **Lysosomal impairment-based therapeutic approach for leukemia.**
Sponsored by: Fundació La Marató de TV3. Cancer_19
Duration: 30/07/2020-29/07/2023

5.6 Experimental therapies in lymphoid neoplasms

LOCATION
CEK building, floor 2

KEYWORDS
1. **Hematological malignancies**
2. **Targeted therapies**
3. **Preclinical models**

RELATED DISEASES
1. **Lymphoid malignancies**
2. **Chronic lymphocytic leukemia**
3. **Mantle cell lymphoma**

GROUP INVOLVED IN
CIBERONC
AGAUR_SGR17:1009

Original publications

TOTAL	22
I.F.	133,85
Mean I.F.	6,08
Q1	77%
D1	36%
MA	18%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Dolors Colomer (HCB)
T. 93 227 54 00 (Ext.: 2269)
dcolomer@clinic.cat

RESEARCHERS
Marta Aymerich (HCB)
Mª Teresa Estrach (HCB)
Mónica López Guerra (HCB)
María Rozman (HCB)
Neus Villamor (HCB)

ASSISTANT RESEARCHERS
Fabian Arenas (CIBER)

POST-DOCTORAL RESEARCHERS
Laia Rosich (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Irene López Oreja (IDIBAPS)
Heribert Playà (CIBER)

TECHNICIANS
Ariadna Giró (CIBER)

PROBLEM

Recently, a large number of genetic alterations have been identified that have opened up a wide range of possibilities for the discovery of new therapeutic strategies and new predictive markers for lymphoid B neoplasms. Although more effective therapies have been developed lately, as yet there is still no curative treatment for these diseases.

In addition, the generation of resistance (due to the heterogeneity of both the tumour and the accompanying cells, the tumour microenvironment) is an obstacle to success in the long term.

APPROACH

The group's research focuses on the development and validation of new specific therapies, on the search for possible combinations with other drugs and on the study of resistance in preclinical models of chronic lymphatic leukaemia (CLL) and mantle cell lymphoma (MCL).

To carry out this experimental work, the group evaluates the efficacy of new drugs in isolated tumour cells of patients, in cellular lines and in animal models, taking into account the interaction between the tumour cell and its microenvironment.

IMPACT

The group wants to make sure that the experimental results have practical benefits and serve to improve patients' quality of life and life expectancy. The project is based on the development of new preclinical therapies, on the validation of these experimental results in mouse models, and on describing both the action and the resistance mechanisms.

The aim is that the results can be applied to clinical practice and thus to create personalised therapies based on the optimisation of treatment for each patient, improving benefits and avoiding adverse side effects.

RESEARCH LINES

- Characterization of the functional impact of driver mutations and the analysis of new potential therapeutic approaches.

- Development of predictive models recapitulating tumor heterogeneity and their impact on disease evolution, therapy resistance and susceptibility to novel targeted therapies.

- Mechanisms of resistance to targeted therapy.

PUBLICATIONS

Originals / I.F.: 133.848

1. Nadeu F, Martin-Garcia D, Clot G, Díaz-Navarro A, Duran-Ferrer M, Navarro A, Vilarrasa-Blasi R, Kulis M, Royo R, Gutiérrez-Abril J, Valdés-Mas R, López C, Chapaprieta V, Puiggros M, Castellano G, Costa D, Aymerich M, Jares P, Espinet B, Muntañola A, Ribera-Cortada I, Siebert R, Colomer D, Torrents D, Gine E, López-Guillermo A, Küppers R, Martin-Subero JI, Puente XS, Beà S, Campo E. **Genomic and epigenomic insights into the origin, pathogenesis and clinical behavior of mantle cell lymphoma subtypes.** *Blood.* 136(12):1419-1432. I.F.: 17.794

2. Nadeu F, Mas-de-Les-Valls R, Navarro A, Royo R, Martín S, Villamor N, Suárez-Cisneros H, Mares R, Lu J, Enjuanes A, Rivas-Delgado A, Aymerich M, Baumann T, Colomer D, Delgado J, Morin RD, Zenz T, Puente XS, Campbell PJ, Beà S, Maura F, Campo E. **IgCaller for reconstructing immunoglobulin gene rearrangements and oncogenic translocations from whole-genome sequencing in lymphoid neoplasms.** *Nature Communications.* 11(1):3390. I.F.: 12.121

3. Massoni-Badosa R; Iacono G; Moutinho C; Kulis M; Palau N; Marchese D; Rodríguez-Ubreva J; Ballestar E; Rodriguez-Esteban G; Marsal S; Aymerich M; Colomer D; Campo E; Julià A; Martín-Subero JI; Heyn H. **Sampling time-dependent artifacts in single-cell genomics studies.** *Genome Biology.* 21(1):112. I.F.: 10.806

4. Giménez N, Schulz R, Higashi M, Aymerich M, Villamor N, Delgado J, Juan M, López-Guerra M, Campo E, Rosich L, Seiffert M, Colomer D. **Targeting IRAK4 disrupts inflammatory pathways and delays tumor development in chronic lymphocytic leukemia.** *Leukemia.* 34(1):100-114. I.F.: 8.665

5. Mozas P, Nadeu F, Rivas-Delgado A, Rivero A, Garrote M, Balagué O, González-Farré B, Veloza L, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Magnano L, López-Guillermo A . **Patterns of change in treatment, response, and outcome in patients with follicular lymphoma over the last four decades: a single-center experience.** *Blood Cancer Journal.* 10(3):31. I.F.: 8.023

6. López-Guerra M, Xargay-Torrent S, Fuentes P, Roldán J, González-Farré B, Rosich L, Silkenstedt E, García-León MJ, Lee-Vergés E, Giménez N, Giró A, Aymerich M, Villamor N, Delgado J, López-Guillermo A, Puente XS, Campo E, Toribio ML, Colomer D. **Specific NOTCH1 antibody targets DLL4-induced proliferation, migration, and angiogenesis in NOTCH1-mutated CLL cells.** *Oncogene.* 39(6):1185-1197. I.F.: 7.971

7. Vidal-Crespo A; Matas-Céspedes A; Rodriguez V; Rossi C; Valero JG; Serrat N; Sanjuan-Pla A; Menéndez P; Roué G; López-Guillermo A; Giné E; Campo E; Colomer D; Bezombes C; van Bueren JL; Chiu C; Doshi P; Pérez-Galán P. **Daratumumab displays in vitro and in vivo anti-tumor activity in models of B-cell non-Hodgkin lymphoma and improves responses to standard chemo-immunotherapy regimens.** *Haematologica.* 105(4):1032-1041. I.F.: 7.116

8. Muñoz-García N, Jara-Acevedo M, Caldas C, Bárcena P, López A, Puig N, Alcoceba M, Fernández P, Villamor N, Flores-Montero JA, Gómez K, Lemes MA, Hernández JC, Álvarez-Twose I, Guerra JL, González M, Orfao A, Almeida J . **STAT3 and STAT5B Mutations in T/NK-Cell Chronic Lymphoproliferative Disorders of Large Granular Lymphocytes (LGL): Association with Disease Features.** *Cancers.* 12(12):3508-20. I.F.: 6.126

9. Stuckey R, Casado LF, Colomer D, Gómez-Casares MT, Casas L, García-Gutierrez V, Sastre JL, Ramírez-Payer Á, Vall-Llovera F, Goñi MÁ, Xicoy B, Godoy AC, Núñez J, Mora I, Vallansot R, López-Lorenzo JL, Palomera L, Conesa V, Noya MS, Sánchez-Guijo F, Peña A, Bautista G, Steegmann JL. **Early prediction of subsequent molecular response to nilotinib in patients with chronic myeloid leukemia: Comparison of the quantification of BCR-ABL1 ratios using ABL1 or GUSB control genes**. *Journal of Molecular Diagnostics.* 22(10):1217-1224. I.F.: 5.553

10. Bataller A, Oñate G, Diaz-Beyá M, Guijarro F, Garrido A, Vives S, Tormo M, Arnan M, Salamero O, Sampol A, Coll R, Vall-Llovera F, Oliver-Caldés A, López-Guerra M, Pratcorona M, Zamora L, Villamon E, Roué G, Blanco A, Nomdedeu JF, Colomer D, Brunet S, Sierra J, Esteve J, Grupo Cooperativo Para el Estudio y Tratamiento de las Leucemias Agudas y Mielodisplasias (CETLAM). **Acute myeloid leukemia with NPM1 mutation and favorable European LeukemiaNet category: outcome after preemptive intervention based on measurable residual disease.** *British Journal of Haematology.* 191(1):52-61. I.F.: 5.518

11. Roessner, Philipp M; Hanna, Bola S; Ozturk, Selcen; Schulz, Ralph; Cid, Laura Llao; Yazdanparast, Haniyeh; Scheffold, Annika; Colomer, Dolors; Stilgenbauer, Stephan; Lichter, Peter; Seiffert, Martina. **TBET-expressing Th1 CD4(+) T cells accumulate in chronic lymphocytic leukaemia without affecting disease progression in E mu-TCL1 mice.** *British Journal of Haematology.* 189(1):133-145. I.F.: 5.518

12. Fernández-de-Misa R, Hernández-Machín B, Combalía A, García Muret MP, Servitje O, Muniesa C, Gallardo F, Pujol RM, Martí RM, Ortiz-Brugués A, Maroñas-Jiménez L, Ortiz-Romero PL, Blanch Rius L, Izu R, Román C, Cañueto J, Blanes M, Morillo M, Bastida J, Peñate Y, Pérez Gala S, Espinosa Lara P, Pérez Gil A, Estrach T. **Prognostic factors in patients with primary cutaneous anaplastic large cell lymphoma: a multicentric, retrospective analysis of the Spanish Group of Cutaneous Lymphoma.** *Journal of The European Academy of Dermatology and Venereology.* 34(4):762-768. I.F.: 5.248

13. Nann D, Ramis-Zaldivar JE, Müller I, Gonzalez-Farre B, Schmidt J, Egan C, Salmeron-Villalobos J, Clot G, Mattern S, Otto F, Mankel B, Colomer D, Balagué O, Szablewski V, Lome-Maldonado C, Leoncini L, Dojcinov S, Chott A, Copie-Bergman C, Bonzheim I, Fend F, Jaffe ES, Campo E, Salaverria I, Quintanilla-Martinez L. **Follicular lymphoma t(14;18)-negative is genetically a heterogeneous disease.** *Blood Advances.* 4(22):5652-5665. I.F.: 4.910

14. Serrat N, Guerrero-Hernández M, Matas-Céspedes A, Yahiaoui A, Valero JG, Nadeu F, Clot G, Di Re M, Corbera-Bellalta M, Magnano L, Rivas-Delgado A, Enjuanes A, Beà S, Cid MC, Campo E, Montero J, Hodson DJ, López-Guillermo A, Colomer D, Tannheimer S, Pérez-Galán P . **PI3Kδ inhibition reshapes follicular lymphoma-immune microenvironment cross talk and unleashes the activity of venetoclax.** *Blood Advances.* 4(17):4217-4231. I.F.: 4.910

15. Arenas, Fabian; Castro, Fernanda; Nunez, Susana; Gay, Gemma; Garcia-Ruiz, Carmen; Fernandez-Checa, Jose C. **STARD1 and NPC1 expression as pathological markers associated with astrogliosis in post-mortem brains from patients with Alzheimer's disease and Down syndrome.** *Aging-Us.* 12(1):571-592. I.F.: 4.831

16. Gimenez N, Tripathi R, Giró A, Rosich L, López-Guerra M, López-Oreja I, Playa-Albin-

yana H, Arenas F, Mas JM, Pérez-Galán P, Delgado J, Campo E, Farrés J, Colomer D . **Systems biology drug screening identifies statins as enhancers of current therapies in chronic lymphocytic leukemia.** *Scientific Reports (Nature Publisher Group).* 10(1):22153. I.F.: 3.998

17. Bosch X; Jáuregui B; Villamor N; Morales-Ruiz M; Ortiz-Pérez J; Borràs R; Penela D; Soto-Iglesias D; Perea R; Doltra A; Prat-González S; Jiménez W; Mira Á; Lasalvia L; Berruezo A. **Monocyte Subsets Are Differently Associated with Infarct Size, Left Ventricular Function, and the Formation of a Potentially Arrhythmogenic Scar in Patients with Acute Myocardial Infarction.** *Journal of Cardiovascular Translational Research.* 13(5):722-730. I.F.: 3.312

18. Benavente Y, Costas L, Rodríguez-Suarez MM, Alguacil J, Santibáñez M, Vila J, Robles C, Alonso E, de la Banda E, Gonzalez-Barca E, Dierssen-Sotos T, Gimeno Vazquez E, Aymerich M, Campo E, Jiménez-Moleón JJ, Marcos-Gragera R, Castaño-Vinyals G, Aragonés N, Pollan M, de Sanjose S, Kogevinas M, Tardón A, Casabonne D. **Occupational Exposure to Pesticides and Chronic Lymphocytic Leukaemia in the MCC-Spain Study.** *International Journal of Environmental Research and Public Health.* 17(14):5174. I.F.: 2.849

19. Mozas P, Rivas-Delgado A, Rivero A, Dlouhy I, Nadeu F, Balagué O, González-Farré B, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Pérez-Galán P, Filella X, Magnano L, López-Guillermo A. **High serum levels of IL-2R, IL-6, and TNF-α are associated with higher tumor burden and poorer outcome of follicular lymphoma patients in the rituximab era.** *Leukemia Research.* 94(106371):106371. I.F.: 2.214

20. Solans M, Romaguera D, Gracia-Lavedan E, Molinuevo A, Benavente Y, Saez M, Marcos-Gragera R, Costas L, Robles C, Alonso E, de la Banda E, Gonzalez-Barca E, Llorca J, Rodriguez-Suarez MM, Lozano-Lorca M, Aymerich M, Campo E, Gimeno-Vázquez E, Castaño-Vinyals G, Aragonés N, Pollán M, Kogevinas M, de Sanjose S, Amiano P, Casabonne D. **Adherence to the 2018 WCRF/AICR cancer prevention guidelines and chronic lymphocytic leukemia in the MCC-Spain study.** *Cancer Epidemiology.* 64(101629). I.F.: 2.179

21. Ojeda R; Arias-Guillén M; Gómez M; Vera M; Fontseré N; Rodas L; Filella X; Reverter JC; Lozano F; Villamor N; Maduell F. **Study of Biocompatibility of Membranes in Online Hemodiafiltration.** *Blood Purification.* 49(4):400-408. I.F.: 2.116

22. Sorigue M, Magnano L, Miljkovic MD, Nieto-Moragas J, Santos-Gomez M, Villamor N, Junca J, Morales-Indiano C. **Positive predictive value of CD200 positivity in the differential diagnosis of chronic lymphocytic leukemia**. *Cytometry Part B-Clinical Cytometry.* 98(5):441-448. I.F.: 2.070

Review / I.F.: 60.392

1. Bonnal SC; López-Oreja I; Valcárcel J. **Roles and mechanisms of alternative splicing in cancer-implications for care.** *Nature Reviews Clinical Oncology*. 17(8):457-474. I.F.: 53.276

2. Delgado J; Nadeu F; Colomer D; Campo E. **Chronic lymphocytic leukemia: from molecular pathogenesis to novel therapeutic strategies.** *Haematologica.* 105(9):2205-2217. I.F.: 7.116

Letters / I.F.: 21.667

1. Nadeu F; Royo R; Maura F; Dawson K; Dueso-Barroso A; Aymerich M; Pinyol M; Beà S; López-Guillermo A; Delgado J; Puente X; Campo E. **Minimal spatial heterogeneity in chronic lymphocytic leukemia at diagnosis.** *Leukemia.* 34(7):1929-1933. I.F.: 8.665

2. Muniesa C, Domingo-Domenech E, Fornons-Servent R, Peñate Y, Estrach MT, Ramón MD, Medina S, Florez A, Ortiz-Romero PL, Sánchez-Caminero MP, Torres-Navarro I, Acebo E, Yanguas I, Fernández-de-Misa R, Blanes M, Zayas A, Descalzo MA, Garcia-Doval I, Servitje O. **Systemic rituximab for the treatment of the indolent forms of primary cutaneous B-cell lymphomas: data from the Spanish Primary Cutaneous Lymphoma Registry.** *Journal of The American Academy of Dermatology.* 83(5):1535-1538. I.F.: 8.277

3. Rovira M; Villamor N; Cobo F; Fernández-Aviles F; López-Guerra ML; Guijarro F; Baumann T; Montserrat E. **Is chronic lymphocytic leukemia curable? A clinical case relapsing 21 years after allogeneic stem-cell transplantation.** *Bone Marrow Transplantation.* 55(9):1860-1861. I.F.: 4.725

Case Reports / I.F.: 7.116

1. Magnano L; Navarro A; López-Guerra M; Clot G; Beà S; Bastidas G; Costa D; Rivero A; Garrote M; Giné E; Rozman M; Aymerich M; Colomer D; López-Guillermo A; Campo E; Villamor N; Matutes E. **Chronic lymphocytic leukemia and prolymphocytic leukemia. Two coins or two sides of the same coin?** *Haematologica.* 105(9):E484-E487. I.F.: 7.116

Consortium Publications / I.F.: 42.779

1. ICGC/TCGA Pan-Cancer Analysis of Whole Genomes Consortium. **Pan-cancer analysis of whole genomes**. *Nature.* 578(7793):82-93. I.F.: 42.779

GRANTS FOR RESEARCH IN PROGRESS

Colomer D. **Dianes terapèutiques i noves tècniques diagnostiques en neoplàsies limfoides.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_01009
Duration: 01/01/2017-30/09/2021

Colomer D. **Nuevos modelos para el estudio de las alteraciones genéticas recurrentes y resistencia a fármacos en la leucemia crónica.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-094584-B-I00
Duration: 01/01/2019-31/12/2021

Colomer D. **Red transfonteriza de immunoterapias personalizadas para linfomas no Hodgkin.**
Sponsored by: European Commission.
CE_Interreg-16_POCTE
Duration: 01/01/2018-31/12/2021

5.7 Molecular pathology of inflammatory conditions and solid tumours

LOCATION
HCB building

KEYWORDS
1. **Cancer**
2. **Molecular pathology**
3. **Autoinmmunity**
4. **Fibrosis**
5. **Artificial intelligence**
6. **Digital pathology**

RELATED DISEASES
1. **Solid tumours, carcinoma**
2. **Cutaneous inflammatory diseases**
3. **Kidney inflammatory diseases**

GROUP INVOLVED IN
CIBEREHD
AGAUR_SGR17: 00653

Original publications

TOTAL	29
I.F.	195,61
Mean I.F.	6,75
Q1	83%
D1	38%
MA	7%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Miriam Cuatrecasas (HCB)
T. 93 227 54 50
mcuatrec@clinic.cat

RESEARCHERS
Iban Aldecoa (HCB)
Llúcia Alós (HCB-UB)
Paola Cecilia Castillo (HCB)
Adriana García (HCB)
Carme Mallofré (HCB-UB)
Alfons Nadal (HCB-UB)
José Francisco Ramírez (HCB-UB)
Teresa Ribalta (HCB-UB)
María Adela Saco (HCB)

PRE-DOCTORAL RESEARCHERS
Iván Archilla Sanz (HCB)
Sherley Días Mercedes (HCB)
María Teresa Rodrigo (HCB)

PROBLEM

The development and progression of human neoplasms and inflammatory diseases involve genetic and molecular mechanisms which can be learned through digital and molecular techniques applied to tissues.

APPROACH

The technological platforms applied to research in inflammatory diseases and human tumours enable the knowledge generated by basic research to be transferred to clinical practice.

For this reason, applied molecular pathology techniques are used at diagnostic level, including genetics, epigenetics, proteomics, glycomics, and digital pathology with artificial intelligence algorithms, spectral microscopy, and ex vivo confocal microscopy.

IMPACT

Thanks to the identification of therapeutic targets, the group has distinguished parameters that enable improvement of the diagnosis and prognosis of inflammatory and neoplastic diseases.

The group is a leader in the molecular diagnosis of lung and breast cancer and molecular nodal staging in colorectal cancer, as well as in the underlying molecular mechanisms in cutaneous and renal inflammatory processes, molecular characterisation techniques in melanoma and tumours of the central nervous system.

RESEARCH LINES

- Head and neck carcinomas, oncogenesis and prognostic factors.

- Molecular lymph node staging in colorectal carcinoma.

- Molecular techniques applied to melanocytic neoplasia, especially to melanoma diagnosis.

- Neurodegenerative diseases and tumors of the central nervous system.

- Skin and kidney involvement in haematological and systemic diseases.

- Transcriptional expression profiles involved in molecular mechanisms of carcinogenesis.

PUBLICATIONS

Originals / I.F.: 195.61

1. Menendez, C; Quinto, L; Castillo, P; Fernandes, F; Carrilho, C; Ismail, MR; Lorenzoni, C; Hurtado, JC; Rakislova, N; Munguambe, K; Moraleda, C; Maixenchs, M; Macete, E; Mandomando, I; Martinez, MJ; Alonso, PL; Bassat, Q; Ordi, J. **Quality of care and maternal mortality in a tertiary-level hospital in Mozambique: a retrospective study of clinicopathological discrepancies**. *Lancet Global Health*. 8(7):E965-E972. I.F.:21.597

2. Bonjoch L, Franch-Expósito S, Garre P, Belhadj S, Muñoz J, Arnau-Collell C, Díaz-Gay M, Gratacós-Mulleras A, Raimondi G, Esteban-Jurado C, Soares de Lima Y, Herrera-Pariente C, Cuatrecasas M, Ocaña T,

Castells A, Fillat C, Capellá G, Balaguer F, Caldés T, Valle L, Castellví-Bel S. **Germline Mutations in FAF1 Are Associated With Hereditary Colorectal Cancer.** *Gastroenterology.* 159(1):227-240. I.F.: 17.373

3. Duran-Sanchon S, Moreno L, Augé JM, Serra-Burriel M, Cuatrecasas M, Moreira L, Martín A, Serradesanferm A, Pozo À, Costa R, Lacy A, Pellisé M, Lozano JJ, Gironella M, Castells A. **Identification and validation of microRNA profiles in fecal samples for detection of colorectal cancer.** *Gastroenterology.* 158(4):947-957.e4. I.F.: 17.373

4. Santana-Codina N, Muixí L, Foj R, Sanz-Pamplona R, Badia-Villanueva M, Abramowicz A, Marcé-Grau A, Cosialls AM, Gil J, Archilla I, Pedrosa L, Gonzalez J, Aldecoa I, Sierra A. **GRP94 promotes brain metastasis by engaging pro-survival autophagy.** *Neuro-Oncology.* 22(5):652-664. I.F.: 10.247

5. Carrato C, Alameda F, Esteve-Codina A, Pineda E, Arpí O, Martinez-García M, Mallo M, Gut M, Lopez-Martos R, Barco SD, Ribalta T, Capellades J, Puig J, Gallego O, Mesia C, Muñoz-Marmol AM, Archilla I, Arumí M, Blanc JM, Bellosillo B, Menendez S, Esteve A, Bagué S, Hernandez A, Craven-Bartle J, Fuentes R, Vidal N, Aldecoa I, Iglesia N, Balana C. **Glioblastoma TCGA mesenchymal and IGS 23 tumors are identifiable by immunohistochemistry and have an immune-phenotype indicating potential benefit from immunotherapy.** *Clinical Cancer Research.* 26(24):6600-6609. I.F.: 10.107

6. Sargen MR, Calista D, Elder DE, Massi D, Chu EY, Potrony M, Pfeiffer RM, Carrera C, Aguilera P, Alos L, Puig S, Elenitsas R, Yang XR, Tucker MA, Landi MT, Goldstein AM. **Histologic features of melanoma associated with germline mutations of CDKN2A, CDK4, and POT1 in melanoma-prone families from the United States, Italy, and Spain.** *Journal of the American Academy of Dermatology.* 83(3):860-869. I.F.: 8.277

7. Gómez-Martín I, Collgros H, Ferguson PM, Barreiro A, Guitera P, Andrades-López E, Puig S, Pujol RM, Barranco C, Alòs L, Segura S . **Diagnostic accuracy of pigmented labial macules by in vivo reflectance confocal microscopy and correlation among techniques.** *Journal of the American Academy of Dermatology.* S0190-9622(20):30313-3. I.F.: 8.277

8. Pérez-Anker J, Ribero S, Yélamos O, García-Herrera A, Alos L, Alejo B, Combalia M, Moreno-Ramírez D, Malvehy J, Puig S. **Basal Cell Carcinoma Characterisation Using Fusion Ex Vivo Confocal Microscopy: A Promising Change In Conventional Skin Histopathology.** *British Journal of Dermatology.* 182(2):468-476. I.F.: 7.000

9. Golubicki M, Bonjoch L, Acuña-Ochoa JG, Díaz-Gay M, Muñoz J, Cuatrecasas M, Ocaña T, Iseas S, Mendez G, Cisterna D, Schubert SA, Nielsen M, van Wezel T, Goldberg Y, Pikarsky E, Robbio J, Roca E, Castells A, Balaguer F, Antelo M, Castellví-Bel S. **Germline biallelic MCM8 variants are associated with early-onset Lynch-like syndrome.** *Jci Insight.* 5(18):e140698. I.F.: 6.205

10. Cuatrecasas M; Gorostiaga I; Riera C; Saperas E; Llort G; Costa I; Matias-Guiu X; Carrato C; Navarro M; Pineda M; Dueñas N; Brunet J; Marco V; Trias I; Busteros JI; Mateu G; Balaguer F; Fernández-Figueras MT; Esteller M; Musulén E. **Complete loss of epcam immunoexpression identifies epcam deletion carriers in msh2negative colorectal neoplasia.** *Cancers.* 12(10):2803. I.F.: 6.126

11. Griguolo G, Brasó-Maristany F, González-Farré B, Pascual T, Chic N, Saurí T, Kates R, Gluz O, Martínez D, Paré L, Tsvetkova V, Pesantez D, Vidal M, Adamo B, Muñoz M, Galván P, Barberá L, Cuatrecasas M, Christgen M, Kreipe H, Monge-Escartín I, Villagrasa P, Soy D, Giarratano T, Dieci MV, Conte P, Harbeck N, Guarneri V, Prat A . **ERBB2 mRNA Expression and Response to Ado-Trastuzumab Emtansine (T-DM1) in HER2-Positive Breast Cancer**. *Cancers.* 9

12. Llach J, Moreno L, Sánchez A, Herrera-Pariente C, Ocaña T, Cuatrecasas M, Rivero-Sánchez L, Moreira R, Díaz M, Jung G, Pellisé M, Castells A, Balaguer F, Carballal S, Moreira L. **Genetic Counseling for Hereditary Gastric and Pancreatic Cancer in High-Risk Gastrointestinal Cancer Clinics: An Effective Strategy.** *Cancers.* 12(9):2386. I.F.: 6.126

13. Nicolás I; Saco A; Barnadas E; Marimon L; Rakislova N; Fusté P; Rovirosa A; Gaba L; Buñesch L; Gil-Ibañez B; Pahisa J; Díaz-Feijoo B; Torne A; Ordi J; del Pino M. **Prognostic implications of genotyping and p16 immunostaining in HPV-positive tumors of the uterine cervix.** *Modern Pathology.* 33(1):128-137. I.F.: 5.988

14. Raimondi G; Mato-Berciano A; Pascual-Sabater S; Rovira-Rigau M; Cuatrecasas M; Fondevila C; Sánchez-Cabús S; Begthel H; Boj SF; Clevers H; Fillat C. **Patient-derived pancreatic tumour organoids identify therapeutic responses to oncolytic adenoviruses.** *Ebiomedicine.* 56(102786):102786. I.F.: 5.736

15. Toma C, Díaz-Gay M, Franch-Expósito S, Arnau-Collell C, Overs B, Muñoz J, Bonjoch L, Soares de Lima Y, Ocaña T, Cuatrecasas M, Castells A, Bujanda L, Balaguer F, Cubiella J, Caldés T, Fullerton JM, Castellví-Bel S. **Using linkage studies combined with whole-exome sequencing to identify novel candidate genes for familial colorectal cancer.** *International Journal of Cancer.* 146(6):1568-1577. I.F.: 5.145

16. Jimeno M, Domingo A, Salas I, Sánchez MR, González C, Salas C, Paúles MJ, Sanjuán X, Carballal S, Quintanilla I, Molist G, Cuatrecasas M, Pellisé M. **Pathologist Experience and Concordance in the Diagnosis of Dysplasia in Long-standing Inflammatory Bowel Disease.** *American Journal of Surgical Pathology.* 44(7):955-961. I.F.: 4.958

17. Rakislova N, Alemany L, Clavero O, Del Pino M, Saco A, Marimon L, Quirós B, Lloveras B, Ribera-Cortada I, Alejo M, Pawlita M, Quint W, de Sanjose S, Ordi J, VVAP Study Group. **HPV-independent Precursors Mimicking High-grade Squamous Intraepithelial Lesions (HSIL) of the Vulva**. *American Journal of Surgical Pathology.* 44(11):1506-1514. I.F.: 4.958

18. Moisés J, Navarro A, Castellano JJ, Viñolas N, Molins L, Canals J, Han B, Martín J, Ramirez J, Frigola G, Marrades RM, Monzó M. **Long Non-Coding RNA NANCI/NKX2-1 Duplex Impacts Prognosis in Stage I Non-Small-Cell Lung Cancer.** *Archivos de Bronconeumología.* 56(10):630-636. I.F.: 4.957

19. Arnau-Collell C, Soares de Lima Y, Díaz-Gay M, Muñoz J, Carballal S, Bonjoch L, Moreira L, Lozano JJ, Ocaña T, Cuatrecasas M, Díaz de Bustamante A, Castells A, Capellà G, Bujanda L, Cubiella J, Rodríguez-Alcalde D, Balaguer F, Ruiz-Ponte C, Valle L, Moreno V, Castellvi-Bel S. **Colorectal cancer genetic variants are also associated with serrated polyposis syndrome susceptibility**. *Journal of Medical Genetics.* 57(10):677-682. I.F.: 4.943

20. Trilla-Fuertes L; Ghanem I; Gámez-Pozo A; Maurel J; G-Pastrián L; Mendiola M; Peña C; López-Vacas R; Prado-Vázquez G; López-Camacho E; Zapater-Moros A; Heredia V; Cuatrecasas M; García-Alfonso P;

Capdevila J; Conill C; García-Carbonero R; Ramos-Ruiz R; Fortes C; Llorens C; Nanni P; Fresno Vara J; Feliu J. **Genetic profile and functional proteomics of anal squamous cell carcinoma: Proposal for a molecular classification.** *Molecular & Cellular Proteomics.* 19(4):690-700. I.F.: 4.870

21. Rakislova N; Alemany L; Clavero O; Saco A; Torné A; Del Pino M; Munmany M; Rodrigo-calvo MT; Guerrero J; Marimon L; Vega N; Quirós B; Lloveras B; Ribera-cortada I; Alejo M; Pawlita M; Quint W; de Sanjose S; Ordi J. **P53 immunohistochemical patterns in HPV- independent squamous cell carcinomas of the vulva and the associated skin lesions: A study of 779 cases.** *International Journal of Molecular Sciences.* 21(21):8091. I.F.: 4.556

22. Del Pino M, Martí C, Torras I, Henere C, Munmany M, Marimon L, Saco A, Torné A, Ordi J. **HPV Vaccination as Adjuvant to Conization in Women with Cervical Intraepithelial Neoplasia: A Study under Real-Life Conditions.** *Vaccines.* 8(2):245. I.F.: 4.086

23. Brugués A; Ribero S; Martins da Silva V; Aguilera P; Garcia AP; Alós L; Malvehy J; Puig S; Carrera C. **Sutton Naevi as Melanoma Simulators: Can Confocal Microscopy Help in the Diagnosis?** *Acta Dermato-Venereologica.* 100(10):adv00134. I.F.: 4.016

24. Trilla-Fuertes L; Ghanem I; Maurel J; G-Pastrián L; Mendiola M; Peña C; López-Vacas R; Prado-Vázquez G; López-Camacho E; Zapater-Moros A; Heredia V; Cuatrecasas M; García-Alfonso P; Capdevila J; Conill C; García-Carbonero R; Heath KE; Ramos-Ruiz R; Llorens C; Campos-Barros Á; Gámez-Pozo A; Feliu J; Vara JÁF. **Comprehensive Characterization of the Mutational Landscape in Localized Anal Squamous Cell Carcinoma.** *Translational Oncology.* 13(7):100778. I.F.: 3.558

25. Giavedoni P, Podlipnik S, Pericàs JM, Fuertes de Vega I, García-Herrera A, Alós L, Carrera C, Andreu-Febrer C, Sanz-Beltran J, Riquelme-Mc Loughlin C, Riera-Monroig J, Combalia A, Bosch-Amate X, Morgado-Carrasco D, Pigem R, Toll-Abelló A, Martí-Martí I, Rizo-Potau D, Serra-García L, Alamon-Reig F, Iranzo P, Almuedo-Riera A, Muñoz J, Puig S, Mascaró JM. **Skin Manifestations in COVID-19: Prevalence and Relationship with Disease Severity.** *Journal of Clinical Medicine.* 9(10):3261. I.F.: 3.303

26. Alos L, Fuster C, Castillo P, Jares P, Garcia-Herrera A, Marginet M, Agreda F, Arance A, Gonzalvo E, Garcia M, Puig S, Teixido C . **TP53 mutation and tumoral PD-L1 expression are associated with depth of invasion in desmoplastic melanomas.** *Annals of Translational Medicine.* 8(19):1218. I.F.: 3.297

27. Ferreri J; Fàbregues F; Calafell JM; Solernou R; Borrás A; Saco A; Manau D; Carmona F. **Drug-free in-vitro activation of follicles and fresh tissue autotransplantation as a therapeutic option in patients with primary ovarian insufficiency.** *Reproductive Biomedicine Online.* 40(2):254-260. I.F.: 3.218

28. Nicolás I, Gilabert-Estellés J, Gilabert-Aguilar J, Fusté P, Aghababyan K, Pahisa J, Gil-Ibañez B, Díaz-Feijoo B, Carmona F, Calpe FJ, Saco A, Ordi J, Torne A . **Number of paraaortic lymph node dissections as a prognostic factor in locally advanced cervical cancer.** *Medicina Clinica.* 155(5):197-201. I.F.: 1.635

29. Hernandez-Gonzalez F; Prieto-González S; Brito-Zeron P; Cuerpo S; Sanchez M; Ramirez J; Agustí C; Lucena CM; Paradela M; Grafia I; Espinosa G; Sellares J. **Impact of a systematic evaluation of connective tissue disease on diagnosis approach in patients with interstitial lung diseases.** *Medicine.* 99(4):e18589. I.F.: 1.552

Review / I.F.: 14.694

1. Malvehy J, Pérez-Anker J, Toll A, Pigem R, Garcia A, Alos LL, Puig S. **Ex vivo Confocal Microscopy: revolution in fast pathology in dermatology.** *British Journal of Dermatology.* 183(6):1011-1025. I.F.: 7.000

2. Castillo D, Sánchez-Font A, Pajares V, Franquet T, Llatjós R, Sansano I, Sellarés J, Centeno C, Fibla JJ, Sánchez M, Ramírez J, Moreno A, Trujillo-Reyes JC, Barbeta E, Molina-Molina M, Torrego A, por el grupo de trabajo CRIOMPID. **A Multidisciplinary Proposal for a Diagnostic Algorithm in Idiopathic Pulmonary Fibrosis: The Role of Transbronchial Cryobiopsy.** *Archivos de Bronconeumología.* 56(2):99-105. I.F.: 4.957

3. García-Alfonso P, García-Carbonero R, García-Foncillas J, Pérez-Segura P, Salazar R, Vera R, Ramón y Cajal S, Hernández-Losa J, Landolfi S, Musulén E, Cuatrecasas M, Navarro S. **Update of the recommendations for the determination of biomarkers in colorectal carcinoma: National Consensus of the Spanish Society of Medical Oncology and the Spanish Society of Pathology.** *Clinical & Translational Oncology.* 22(11):1976-1991. I.F.: 2.737

Letters / I.F.: 10.139

1. Riera-Monroig J; Combalia A; Rodríguez A; Alós L; Mangas C; Ferrando J; Carrera C. **Hedgehog-like moustache trichomegaly during treatment with vismodegib.** *Journal of The European Academy of Dermatology and Venereology.* 34(1):e11-e13. I.F.: 5.248

2. Del Busto-Wilhelm I, Giavedoni P, Vicente A, Gonzalez-Enseñat MA, Albert A, Alos L, Malvehy J, Puig S. **Ultrasound findings of proliferative nodule arising in a congenital melanocytic nevus.** *Melanoma Research.* 30(5):528-529. I.F.: 2.750

3. Rakislova N, Cuatrecasas M, Molina A, Rodrigo M, Moreira L, Laguna J, Rodríguez M, Pérez FM, Carlos Laguna J, Merino A. **Signet ring cell carcinocythaemia in an advanced gastric carcinoma.** *International Journal of Laboratory Hematology.* 42(5):e231-e233. I.F.: 2.141

Case Reports / I.F.: 15.487

1. Anker JP, Córdova H, Guerrero JA, Fernández-Esparrach G, Cuatrecasas M . **Colonic perforation after piecemeal mucosectomy diagnosed by confocal microscopy.** *Gastrointestinal Endoscopy.* 92(4):971-973. I.F.: 6.890

2. Quintas L; Vidal-Sicart S; Salvador R; Castelo-Branco C; Saco A; Carmona F. **Use of Radioactive Seed Localization to Guide Removal of a Nonpalpable Endometriotic Lesion: A Case Report.** *Journal of Minimally Invasive Gynecology.* 27(2):551-554. I.F.: 3.107

3. Alos L, Rodriguez-Carunchio L, Brugués A, Fuster C, Pinyol M, Puig S. **The Usefulness of Molecular Tools for the Diagnosis of a Challenging Nevoid Melanoma.** *Applied Immunohistochemistry & Molecular Morphology.* 28(4):E36-E37. I.F.: 1.773

4. Riera-Monroig J; Martínez-Romero MdC; Alós L; Guillén-Navarro E; Mascaró JM. **Eccrine syringofibroadenoma as a clue for the diagnosis of Schöpf-Schulz-Passarge syndrome in acquired palmoplantar keratoderma.**

Journal of Cutaneous Pathology. 47(10):987-989. I.F.: 1.373

5. Rojas-Lechuga MJ, Remacha J, González-Sánchez N, Grau JJ, Castillo P, Haag O, Vilaseca I. **Juvenile recurrent respiratory papillomatosis treated with combined erlotinib and celecoxib: Initial report.** *International Journal of Pediatric Otorhinolaryngology*. 137(110194):110194. I.F.: 1.241

6. Aldecoa, Iban; Archilla, Ivan; Herrero, Laura; Garcia, Felipe; Torres, Berta; Gaig, Carles; Fernandez, Sara; Angeles Marcos, Maria; Gelpi, Ellen. **Image of the month: Measles inclusion body encephalitis.** *Clinical Neuropathology*. 39(4):148-151. I.F.: 1.103

Consortium Publications / I.F.: 46.628

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal*. 41(22):2092-2112. I.F.: 22.673

2. Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, Miró JM, GAMES Investigators. **A Contemporary Picture of Enterococcal Endocarditis.** *Journal of The American College of Cardiology*. 75(5):482-494. I.F.: 20.589

3. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology*. 27(1):294-302. I.F.: 3.366

GRANTS FOR RESEARCH IN PROGRESS

Cuatrecasas M. **Nuevas estrategias para la estratificación del riesgo de recidiva en pacientes con cáncer de colon en estadio II: Integración de perfiles genómicos y carga tumoral ganglionar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01304
Duration: 01/01/2018-31/12/2021

5.8 Endocytosis and intracellular trafficking of proteins and cholesterol

LOCATION
CELLEX building, floor 1B
UB School of Medicine

KEYWORDS
1. **Cell biology**
2. **Endocytosis and exocytosis**
3. **Lipids and cholesterol transport and storage**
4. **Signal transduction**
5. **Liver regeneration**

RELATED DISEASES
1. **NPC1**

GROUP INVOLVED IN
AGAUR_SGR17: 01225

Original publications

TOTAL	5
I.F.	71,78
Mean I.F.	14,36
Q1	60%
D1	40%
MA	80%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Carles Enrich (UB)
T. 93 402 19 08
enrich@ub.edu

ASSISTANT RESEARCHERS
Albert Lu López (IDIBAPS)
Carles Rentero (UB)
Teresa Royo (UB)

PROBLEM

Lysosomal storage disorders such as Niemann-Pick type C (NP-C) lead to the lysosomal accumulation of cholesterol and other lipids, resulting in malfunctions. This accumulation of cholesterol causes alterations in cell physiology, and these are responsible for the liver and neurodegenerative problems that affect patients with NP-C.

Only by performing a detailed analysis of the molecular components and their interactions with lysosomes can the group stimulate alternative pathways to reduce surplus lipids and reactivate the lysosomal function.

APPROACH

Our knowledge of the proteomic repertoire of lysosomes has opened the door to the study of the interactions between the proteins involved in cholesterol transport and removal. The group is now studying the way in which the regulation, overexpression and silencing of determined proteins in this lysosomal environment affect the accumulated lipid levels and how to restore the cell function.

The most innovative strategy makes it possible to induce the formation of junctions between the lysosome membranes and other membranes of neighbouring compartments in order to promote molecular transfer.

IMPACT

The main objective is to restore the lysosomal and cellular function in vital organs such as the liver and brain in cell-based lysosomal storage disorder models.

So far, the group has discovered a new pathway that enables the removal of cholesterol from the lysosomes that is independent of the most common transporter, the NPC1 protein (which is the cause of Niemann Pick type C disease).

RESEARCH LINES

- Annexin A6 and signalling.

- Annexin A6 in membrane trafficking and organization.

- Role of annexin A6 during liver regeneration.

- Biology of exosomes: biogenesis and uptake.

- Regulation of intracellular cholesterol transport: role of membrane contact sites (MCS).

PUBLICATIONS

Originals / I.F.: 71.779

1. Bosch M, Sánchez-Álvarez M, Fajardo A, Kapetanovic R, Steiner B, Dutra F, Moreira L, López JA, Campo R, Marí M, Morales-Paytuví F, Tort O, Gubern A, Templin RM, Curson JEB, Martel N, Català C, Lozano F, Tebar F, Enrich C, Vázquez J, Del Pozo MA, Sweet MJ, Bozza PT, Gross SP, Parton RG, Pol A . **Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense.** Science. 370(6514):eaay8085. I.F.: 41.846

2. Alvarez-Guaita A, Blanco-Muñoz P, Meneses-Salas E, Wahba M, Pollock AH, Jose J, Casado M, Bosch M, Artuch R, Gaus K, Lu A, Pol A, Tebar F, Moss SE, Grewal T, Enrich C, Rentero C. **Annexin A6 is critical to maintain glucose homeostasis and survival during liver regeneration.** *Hepatology*. 72(6):2149-2164. I.F.: 14.679

3. Meneses-Salas E; García-Melero A; Kanerva K; Blanco-Muñoz P; Morales-Paytuvi F; Bonjoch J; Casas J; Egert A; Beevi S; Jose J; Llorente-Cortés V; Rye K; Heeren J; Lu A; Pol

A; Tebar F; Ikonen E; Grewal T; Enrich C; Rentero C. **Annexin A6 modulates TBC1D15/Rab7/StARD3 axis to control endosomal cholesterol export in NPC1 cells.** *Cellular and Molecular Life Sciences.* 77(14):2839-2857. I.F.: 6.496

4. Hoque, Monira; Elmaghrabi, Yasmin A; Kose, Meryem; Beevi, Syed S; Jose, Jaimy; Meneses-Salas, Elsa; Blanco-Munoz, Patricia; Conway, James R W; Swarbrick, Alexander; Timpson, Paul; Tebar, Francesc; Enrich, Carlos; Rentero, Carles; Grewal, Thomas. **Annexin A6 improves anti-migratory and anti-invasive properties of tyrosine kinase inhibitors in EGFR overexpressing human squamous epithelial cells.** *Febs Journal.* 287(14):2961-2978. I.F.: 4.392

5. Meneses-Salas E; García-Melero A; Blanco-Muñoz P; Jose J; Brenner MS; Lu A; Tebar F; Grewal T; Rentero C; Enrich C. **Selective Degradation Permits a Feedback Loop Controlling Annexin A6 and Cholesterol Levels in Endolysosomes of NPC1 Mutant Cells**. *Cells*. 9(5):1152. I.F.: 4.392

Review / I.F.: 4.556

1. Tebar F; Chavero A; Agell N; Lu A; Rentero C; Enrich C; Grewal T. **Pleiotropic roles of calmodulin in the regulation of KRas and rac1 GTPases: Functional diversity in health and disease.** *International Journal of Molecular Sciences.* 21(10):3680. I.F.: 4.556

GRANTS FOR RESEARCH IN PROGRESS

Enrich C, Tebar F. **Contribución del compartimiento endocítico a la migración celular: regulación por colesterol, annexin A6 y Rac1.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
BFU2015-66785-P
Duration: 01/01/2016-31/12/2020

DOCTORAL THESES

Enrich C, Rentero C. **Papel de AnxA6 en la regulación del transportador de L-alanina, SNAT4, en hígado de ratón.**
PhD student: Patricia Blanco Muñoz

Tebar F, Enrich C. **Rac1 regula la endocitosis y la tensión de membrana plasmática mediante el control de los niveles de pi(4,5)p2 y la dinámica de actina.**
PhD student: Albert Chavero Pieres

5.9 Hemotherapy - hemostasis

LOCATION
HCB building

KEYWORDS
1. **Platelets**
2. **Coagulation**
3. **Thrombosis**
4. **Transfusion**
5. **Aphaeresis**

RELATED KEYWORDS
1. **Thrombosis**
2. **Hemorrhagic diathesis**
3. **Thrombotic microangiopathies**
4. **Chronic kidney disease**
5. **Obesity**
6. **Major depression**
7. **Hematopoietic stem cell transplantation complications**

GROUP INVOLVED IN
AGAUR_SGR17: 0675

Original publications

TOTAL	22
I.F.	106,62
Mean I.F.	4,85
Q1	55%
D1	9%
MA	27%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Ginés Escolar (HCB)
T. 93 227 54 00 (Ext.: 2034)
gescolar@clinic.cat

RESEARCHERS
Joan Cid (HCB)
Maribel Díaz Ricart (HCB)
Pablo García de Frutos (IIBB-CSIC)
Miguel Lozano (HCB)
Juan Monteagudo (HCB)
Arturo Pereira (HCB)
Juan Carlos Reverter (HCB)
Cristina Chantal Sanz (HCB)
Mª Dolors Tassies (HCB)

PRE-DOCTORAL RESEARCHERS
Didac Jerez (FCRB)
Ana Belén Moreno (HCB)
Sergi Torramade (IDIBAPS)

TECHNICIANS
Patricia Molina (HCB)
Alex Ramos (HCB)

PROBLEM

Venous and arterial thrombosis, and associated vascular disease, are the leading cause of death and disability worldwide. Direct and indirect annual costs and some of its treatments exceed 49 billion euros in the European union, including direct health costs (24 billion euros), loss of productivity (17 billion euros) and patient care (9 billion euros).

It is expected that the medical costs associated with the treatment of these conditions, some of them preventable, will increase exponentially over the next two decades. Macroangiopathic and microbial dysfunctions are likely to be strongly implicated in the origin of these diseases, which present high morbidity/mortality rates.

APPROACH

Haemorrhage and thrombosis represent the two sides of vascular and haemostatic alterations. The group explores the clinical, genetic, and molecular characteristics of both congenital and acquired haemostasis in order to obtain solid foundations for a better understanding of these disorders.

Endothelial dysfunction (ED, loss of endothelial function) is a common condition in many health disorders and leads to the most serious complications.

Investigating the mechanisms of ED at the macro and microvascular level is of great importance in defining the objectives for preventing and/or correcting its harmful impact on the disorders in which it is involved.

IMPACT

The group has improved the characterisation of haemorrhagic and thrombotic phenotypes and it has identified common and specific biomarkers of ED; it has investigated and defined biomarkers of ED that predict graft versus host disease (GVHD) within the context of the transplantation of hematopoietic cell progenitors; it has explored therapeutic interventions in ED and microvascular complications; it has evaluated pharmacological/transfusion therapies; and it has developed algorithms for the diagnosis and treatment of thrombotic microangiopathies.

RESEARCH LINES

- Characterization of endothelial dysfunction in association with different pathological situations.

- Diagnosis and treatment of thrombotic microangiopathies.

- Evaluation of the physiological and pathological implications of circulating and/or platelet associated procoagulant microparticles in atherothrombosis.

- Search for biomarkers of graft-versus-host disease (GVHD).

- Study of the molecular mechanisms involved in the development of bleeding and thrombotic disorders.

PUBLICATIONS

Originals / I.F.: 106.624

1. Baber U; Zafar MU; Dangas G; Escolar G; Angiolillo DJ; Sharma SK; Kini AS; Sartori S; Joyce L; Vogel B; Farhan S; Gurbel P; Gibson CM; Fuster V; Mehran R; Badimon JJ. **Ticagrelor With or Without Aspirin in High-Risk Patients After PCI in the TWILIGHT Trial.** *Journal of the American College of Cardiology.* 75(6):578-586. I.F.: 20.589

2. Cordes S; Mokhtari Z; Bartosova M; Mertlitz S; Riesner K; Shi Y; Mengwasser J; Kalupa M; McGeary A; Schleifenbaum J; Schrezenmeier J; Bullinger L; Diaz-Ricart M; Palomo M; Carrreras E; Beutel G; Schmitt CP; Beilhack A; Penack O. **Endothelial damage and dysfunction in acute graft-versus-host disease.** *Haematologica.* I.F.: 7.116

3. Tutusaus A; de Gregorio E; Cucarull B; Cristóbal H; Aresté C; Graupera I; Coll M; Colell A; Gausdal G; Lorens JB; García de Frutos P; Morales A; Marí M. **A Functional Role of GAS6/TAM in Nonalcoholic Steatohepatitis Progression Implicates AXL as Therapeutic Target.** *Cmgh Cellular and Molecular Gastroenterology and Hepatology.* 9(3):349-368. I.F.: 7.076

4. Cucarull B, Tutusaus A, Subías M, Stefanovic M, Hernáez-Alsina T, Boix L, Reig M, García de Frutos P, Marí M, Colell A, Bruix J, Morales A. **Regorafenib Alteration of the BCL-xL/MCL-1 Ratio Provides a Therapeutic Opportunity for BH3-Mimetics in Hepatocellular Carcinoma Models.** *Cancers.* 12(2):332. I.F.: 6.126

5. Baiges A, de la Morena-Barrio ME, Turon F, Miñano A, Alberto Ferrusquía J, Magaz M, Reverter JC, Vicente V, Hernández-Gea V, Corral J, García-Pagán JC. **Congenital antithrombin deficiency in patients with splanchnic vein thrombosis.** *Liver International.* 40(5):1168-1177. I.F.: 5.175

6. Castella M; Caballero-Baños M; Ortiz-Maldonado V; González-Navarro EA; Suñé G; Antoñana-Vidósola A; Boronat A; Marzal B; Millán L; Martín-Antonio B; Cid J; Lozano M; García E; Tabera J; Trias E; Perpiña U; Canals JM; Baumann T; Benítez-Ribas D; Campo E; Yagüe J; Urbano-Ispizua Á; Rives S; Delgado J; Juan M. **Point-of-care CAR T-cell production (ARI-0001) using a closed semi-automatic bioreactor: Experience from an academic phase i clinical trial.** *Frontiers in Immunology.* 11(482):482. I.F.: 5.085

7. Gutiérrez-García G; Villarreal J; Garrote M; Rovira M; Blasco M; Suárez-Lledó M; Rodríguez-Lobato LG; Charry P; Rosiñol L; Marín P; Pedraza A; Solano MT; Ramos C; de Llobet N; Lozano M; Cid J; Martínez C; Poch E; Carreras E; Urbano-Ispizua Á; Fernández-Avilés F; Pereira A; Quintana LF. **Impact of severe acute kidney injury and chronic kidney disease on allogeneic hematopoietic cell transplant recipients: a retrospective single center analysis.** *Bone Marrow Transplantation.* 55(7):1264-1271. I.F.: 4.725

8. Martinez-Sanchez J; Palomo M; Torrama-de-Moix S; Moreno-Castaño AB; Rovira M; Gutiérrez-García G; Fernández-Avilés F; Escolar G; Penack O; Rosiñol L; Carreras E; Diaz-Ricart M. **The induction strategies administered in the treatment of multiple myeloma exhibit a deleterious effect on the endothelium.** *Bone Marrow Transplantation.* 55(12):2270-2278. I.F.: 4.725

9. Gutierrez-Garcia G, Rovira M, Arab N, Gallego C, Sanchez J, Alvarez MA, Ayora P, Domenech A, Borras N, Rodriguez-Lobato LG, Rosiñol L, Marin P, Pedraza A, Martinez-Roca A, Carcelero E, Herrera MD, Solano MT, Ramos C, de Llobet N, Serrahima A, Lozano M, Cid J, Martinez C, Suarez-Lledo M, Urbano-Ispizua A, Fernandez-Aviles F. **A reproducible and safe at-home allogeneic haematopoietic cell transplant program: first experience in Central and Southern Europe.** *Bone Marrow Transplantation.* 55(5):965-973. I.F.: 4.725

10. Palomo M, Vera M, Martin S, Torrama-de-Moix S, Martinez-Sanchez J, Moreno AB, Carreras E, Escolar G, Cases A, Diaz-Ricart M. **Up-regulation of HDACs, a harbinger of uraemic endothelial dysfunction, is prevented by defibrotide.** *Journal of Cellular and Molecular Medicine.* 24(2):1713-1723. I.F.: 4.486

11. García-Bernal D, Palomo M, Martínez CM, Millán-Rivero JE, García-Guillén AI, Blanquer M, Díaz-Ricart M, Sackstein R, Carreras E, Moraleda JM. **Defibrotide inhibits donor leucocyte-endothelial interactions and protects against acute graft-versus-host disease.** *Journal of Cellular and Molecular Medicine.* 24(14):8031-8044. I.F.: 4.486

12. Ruiz-Llobet A, Isola I, Gassiot S, Catala A, Diaz-Ricart M, Martinez-Monseny AF, Serrano M, Berrueco R. **Platelet Dysfunction in Noonan and 22q11.2** *Deletion Syndromes in Childhood. Thrombosis and Haemostasis.* 120(3):457-465. I.F.: 4.385

13. Blasi A, von Meijenfeldt FA, Adelmeijer J, Calvo A, Ibañez C, Perdomo J, Reverter JC, Lisman T. **In vitro hypercoagulability and ongoing in vivo activation of coagulation and fibrinolysis in COVID-19 patients on anticoagulation.** *Journal of Thrombosis and Haemostasis.* 18(10):2646-2653. I.F.: 4.157

14. Jerez-Dolz D; Torramade-Moix S; Palomo M; Moreno-Castaño A; Lopez-Vilchez I; Hernandez R; Badimon JJ; Zafar MU; Diaz-Ricart M; Escolar G. **Internalization of microparticles by platelets is partially mediated by toll-like receptor 4 and enhances platelet thrombogenicity.** *Atherosclerosis.* 294:17-24. I.F.: 3.919

15. Rodríguez-Lobato LG, Martínez-Roca A, Moreno DF, Gutiérrez-García G, Suárez-Lledó M, Rovira M, Martínez C, Rosiñol L, Almeida Jorge AS, Pedraza A, Cardozo C, Puerta-Alcalde P, Garcia-Vidal C, Marín P, Cid J, Lozano M, Gallego C, Hernando A, Segura S, Urbano-Ispizua Á, Fernández-Avilés F. **Impact of intensifying primary antibiotic prophylaxis in at-home autologous stem cell transplantation program for lymphoma patients.** *Leukemia & Lymphoma.* 61(7):1565-1574. I.F.: 2.969

16. Cid J, Castillo C, Marin P, Carbasse G, Herrera D, Monfort N, Fernandez-Aviles F, Gutierrez-Garcia G, Martinez C, Rosiñol L, Suarez-Lledo M, Rovira M, Urbano-Ispizua A, Lozano M. **Increased collection efficiency of CD34+cells after mobilization with preemptive use of plerixafor followed by leukocytapheresis on the same day.** *Transfusion.* 60(4):779-785. I.F.: 2.800

17. Mustieles M; Acosta M; Cid J; Jiménez M; Mateo D; Andreu B; Alba C; Perea D; Lozano M. **Peripheral venous access devices for apheresis: 16-gauge is not always needed.** *Transfusion.* 60(3):607-612. I.F.: 2.800

18. Rodríguez-Lobato LG, Martínez-Roca A, Castaño-Díez S, Palomino-Mosquera A, Gutiérrez-García G, Pedraza A, Suárez-Lledó M, Rovira M, Martínez C, Fernández de Larrea C, Cibeira MT, Rosiñol L, Lozano E, Marín P, Cid J, Lozano M, Moreno-Castaño AB, Palomo M, Díaz-Ricart M, Gallego C, Hernando A, Segura S, Carreras E, Urbano-Ispizua Á, Bladé J, Fernández-Avilés F . **The avoidance of G-CSF and the addition of prophylactic corticosteroids after autologous stem cell transplantation for multiple myeloma patients appeal for the at-home setting to reduce readmission for neutropenic fever.** *Plos One.* 15(11):e0241778. I.F.: 2.740

19. Piguillem SV, Gamella M, Garcia de Frutos P, Batlle M, Yanez-Sedeno P, Messina GA, Fernandez-Baldo MA, Campuzano S, Pedrero M, Pingarron JM. **Easily Multiplexable Immunoplatform to Assist Heart Failure Diagnosis through Amperometric Determination of Galectin-3.** *Electroanalysis.* 32(32):2775-2785. I.F.: 2.544

20. Serrano R; Pons-Estel GJ; Espinosa G; Quintana RM; Reverter JC; Tassies D; Monteagudo J; Cervera R. **Long-term follow-up of antiphospholipid syndrome: real-life experience from a single center.** *Lupus.* 29(9):1050-1059. I.F.: 2.251

21. Ojeda R; Arias-Guillén M; Gómez M; Vera M; Fontseré N; Rodas L; Filella X; Reverter JC; Lozano F; Villamor N; Maduell F. **Study of Biocompatibility of Membranes in Online Hemodiafiltration.** *Blood Purification.* 49(4):400-408. I.F.: 2.116

22. Montagud-Marrahi E; Revuelta I; Cucchiari D; Piñeiro GJ; Ventura-Aguiar P; Lozano M; Cid J; Martorell J; Solé M; Quintana LF; Oppenheimer F; Diekmann F; Poch E; Campistol JM; Blasco M. **Successful use of nonantigen-specific immunoadsorption with antihuman Ig-columns in kidney graft antibody-mediated rejection.** *Journal of Clinical Apheresis.* 35(3):188-199. I.F.: 1.629

Review / I.F.: 11.225

1. Tutusaus A, Marí M, Ortiz-Pérez JT, Nicolaes GAF, Morales A, García de Frutos P. **Role of Vitamin K-Dependent Factors Protein S and GAS6 and TAM Receptors in SARS-CoV-2 Infection and COVID-19-Associated Immunothrombosis.** *Cells.* 9(10):2186. I.F.: 4.366

2. Diaz-Ricart M; Torramade-Moix S; Pascual G; Palomo M; Moreno-Castaño AB; Martinez-Sanchez J; Vera M; Cases A; Escolar G. **Endothelial damage, inflammation and immunity in chronic kidney disease.** *Toxins.* 12(6):361. I.F.: 3.531

3. Cid J; Fernández J; Palomo M; Blasco M; Bailó N; Diaz-Ricart M; Lozano M. **Hyperhemolytic Transfusion Reaction in Non-Hemoglobinopathy Patients and Terminal Complement Pathway Activation: Case Series and Review of the Literature.** *Transfusion Medicine Reviews.* 34(3):172-177. I.F.: 3.328

Letters / I.F.: 9.098

1. Richardson E, Carlo-Stella C, Jara R, Vlodavsky I, Iacobelli M, Fareed J, Mo C, O'Gorman P, Yanik G, Palomo M, Diaz-Ricart M, Moraleda JM; DEFACOVID Study Grp. **Response to Maccio et al, "Multifactorial pathogenesis of COVID-19-related coagulopathy: Can defibrotide have a role in the early phases of coagulation disorders?".** *Journal of Thrombosis and Haemostasis.* 18(11):3111-3113. I.F.: 4.157

2. Pineyroa J, Gomez-Hernando M, Rodriguez-Aliberas M, Cid J, Molina A, Lozano M. **Hemolysis in the plasma of a specimen? Add a drop to clarify it**. *Transfusion.* 60(12):2783-2784. I.F.: 2.800

3. Rakislova N, Cuatrecasas M, Molina A, Rodrigo M, Moreira L, Laguna J, Rodríguez M, Pérez FM, Carlos Laguna J, Merino A. **Signet ring cell carcinocythaemia in an advanced gastric carcinoma**. *International Journal of Laboratory Hematology.* 42(5):e231-e233. I.F.: 2.141

Editorial / I.F.: 4.366

1. Martínez-González J; García de Frutos P. **Cells in Cardiovascular Disease: Using Diversity to Confront Adversity.** *Cells.* 9(10):2192. I.F.: 4.366

Case Reports / I.F.: 11.889

1. Fernandez J, Gratacos-Ginès J, Olivas P, Costa M, Nieto S, Mateo D, Sánchez MB, Aguilar F, Bassegoda O, Ruiz P, Caballol B, Pocurull A, Llach J, Mustieles MJ, Cid J, Reverter E, Toapanta ND, Hernández-Tejero M, Martínez JA, Claria J, Fernández C, Mensa J, Arroyo V, Castro P, Lozano M, Covid Clinic Critical Care (CCCC) Group. **Plasma Exchange: An Effective Rescue Therapy in Critically Ill Patients With Coronavirus Disease 2019 Infection.** *Critical Care Medicine.* 48(12):e1350-e1355. I.F.: 7.414

2. García-García I; Cid J; Palomino A; Giné E; Alvarez-Larrán A; Cibeira MT; Lozano M. **Role of therapeutic plasma exchanges in refractory severe warm autoimmune hemolytic anemia: Presentation of two case reports.** *Transfusion.* 60(11):2753-2757. I.F.: 2.800

3. Sandoval E, Lozano M, Pereda D, Quintana E, Cid J, Garcia-Alvarez A, Fernandez-Cisneros A, Castella M. **A combined approach to treat heparin-induced thrombocytopaenia before heart transplant.** *Interactive Cardiovascular and Thoracic Surgery.* 31(6):881-883. I.F.: 1.675

Consortium Publications / I.F.: 4.725

1. Carreras E, Barcelona Endothelium Team (BET). **Vascular endothelial syndromes after HCT: 2020 update.** *Bone Marrow Transplantation.* 55(10):1885-1887. I.F.: 4.725

GRANTS FOR RESEARCH IN PROGRESS

Díaz-Ricart I, Escolar G. **Serin-Proteasas, disfunción endotelial y riesgo cardiovascular: terapia Anti-XA.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00888
Duration: 01/01/2020-31/12/2022

Escolar G. **Hemotrom**.
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00675
Duration: 01/01/2017-30/09/2021

Escolar G. **Targeting endothelial dysfunction in highly prevalent diseases: characterization and validatin of prognostic biomarkers and identification of potential therapeutic strategies.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PIE15/00027
Duration: 01/01/2016-30/11/2020

DOCTORAL THESES

Diaz-Ricart M, Cases A. **Modulación farmacológica de la disfunción endotelial en la uremia.**
PhD student: Manel Vera Rivera

5.10 Mechanisms of progression in monoclonal gammopathies

LOCATION
CEK building, floor 2

KEYWORDS
1. **Multiple myeloma**
2. **Immune checkpoints**
3. **CAR T cells**
4. **Immunotherapy**
5. **Monoclonal gammopathies**

RELATED DISEASES
1. **Myeloma multiple**
2. **Macroglobulinemia**
3. **Amyloidosis**
4. **Monoclonal gammopathy of undetermined significance**

GROUP INVOLVED IN
AGAUR_SGR17: 00792

Original publications

TOTAL	5
I.F.	**46,69**
Mean I.F.	**9,34**
Q1	**80%**
D1	**80%**
MA	**40%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Carlos Fernández de Larrea
(IDIBAPS-HCB)
T.93 227 54 00 (Ext.: 2946)
cfernan1@clinic.cat

ASSISTANT RESEARCHERS
Ester Lozano (UB)
Mª Pau Mena (FCRB)

POST-DOCTORAL RESEARCHERS
Tania Díaz Sánchez (UB)
Luis Gerardo Rodriguez Lobato (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
David Moreno (HCB)
Aina Oliver Caldes (HCB)

PROBLEM

Multiple myeloma is a disease of the plasma cells, responsible for generating antibodies. The malignant proliferation of these cells, especially in the bone marrow, causes fractures, anaemia, renal insufficiency and elevation of calcium.

Therapies for treating multiple myeloma include chemotherapy, bone marrow autologous transplant, proteasome inhibitors, immunomodulatory agents, and monoclonal antibodies.

Despite the wide range of therapies that exist to treat it, multiple myeloma is still an incurable pathology.

APPROACH

The group's line of work consists of identifying innovative treatment options related to the patient's immune system and the tumour's micro-environment.

It studies, for example, molecules related to the control and evasion of myeloma after treatment in order to develop new therapeutic strategies.

In this direction, generating modified cells in the laboratory, called CAR T cells, enables a patient's lymphocytes (a type of white blood cell) to be targeted in a specific way so that they only attack malignant plasma cells.

IMPACT

The goal is the long-term remission of multiple myeloma; even the possibility that some patients may be cured thanks to the increased effect of the immune cells on the malignant cells.

An alternative is to return to the initial state of multiple myeloma, in which the balance between malignant plasma cells and other cells in the bone marrow allow the patient to live symptom-free and without suffering the consequences of the disease for many years.

RESEARCH LINES

- CAR-T cells against BCMA in multiple myeloma: prognostic factors related to their activity and development of a new generation of chimeric receptors.

- Mechanisms of immune control involved in the progression after treatment in the multiple myeloma.

- MicroRNA profile in bone marrow mesenchymal stromal cells from patients with multiple myeloma in different status disease.

- Mechanism of progression in macroglobulinemia and IgM MGUS.

PUBLICATIONS

Originals / I.F.: 46.687

1. Tam CS, Opat S, D'Sa S, Jurczak W, Lee HP, Cull G, Owen RG, Marlton P, Wahlin BE, Sanz RG, McCarthy H, Mulligan S, Tedeschi A, Castillo JJ, Czyz J, Fernández de Larrea C, Belada D, Libby E, Matous JV, Motta M, Siddiqi T, Tani M, Trneny M, Minnema MC, Buske C, Leblond V, Trotman J, Chan WY, Schneider J,

Ro S, Cohen A, Huang J, Dimopoulos M. **A randomized phase 3 trial of zanubrutinib vs ibrutinib in symptomatic Waldenström macroglobulinemia: the ASPEN study.** *Blood.* 136(18):2038-2050. I.F.: 17.794

2. Lozano E, Mena MP, Díaz T, Martin-Antonio B, León S, Rodríguez-Lobato LG, Oliver-Caldés A, Cibeira MT, Bladé J, Prat A, Rosiñol L, Fernández de Larrea C. **Nectin-2 expression on malignant plasma cells is associated with better response to TIGIT blockade in multiple myeloma.** *Clinical Cancer Research.* 26(17):4688-4698. I.F.: 10.107

3. Martínez-López J; Mateos MV; Encinas C; Sureda A; Hernández-Rivas JÁ; Lopez de la Guía A; Conde D; Krsnik I; Prieto E; Riaza Grau R; Gironella M; Blanchard MJ; Caminos N; Fernández de Larrea C; Senin MA; Escalante F; de la Puerta JE; Giménez E; Martínez-Barranco P; Mateos JJ; Casado LF; Bladé J; Lahuerta JJ; de la Cruz J; San-Miguel J. **Multiple myeloma and SARS-CoV-2 infection: clinical characteristics and prognostic factors of inpatient mortality.** *Blood Cancer Journal.* 10(10):103. I.F.: 8.023

4. Mateos, Maria-Victoria; Kumar, Shaji; Dimopoulos, Meletios A.; Gonzalez-Calle, Veronica; Kastritis, Efstathios; Hajek, Roman; Fernandez De Larrea, Carlos; Morgan, Gareth J.; Merlini, Giampaolo; Goldschmidt, Hartmut; Geraldes, Catarina; Gozzetti, Alessandro; Kyriakou, Charalampia; Garderet, Laurent; Hansson, Markus; Zamagni, Elena; Fantl, Dorotea; Leleu, Xavier; Kim, Byung-Su; Esteves, Graca; Ludwig, Heinz; Usmani, Saad; Min, Chang-Ki; Qi, Ming; Ukropec, Jon; Weiss, Brendan M.; Rajkumar, S. Vincent; Durie, Brian G. M.; San-Miguel, Jesus. **International Myeloma Working Group risk stratification model for smoldering multiple myeloma (SMM).** *Blood Cancer Journal.* 10(102). I.F.: 8.023

5. Rodríguez-Lobato LG, Martínez-Roca A, Castaño-Díez S, Palomino-Mosquera A, Gutiérrez-García G, Pedraza A, Suárez-Lledó M, Rovira M, Martínez C, Fernández de Larrea C, Cibeira MT, Rosiñol L, Lozano E, Marín P, Cid J, Lozano M, Moreno-Castaño AB, Palomo M, Díaz-Ricart M, Gallego C, Hernando A, Segura S, Carreras E, Urbano-Ispizua Á, Bladé J, Fernández-Avilés F. **The avoidance of G-CSF and the addition of prophylactic corticosteroids after autologous stem cell transplantation for multiple myeloma patients appeal for the at-home setting to reduce readmission for neutropenic fever.** *Plos One.* 15(11):e0241778. I.F.: 2.740

Review / I.F.: 6.044

1. Rodríguez-Lobato LG, Ganzetti M, Fernández de Larrea C, Hudecek M, Einsele H, Danhof S. **CAR T-Cells in Multiple Myeloma: State of the Art and Future Directions.** *Frontiers in Oncology.* 10:1243. I.F.: 4.848

2. Cibeira MT, Ortiz-Pérez JT, Quintana LF, Fernádez de Larrea C, Tovar N, Bladé J. **Supportive Care in AL Amyloidosis**. *Acta Haematologica.* 143(4):335-342. I.F.: 1.196

Case Reports / I.F.: 2.904

1. Guillen E, Montagud-Marrahi E, Rodriguez DM, Hermida E, Padilla RA, Blasco M, Cibeira MT, Martino R, Fernandez de Larrea C, Campistol JM, Quintana LF. **Living donor kidney transplantation is an effective option of renal replacement therapy in patients with light-chain amyloidosis (AL).** *Annals of Hematology.* 99(12):2961-2962. I.F.: 2.904

GRANTS FOR RESEARCH IN PROGRESS

Fernández de Larrea C. **Ensayo clínico fase II sobre el uso de un CART humanizado dirigido contra BCMA (ARI0002h) en pacientes con mieloma múltiple recaído/refractario a inhibidores del proteasoma, inmunomoduladores y anticuerpos anti-CD38.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_ICI19/00025
Duration: 01/01/2020-31/12/2023

Fernández de Larrea C. **Optimización de la inmunoterapia con células T CAR a través de la inhibición de immune checkpoints para alcanzar una respuesta prolongada en pacientes con mieloma múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00669
Duration: 01/01/2020-31/12/2022

Fernández de Larrea C. **ReDox:Repurposing doxycycline in the treatment of cardiac AL amyloidosis.**
Sponsored by: European Commission and Instituto de Salud Carlos III (ISCIII). CE_E-RA-RE_JTC_2016 and AC16/00058
Duration: 01/05/2017-30/06/2020

5.11 Lymphoid neoplasms

LOCATION
CEK building, floor 2

KEYWORDS
1. **Lymphoma**
2. **Chronic lymphocytic leukemia**
3. **Prognosis**
4. **Mutational profile and CNA**
5. **Clinical trials proliferative disorders**

RELATED DISEASES
1. **Hodgkin lymphoma**
2. **Non-hodgkin lymphoma**
3. **Chronic lymphocytic leukemia**
4. **Other lymphoproliferative disorders**

GROUP INVOLVED IN
CIBERONC
GELTAMO, eMCLN, IELSG
Lymphoma/Leukemia Molecular Profiling Project
European Lymphoma Institute
Pethema/ Grupo Español LLC
Grupo Español CART

AWARDS
Premi extraordinari de Doctorat del curs acadèmic 2018-2019
Institution: Universitat de Barcelona
Awardee/s: Laura Magnano

Original publications

TOTAL	22
I.F.	186,04
Mean I.F.	8,46
Q1	77%
D1	64%
MA	18%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Armando López-Guillermo (HCB)
T. 93 227 54 00 (Ext.: 2946)
alopezg@clinic.cat

RESEARCHERS
Julio Delgado (HCB)
Eva Giné (HCB)
Laura Carola Magnano (HCB)

POST-DOCTORAL RESEARCHERS
Tycho Stephan Baumann (HCB)

PRE-DOCTORAL RESEARCHERS
Pablo Mozas (FCRB)
Valentín Ortiz (FCRB)
Alfredo Rivas (HCB)
Andrea Rivero (HCB)

ADMINISTRATIVE STAFF
Vanessa Arellano (HCB-FCRB)

PROBLEM

Lymphomas and other lymphoproliferative neoplasms are malignant diseases originated at the different steps of maturation of lymphoid cells.

Their classification is highly complex, with more than 50 entities being recognized nowadays. Although many cases could be currently cured or may survive for a long time with immunochemotherapy, still lymphoproliferative diseases lead to the death of a large number of patients.

The study of clinic-biological features of the disease, particularly genetic and molecular alterations, is essential to know the prognosis, choose the best treatment and to develop new therapies.

APPROACH

We use different strategies to improve the understanding on biology, prognosis and treatment of patients with lymphoproliferative disorders, including the following:

1) Epidemiology.
2) Gene expression.
3) Mutational landscape and copy number alterations.
4) Study of the microenvironment.
5) Clinical trials with new treatments and innovative procedures.

All of this is carried out in collaboration with other research groups of IDIBAPS.

IMPACT

The group has obtained results in different areas, from biological data that cannot yet be applied to patients, to clinical trials.

Its most notable results include the genetic characterization of chronic lymphocytic leukemia and diffuse large B-cell lymphoma, the development of prognostic scores and clinical guidelines for the principal lymphoproliferative diseases, and innovative trials with new molecules and therapies (i.e., CAR-T cells therapies).

RESEARCH LINES

- Genomic profile of lymphoproliferative disorders.

- Cellular microenvironment in CLL and other lymphomas.

- Prognostic models in lymphomas.

- Clinical trials in lymphoproliferative disorders, including advanced therapies.

PUBLICATIONS

Originals / I.F.: 186.037

1. Ramis-Zaldivar JE, Gonzalez-Farré B, Balagué O, Celis V, Nadeu F, Salmerón-Villalobos J, Andrés M, Martin-Guerrero I, Garrido-Pontnou M, Gaafar A, Suñol M, Bárcena C, Garcia-Bragado F, Andión M, Azorín D, Astigarraga I, Sagaseta de Ilurdoz M, Sábado C, Gallego S, Verdú-Amorós J, Fernandez-Delgado R, Perez V, Tapia G, Mozos A, Torrent M, Solano-Páez P, Rivas-Delgado A, Dlouhy I, Clot G, Enjuanes A, López-Guillermo A, Galera P, Oberley MJ, Maguire A, Ramsower C, Rimsza LM, Quintanilla-Martinez L, Jaffe ES, Campo E, Salaverria I. **Distinct molecular profile of IRF4-rearranged large B-cell lymphoma.** *Blood*. 135(4):274-286. I.F.: 17.794

2. Nadeu F, Martin-Garcia D, Clot G, Díaz-Navarro A, Duran-Ferrer M, Navarro A, Vilarrasa-Blasi R, Kulis M, Royo R, Gutiérrez-Abril J, Valdés-Mas R, López C, Chapaprieta V, Puiggros M, Castellano G, Costa D, Aymerich M, Jares P, Espinet B, Muntañola A, Ribera-Cortada I, Siebert R, Colomer D, Torrents D, Gine E, López-Guillermo A, Küppers R, Martin-Subero JI, Puente XS, Beà S, Campo E. **Genomic and epigenomic insights into the origin, pathogenesis and clinical behavior of mantle cell lymphoma subtypes.** *Blood*. 136(12):1419-1432. I.F.: 17.794

3. Condoluci, Adalgisa; di Bergamo, Lodovico Terzi; Langerbeins, Petra; Hoechstetter, Manuela A; Herling, Carmen D; De Paoli, Lorenzo; Delgado, Julio; Rabe, Kari G; Gentile, Massimo; Doubek, Michael; Mauro, Francesca R; Chiodin, Giorgia; Mattsson, Mattias; Bahlo, Jasmin; Cutrona, Giovanna; Kotaskova, Jana; Deambrogi, Clara; Smedby, Karin E; Spina, Valeria; Bruscaggin, Alessio; Wu, Wei; Moia, Riccardo; Bianchi, Elena; Gerber, Bernhard; Zucca, Emanuele; Gillessen, Silke; Ghielmini, Michele; Cavalli, Franco; Stussi, Georg; Hess, Mark A; Baumann, Tycho S; Neri, Antonino; Ferrarini, Manlio; Rosenquist, Richard; Forconi, Francesco; Foa, Robin; Pospisilova, Sarka; Morabito, Fortunato; Stilgenbauer, Stephan; Doehner, Hartmut; Parikh, Sameer A; Wierda, William G; Montserrat, Emili; Gaidano, Gianluca; Hallek, Michael; Rossi, Davide. **International prognostic score for asymptomatic early-stage chronic lymphocytic leukemia.** *Blood*. 135(21):1859-1869. I.F.: 17.794

4. Vercellino L; Cottereau AS; Casasnovas O; Tilly H; Feugier P; Chartier L; Fruchart C; Roulin L; Oberic L; Pica GM; Ribrag V; Abraham J; Simon M; Gonzalez H; Bouabdallah R; Fitoussi O; Sebban C; López-Guillermo A; Sanhes L; Morschhauser F; Trotman J; Corront B; Choufi B; Snauwaert S; Godmer P; Briere J; Salles G; Gaulard P; Meignan M; Thieblemont C. **High total metabolic tumor volume at baseline predicts survival independent of response to therapy.** *Blood*. 135(16):1396-1405. I.F.: 17.794

5. Nadeu F, Mas-de-Les-Valls R, Navarro A, Royo R, Martín S, Villamor N, Suárez-Cisneros H, Mares R, Lu J, Enjuanes A, Rivas-Delgado A, Aymerich M, Baumann T, Colomer D, Delgado J, Morin RD, Zenz T, Puente XS, Campbell PJ, Beà S, Maura F, Campo E. **IgCaller for reconstructing immunoglobulin gene rearrangements and oncogenic translocations from whole-genome sequencing in lymphoid neoplasms.** *Nature Communications*. 11(1):3390. I.F.: 12.121

6. Davids MS, Kuss BJ, Hillmen P, Montillo M, Moreno C, Essell J, Lamanna N, Nagy Z, Tam CS, Stilgenbauer S, Ghia P, Delgado J, Lustgarten S, Weaver DT, Youssoufian H, Jäger U. **Efficacy and Safety of Duvelisib Following Disease Progression on Ofatumumab in Patients with Relapsed/Refractory CLL or SLL in the DUO Crossover Extension Study.** *Clinical Cancer Research*. 26(9):2096-2103. I.F.: 10.107

7. Brieghel C, da Cunha-Bang C, Yde CW, Schmidt AY, Kinalis S, Nadeu F, Andersen MA, Jacobsen LO, Andersen MK, Pedersen LB, Delgado J, Baumann T, Mattsson M, Mansouri L, Rosenquist R, Campo E, Nielsen FC, Niemann CU. **The Number of Signaling Pathways Altered by Driver Mutations in Chronic Lymphocytic Leukemia Impacts Disease Outcome**. *Clinical Cancer Research*. 26(6):1507-1515. I.F.: 10.107

8. Nadeu F; Royo R; Maura F; Dawson K; Dueso-Barroso A; Aymerich M; Pinyol M; Beà S; López-Guillermo A; Delgado J; Puente X; Campo E. **Minimal spatial heterogeneity in chronic lymphocytic leukemia at diagnosis.** *Leukemia*. 34(7):1929-1933. I.F.: 8.665

9. Giménez N, Schulz R, Higashi M, Aymerich M, Villamor N, Delgado J, Juan M, López-Guerra M, Campo E, Rosich L, Seiffert M, Colomer D . **Targeting IRAK4 disrupts inflammatory pathways and delays tumor development in chronic lymphocytic leukemia.** *Leukemia*. 34(1):100-114. I.F.: 8.665

10. Scarfò L, Chatzikonstantinou T, Rigolin GM, Quaresmini G, Motta M, Vitale C, Garcia-Marco JA, Hernández-Rivas JÁ, Mirás F, Baile M, Marquet J, Niemann CU, Reda G, Munir T, Gimeno E, Marchetti M, Quaglia FM, Varettoni M, Delgado J, Iyengar S, Janssens A, Marasca R, Ferrari A, Cuéllar-García C, Itchaki G, Špaček M, De Paoli L, Laurenti L, Levin MD, Lista E, Mauro FR, Šimkovič M, Van Der Spek E, Vandenberghe E, Trentin L, Wasik-Szczepanek E, Ruchlemer R, Bron D, De Paolis MR, Del Poeta G, Farina L, Foglietta M, Gentile M, Herishanu Y, Herold T, Jaksic O, Kater AP, Kersting S, Malerba L, Orsucci L, Popov VM, Sportoletti P, Yassin M, Pocali B, Barna G, Chiarenza A, Dos Santos G, Nikitin E, Andres M, Dimou M, Doubek M, Enrico A, Hakobyan Y, Kalashnikova O, Ortiz Pareja M, Papaioannou M, Rossi D, Shah N, Shrestha A, Stanca O, Stavroyianni N, Strugov V, Tam C, Zdrenghea M, Coscia M, Stamatopoulos K, Rossi G, Rambaldi A, Montserrat E, Foà R, Cuneo A, Ghia P. **COVID-19 severity and mortality in patients with chronic lymphocytic leukemia: a joint study by ERIC, the European Research Initiative on CLL, and CLL Campus**. *Leukemia*. 34(9):2354-2363. I.F.: 8.665

11. Mozas P, Nadeu F, Rivas-Delgado A, Rivero A, Garrote M, Balagué O, González-Farré B, Veloza L, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Magnano L, López-Guillermo A. **Patterns of change in treatment, response, and outcome in patients with follicular lymphoma over the last four decades: a single-center experience.** *Blood Cancer Journal*. 10(3):31. I.F.: 8.023

12. López-Guerra M, Xargay-Torrent S, Fuentes P, Roldán J, González-Farré B, Rosich L, Silkenstedt E, García-León MJ, Lee-Vergés E, Giménez N, Giró A, Aymerich M, Villamor N, Delgado J, López-Guillermo A, Puente XS, Campo E, Toribio ML, Colomer D. **Specific NOTCH1 antibody targets DLL4-induced proliferation, migration, and angiogenesis in NOTCH1-mutated CLL cells.** *Oncogene*. 39(6):1185-1197. I.F.: 7.971

13. Vidal-Crespo A; Matas-Céspedes A; Rodriguez V; Rossi C; Valero JG; Serrat N; Sanjuan-Pla A; Menéndez P; Roué G; López-Guillermo A; Giné E; Campo E; Colomer D; Bezombes C; van Bueren JL; Chiu C; Doshi P; Pérez-Galán P. **Daratumumab displays in vitro and in vivo anti-tumor activity in models of B-cell non-Hodgkin lymphoma and improves responses to standard chemo-immunotherapy regimens.** *Haematologica*. 105(4):1032-1041. I.F.: 7.116

14. Conconi A, Thieblemont C, Cascione L, Torri V, Kiesewetter B, Margiotta Casaluci G, Gaidano G, Raderer M, Cavalli F, Lopez Guillermo A, Johnson PW, Zucca E. **Early progression of disease predicts shorter survival in MALT lymphoma patients receiving systemic treatment.** *Haematologica*. 105(11):2592-2597. I.F: 7.116

15. Castella M; Caballero-Baños M; Ortiz-Maldonado V; González-Navarro EA; Suñé G; Antoñana-Vidósola A; Boronat A; Marzal B; Millán L; Martín-Antonio B; Cid J; Lozano M; García E; Tabera J; Trias E; Perpiña U; Canals JM; Baumann T; Benítez-Ribas D; Campo E; Yagüe J; Urbano-Ispizua Á; Rives S; Delgado J; Juan M. **Point-of-care CAR T-cell production (ARI-0001) using a closed semi-automatic bioreactor: Experience from an academic phase i clinical trial.** *Frontiers In Immunology*. 11(482):482. I.F.: 5.085

16. Serrat N, Guerrero-Hernández M, Matas-Céspedes A, Yahiaoui A, Valero JG, Nadeu F, Clot G, Di Re M, Corbera-Bellalta M, Magnano L, Rivas-Delgado A, Enjuanes A, Beà S, Cid MC, Campo E, Montero J, Hodson DJ, López-Guillermo A, Colomer D, Tannheimer S, Pérez-Galán P . **PI3Kδ inhibition reshapes follicular lymphoma-immune microenvironment cross talk and unleashes the activity of venetoclax.** *Blood Advances*. 4(17):4217-4231. I.F.: 4.910

17. Gimenez N, Tripathi R, Giró A, Rosich L, López-Guerra M, López-Oreja I, Playa-Albinyana H, Arenas F, Mas JM, Pérez-Galán P, Delgado J, Campo E, Farrés J, Colomer D. **Systems biology drug screening identifies statins as enhancers of current therapies in chronic lymphocytic leukemia.** *Scientific Reports (Nature Publisher Group)*. 10(1):22153. I.F.: 3.998

18. Muntañola A; Baumann T; Caballero AC; Sánchez-González B; Mercadal S; Escoda L; Soler A; Iserte L; Canet M; Villalobos MT; Magnano L; Sorigué M; García O; Salar A; López-Guillermo A; Sancho JM. **Results of R-ESHAP as salvage therapy in refractory/relapsed follicular lymphoma: a real-world experience on behalf of GELCAB group.** *Annals of Hematology*. 99(7):1627-1634. I.F.: 2.904

19. Bastos-Oreiro M; Muntañola A; Panizo C; Gonzalez-Barca E; de Villambrosia SG; Córdoba R; López JLB; González-Sierra P; Terol MJ; Gutierrez A; Grande C; Ramirez MJ; Iserte L; Perez E; Navarro B; Gomez P; Salar A; Luzardo H; López A; Del Campo R; García-Belmonte D; Vida MJ; Infante M; Queizan-Hernandez JA; Novelli S; Moreno M; Penarrubia M; Gómez J; Domingo A; Donato E; Viguria MC; López F; Rodriguez MJ; Pardal E; Noriega V; Andreu R; Peñalver J; Martín A; Caballero D; López-Guillermo A. **RELINF: prospective epidemiological registry of lymphoid neoplasms in Spain. A project from the GELTAMO group.** *Annals of Hematology*. 99(4):799-808. I.F.: 2.904

20. Gutierrez A; Bento L; Diaz-Lopez A; Barranco G; Garcia-Recio M; Lopez-Guillermo A; Dlouhy I; Rovira J; Rodriguez M; Sanchez Pina JM; Baile M; Martín A; Novelli S; Sancho JM; García O; Salar A; Bastos-Oreiro M; Rodriguez-Salazar MJ; Fernandez R; de la Cruz F; Queizan JA; González de Villambrosia S; Cordoba R; López A; Luzardo H; García D; Sastre-Serra J; Garcia JF; Montalban C; Cabanillas F; Rodríguez J. **Evaluation of the MD Anderson tumor score for diffuse large B-cell lymphoma in the rituximab era.** *European Journal of Haematology*. 104(5):400-408. I.F.: 2.220

21. Mozas P, Rivas-Delgado A, Rivero A, Dlouhy I, Nadeu F, Balagué O, González-Farré B, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Pérez-Galán P, Filella X, Magnano L, López-Guillermo A . **High serum levels of IL-2R, IL-6, and TNF-α are associated with higher tumor burden and poorer outcome of follicular lymphoma patients in the rituximab era**. *Leukemia Research*. 94(106371). I.F.: 2.214

22. Sorigue M, Magnano L, Miljkovic MD, Nieto-Moragas J, Santos-Gomez M, Villamor N, Junca J, Morales-Indiano C. **Positive predictive value of CD200 positivity in the differential diagnosis of chronic lymphocytic leukemia**. *Cytometry Part B-Clinical Cytometry*. 98(5):441-448. I.F.: 2.070

23. Duran-Ferrer M, Clot G, Nadeu F, Beekman R, Baumann T, Nordlund J, Marincevic-Zuniga Y, Lönnerholm G, Rivas-Delgado A, Martin S, Ordoñez R, Castellano G, Kulis M, Queirós A, Seung-Tae L, Wiemels J, Royo R, Puiggrós M, Lu J, Gine E, Beà S, Jares P, Agirre X, Prosper F, López-Otín C, Puente XS, Oakes CC, Zenz T, Delgado J, López-Guillermo A, Campo E, Martin-Subero JI. **The proliferative history shapes the DNA methylome of B-cell tumors and predicts clinical outcome.** *Nature Cancer*. 1(11):1066-1081

Review / I.F.: 28.951

1. Nadeu F; Diaz-Navarro A; Delgado J; Puente X; Campo E. **Genomic and Epigenomic Alterations in Chronic Lymphocytic Leukemia.** *Annual Review of Pathology-Mechanisms of Disease*. 15:149-177. I.F.: 16.750

2. Delgado J; Nadeu F; Colomer D; Campo E. **Chronic lymphocytic leukemia: from molecular pathogenesis to novel therapeutic strategies.** *Haematologica*. 105(9):2205-2217. I.F.: 7.116

3. Sandler RD; Tattersall RS; Schoemans H; Greco R; Badoglio M; Labopin M; Alexander T; Kirgizov K; Rovira M; Saif M; Saccardi R; Delgado J; Peric Z; Koenecke C; Penack O; Basak G; Snowden JA. **Diagnosis and Management of Secondary HLH/MAS Following HSCT and CAR-T Cell Therapy in Adults; A Review of the Literature and a Survey of Practice Within EBMT Centres on Behalf of the Autoimmune Diseases Working Party (ADWP) and Transplant Complications Working Party (TCWP).** *Frontiers in Immunology*. 11:524. I.F.: 5.085

Letters / I.F.: 35.789

1. Urbano-Ispizua A; Delgado J. **Welcome to the CART cocktail reception.** *Blood*. 135(1):3-3. I.F.: 17.794

2. Baumann T; Delgado J; Montserrat E. **CLL and COVID-19 at the Hospital Clinic of Barcelona: an interim report.** *Leukemia*. 34(7):1954-1956. I.F.: 8.665

3. Fuster C, Martín-Garcia D, Balagué O, Navarro A, Nadeu F, Costa D, Prieto M, Salaverria I, Espinet B, Rivas-Delgado A, Terol MJ, Giné E, Forcada P, Ashton-Key M, Puente XS, Swerdlow SH, Beà S, Campo E. **Cryptic insertions of the immunoglobulin light chain enhancer region near CCND1 in t(11;14)-negative mantle cell lymphoma.** *Haematologica*. 105(8):e408-e411. I.F.: 7.116

4. Molica S; Baumann TS; Lentini M; Levato L; Delgado J; Montserrat E. **The BALL prognostic score identifies relapsed/refractory CLL patients who benefit the most from single agent ibrutinib therapy**. *Leukemia Research*. 95(2020):106401. I.F.: 2.214

Editorial / I.F.: 5.518

1. Magnano, Laura; Lopez-Guillermo, Armando. **Minimal residual disease - ready for prime time in follicular lymphoma?** *British Journal of Haematology.* 188(2):205-206. I.F.: 5.518

Case Reports / I.F.: 12.161

1. Magnano L; Navarro A; López-Guerra M; Clot G; Beà S; Bastidas G; Costa D; Rivero A; Garrote M; Giné E; Rozman M; Aymerich M; Colomer D; López-Guillermo A; Campo E; Villamor N; Matutes E. **Chronic lymphocytic leukemia and prolymphocytic leukemia. Two coins or two sides of the same coin?** *Haematologica.* 105(9):E484-E487. I.F.: 7.116

2. García-García I; Cid J; Palomino A; Giné E; Alvarez-Larrán A; Cibeira MT; Lozano M. **Role of therapeutic plasma exchanges in refractory severe warm autoimmune hemolytic anemia: Presentation of two case reports.** *Transfusion.* 60(11):2753-2757. I.F.: 2.800

3. Sanchez S; Veloza L; Wang L; López M; López-Guillermo A; Marginet M; Martínez A; Balagué O; Campo E. **HHV8-positive, EBV-positive Hodgkin lymphoma-like large B cell lymphoma: expanding the spectrum of HHV8 and EBV-associated lymphoproliferative disorders.** *International Journal of Hematology.* 112(5):734-740. I.F.: 2.245

GRANTS FOR RESEARCH IN PROGRESS

Delgado J. **Rol de los nuevos fármacos en la optimización del efecto antitumoral del tratamiento mediante linfocitos T con receptores antigénicos quiméricos anti CD19 (CART19) en leucemia linfática crónica.**
Sponsored by: Fundación Española de Hematología y Hemoterapia. FEHH_BE-CAS17_02
Duration: 01/03/2018-

Delgado J. **CART19-BE-02: Phase II clinical trial on the use of ARI-0001 cells in patients with CD19+ relapsed/refractory acute lymphoid leukemia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PIC18/00012
Duration: 01/01/2019-31/12/2022

López-Guillermo A, Giné E. **Predictive biomarkers (gene alterations, microenvironment and tumor burden) in B-cell aggressive lymphomas candidate to intensive treatment (transplantation or CAR-T cell therapy).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00887
Duration: 01/01/2020-31/12/2022

López-Guillermo A. **Sequential assessment of the mutational landscape of follicular lymphoma in different clinical situations, including late relapse, early failure and histological transformation.**
Sponsored by: Gilead Sciences (SLU). GLD17/00197
Duration: 11/12/2017-

Magnano L. **Caracterización del perfil inmune de pacientes con linfoma folicular. Impacto en la respuesta al tratamiento y relevancia pronóstica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00925
Duration: 01/01/2020-31/12/2022

5.12 Biomedical epigenomics

LOCATION
CEK building, floor 2

KEYWORDS
1. **Epigenomics**
2. **Chromatin**
3. **DNA methylation**
4. **Bioinformatics**
5. **Epigenetic biomarkers**
6 **Leukemia**
7. **Lymphoma**
8 **Single cell omics**

RELATED DISEASES
1. **Chronic lymphocytic leukemia**
2. **Mantle cell lymphoma**
3. **Multiple myeloma**
4. **Diffuse large B cell lymphoma**

GROUP INVOLVED IN
AGAUR_SGR17: 00736
CIBERONC

AWARDS
X Premio Nacional de Investigación de Cáncer Doctores Diz Pintado
Institution: Fundación de Investigación del Cáncer de la Universidad de la Salamanca (FICUS) – Centro de Investigación del Cáncer (CIC)
Awardee/s: José Ignacio Martín-Subero

Translational Research Training in Hematology (TRTH) Award
Institution: American Society of Hematology (ASH) and European Hematology Association (EHA)
Awardee/s: Alba Maiques

Original publications

TOTAL	6
I.F.	66,05
Mean I.F.	11,01
Q1	100%
D1	100%
MA	17%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
José Ignacio Martín-Subero (IDIBAPS)
T. 93 227 54 00 (Ext.: 4583)
imartins@clinic.cat

ASSISTANT RESEARCHERS
Cecilia Rosales (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Marta Kulis (IDIBAPS)
Alba Maiques (IDIBAPS)
Paula Soler (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Vicente Chapaprieta (UB-IDIBAPS)
Martí Duran (IDIBAPS)
Beatriz García Torre (IDIBAPS)
Victor Manuel González Basallote (IDIBAPS)
Judith Mateos Jaimez (IDIBAPS)
Roser Vilarrasa (IDIBAPS)

TECHNICIANS
Stella Charalampopoulou (IDIBAPS)
Mònica Romo (IDIBAPS)
Nuria Russiñol (FCRB-IDIBAPS)
Núria Verdaguer Dot (IDIBAPS)
Anna Vidal Crespo (IDIBAPS)

PROBLEM

Neoplasms that originate in the lymph nodes represent a heterogeneous group of diseases with very different biological and clinical characteristics.

Understanding the underlying mechanisms of the development and evolution of these neoplasms is essential in order to gradually improve their diagnosis, estimate their prognosis and treat patients.

APPROACH

The group studies lymphoid neoplasms such as chronic lymphocytic leukemia or mantle cell lymphoma from the perspective of epigenetics, which is the science that analyses the way in which gene expression is regulated.

Its aim is to discover and evaluate the keys to the transcriptional alterations found in samples from patients with lymphoid cancer. To achieve this, the group studies different epigenetic markers such as DNA methylation, histone modifications, chromatin accessibility, and 3D genome structure.

IMPACT

The group's research has resulted in different findings, such as: knowledge of how lymphoid neoplasms maintain an epigenetic signature from their cell of origin; that the activity of regulatory sites at a distance from the genes, so-called enhancers, are deregulated by epigenetic alterations and mutations; and that certain transcription factors appear to be the main elements responsible for altering the activity of the regulatory sites.

Apart from helping to understand how lymphoid neoplasms function, these studies have enabled the group to better calculate the clinical outcome of patients and identify new therapeutic targets.

RESEARCH LINES

- Decipher the clinical impact of epigenomics in lymphoid neoplasms.

- Functional analysis of deregulated transcriptional networks in lymphoid neoplasms.

- Integrative epigenomic characterization of normal and neoplastic B cells.

- Study the origin and evolution of intraclonal heterogeneity in B cell tumors through single cell technologies.

PUBLICATIONS

Originals / I.F.: 66.046

1. Nadeu F, Martin-Garcia D, Clot G, Díaz-Navarro A, Duran-Ferrer M, Navarro A, Vilarrasa-Blasi R, Kulis M, Royo R, Gutiérrez-Abril J, Valdés-Mas R, López C, Chapaprieta V, Puiggros M, Castellano G, Costa D, Aymerich

M, Jares P, Espinet B, Muntañola A, Ribera-Cortada I, Siebert R, Colomer D, Torrents D, Gine E, López-Guillermo A, Küppers R, Martin-Subero JI, Puente XS, Beà S, Campo E. **Genomic and epigenomic insights into the origin, pathogenesis and clinical behavior of mantle cell lymphoma subtypes.** *Blood.* 136(12):1419-1432. I.F.: 17.794

2. Grossi E, Raimondi I, Goñi E, González J, Marchese FP, Chapaprieta V, Martín-Subero JI, Guo S, Huarte M. **A lncRNA-SWI/SNF complex crosstalk controls transcriptional activation at specific promoter regions.** *Nature Communications.* 11(1):936. I.F.: 12.121

3. Ordoñez R, Kulis M, Russiñol N, Chapaprieta V, Carrasco-Leon A, García-Torre B, Charalampopoulou S, Clot G, Beekman R, Meydan C, Durn Miguel J, Flicek P, Gut I, Melnick A, Mitsiades CS, Licht JD, Campo E, Stunnenberg HG, Agirre X, Prosper F, Martin-Subero JI. **Chromatin activation as a unifying principle underlying pathogenic mechanisms in multiple myeloma**. *Genome Research.* 30(9):1217-1227. I.F.: 11.093

4. Massoni-Badosa R; Iacono G; Moutinho C; Kulis M; Palau N; Marchese D; Rodríguez-Ubreva J; Ballestar E; Rodriguez-Esteban G; Marsal S; Aymerich M; Colomer D; Campo E; Julià A; Martín-Subero JI; Heyn H. **Sampling time-dependent artifacts in single-cell genomics studies.** *Genome Biology.* 21(1):112. I.F.: 10.806

5. Vidal-Crespo A; Matas-Céspedes A; Rodriguez V; Rossi C; Valero JG; Serrat N; Sanjuan-Pla A; Menéndez P; Roué G; López-Guillermo A; Giné E; Campo E; Colomer D; Bezombes C; van Bueren JL; Chiu C; Doshi P; Pérez-Galán P. **Daratumumab displays in vitro and in vivo anti-tumor activity in models of B-cell non-Hodgkin lymphoma and improves responses to standard chemo-immunotherapy regimens.** *Haematologica.* 105(4):1032-1041. I.F.: 7.116

6. Chatonnet F; Pignarre A; Sérandour AA; Caron G; Avner S; Robert N; Kassambara A; Laurent A; Bizot M; Agirre X; Prosper F; Martin-Subero JI; Moreaux J; Fest T; Salbert G. **The hydroxymethylome of multiple myeloma identifies FAM72D as a 1q21 marker linked to proliferation.** *Haematologica.* 105(3):774-783. I.F.: 7.116

7. Duran-Ferrer M, Clot G, Nadeu F, Beekman R, Baumann T, Nordlund J, Marincevic-Zuniga Y, Lönnerholm G, Rivas-Delgado A, Martin S, Ordoñez R, Castellano G, Kulis M, Queirós A, Seung-Tae L, Wiemels J, Royo R, Puiggrós M, Lu J, Gine E, Beà S, Jares P, Agirre X, Prosper F, López-Otín C, Puente XS, Oakes CC, Zenz T, Delgado J, López-Guillermo A, Campo E, Martin-Subero JI. **The proliferative history shapes the DNA methylome of B-cell tumors and predicts clinical outcome**. *Nat Cancer.* 1(11):1066-1081.

Letters / I.F.: 7.116

1. Tsagiopoulou M; Chapaprieta V; Duran-Ferrer M; Moysiadis T; Psomopoulos F; Kollia P; Papakonstantinou N; Campo E; Stamatopoulos K; Martin-Subero JI. **Chronic lymphocytic leukemias with trisomy 12 show a distinct DNA methylation profile linked to altered chromatin activation.** *Haematologica.* 105(12):2864-2867. I.F.: 7.116

Consortium Publications / I.F.: 67.021

1. ICGC/TCGA Pan-Cancer Analysis of Whole Genomes Consortium. **Pan-cancer analysis of whole genomes**. *Nature.* 578(7793):82-93. I.F.: 42.779

2. Li CH; Prokopec SD; Sun RX; Yousif F; Schmitz N; PCAWG Tumour Subtypes and Clinical Translation; Boutros PC; PCAWG Consortium. **Sex differences in oncogenic mutational processes.** *Nature Communications.* 11(1):4330. I.F.: 12.121

3. Bailey MH; Meyerson WU; Dursi LJ; Wang LB; Dong G; Liang WW; Weerasinghe A; Li S; Kelso S; MC3 Working Group; PCAWG novel somatic mutation calling methods working group; Saksena G; Ellrott K; Wendl MC; Wheeler DA; Getz G; Simpson JT; Gerstein MB; Ding L; PCAWG Consortium. **Retrospective evaluation of whole exome and genome mutation calls in 746 cancer samples.** *Nature Communications.* 11(1):4748. I.F.: 12.121

GRANTS FOR RESEARCH IN PROGRESS

Maiques A, Martín-Subero I. **Role of Transcription Factors as drivers of chronic lymphocytic leukemia.**
Sponsored by: Lady Tata memorial trust.
INT_LADY_TATA_19_2664
Duration: 01/10/2019-31/03/2021

Martín-Subero I. **Biomedical Epigenomics.**
Sponsored by: Generalitat de Catalunya.
AGAUR_SGR17_00736
Duration: 01/01/2017-30/09/2021

Martín-Subero I. **Deciphering the role of transcription factors as chromatin modulators and drivers of lymphoid neoplasm.**
Sponsored by: Fundació La Marató de TV3.
Cancer_19
Duration: 30/07/2020-29/07/2023

Martín-Subero I. **Characterization of oncogenic (epi)genetically deregulated in chronic lymphocytic leukemia.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_Contratos16
Duration: 01/10/2016-

Martín-Subero I. **ChromMCL: Análisis a escala genómica de la estructura de la cromatina en el linfoma de las células del manto: Impacto biológico y clínico.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2017-86126-R
Duration: 01/01/2018-30/06/2021

Martín-Subero I. **Single-cell genomics to comprehensively understand healthy B-cell maturation and transformation chronic lymphocytic leukemia.**
Sponsored by: European Commission.
CE_H2020-ERC-2018_Sy (810287_JIMS)
Duration: 01/04/2019-31/03/2024

Martín-Subero I. **Early detection and intervention: Understanding the mechanisms of transformation and hidden resistance of incurable haematological malignancies.**
Sponsored by: Fundación para la Investigación Médica Aplicada and Fundación científica Asociación Española contra el Cáncer.
INT_AA_17 and AccAward17
Duration: 01/12/2018-30/11/2023

DOCTORAL THESIS

Martín-Subero I. **The role of genome architecture in normal and neoplastic B cells: a multi-omics approach .**
PhD student: Roser Vilarrasa Blasi

Martín-Subero I. **Tracing the developmental history of B-cell tumors by DNA methylation.**
PhD student: MartÍ Duran Ferrer

5.13 Molecular biology of reproduction and development

LOCATION
UB School of Medicine

KEYWORDS
1. **Germinal cell line**
2. **Male infertility**
3. **Proteomics**
4. **Epigenetics**
5. **Cancer**
6. **Endocrine system**
7. **iPSC**

RELATED DISEASES
1. **Male sterility/infertility**
2. **Cancer**

GROUP INVOLVED IN
AGAUR_SGR17: 01555

Original publications

TOTAL	5
I.F.	**20,89**
Mean I.F.	**4,18**
Q1	**60%**
D1	**20%**
MA	**60%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Rafael Oliva (HCB-UB)
T. 93 402 18 77 / 93 227 55 10
roliva@ub.edu / roliva@clinic.cat

RESEARCHERS
Cristóbal Mezquita (UB)
Jovita Mezquita (UB)
Josep Oriola (HCB-UB)

ASSISTANT RESEARCHERS
Betlem Mezquita (UB)

POST-DOCTORAL RESEARCHERS
Judit Castillo (IDIBAPS)
Meritxell Jodar (FCRB-UB)

PRE-DOCTORAL RESEARCHERS
Ferran Barrachina (IDIBAPS)
Alberto de la Iglesia (IDIBAPS)
Jose Manuel Mayorga (UB)
Ada Soler (UB)

TECHNICIANS
Montserrat Pau (UB)

ADMINISTRATIVE STAFF
Nuria Roman (UB)

PROBLEM

Sterility, and alterations in cellular development and differentiation, are very common medical problems that affect 1 in 5 couples of reproductive age and a very large proportion of the adult population.

Most causes are still unknown, a fact which has a negative effect on the success of reproduction treatments.

The group is investigating the molecular causes of male sterility and alterations in the differentiation of germ cells, embryonic development, and the transmission of information to subsequent generations.

Thus, it will be possible to obtain a correct diagnosis and prognosis, as well as open the door to new strategies for prevention and treatment.

APPROACH

The group applies genetic, genomic, epigenomic, transcriptomic and proteomic description strategies to the study of the male germinal line.

Its objective is to identify both normal molecular mechanisms and alterations in the reproductive function, embryonic development, and the transmission of information, that can affect the health of the following generations.

IMPACT

The group has been a pioneer group in the molecular description of the normal male germinal line and of the alterations associated with sterility and reproductive failures. Its research has enabled it to identify embryo proteins exclusively from the father.

The group is currently investigating parental contribution to embryogenesis (embryo formation and development), the health of offspring from the perspective of RNA, proteins and epigenetic information – which could explain many of the alterations associated with reproductive failure – to metabolic problems or cell differentiation in adulthood.

RESEARCH LINES

- Characterization of epigenetic signatures in the sperm chromatin.

- Characterization of exosomes isolated from seminal fluid and development of clinically relevant diagnostic and prognostic biomarkers.

- Characterization of genes involved in the familial non-syndromic differentiated thyroid carcinoma.

- Functional validation of paternally-derived embryo proteins during early embryogenesis.

- Genetics of endocrine disorders.

- Mechanisms involved in redifferentiation of cancer cells.

- Molecular alterations in semen from couples with idiopathic infertility.

PUBLICATIONS

Originals / I.F.: 20.888

1. Sastre L, To-Figueras J, Lens S, Rodriguez-Tajes S, Bartres C, Aguilera P, Badenas C, Oliva R, Pocurull A, Forns X, Mariño Z. **Resolution of subclinical porphyria cutanea tarda after hepatitis C eradication with direct-acting anti-virals.** *Alimentary Pharmacology & Therapeutics.* 51(10):968-973. I.F.: 7.515

2. Soler-Ventura A; Gay M; Jodar M; Vilanova M; Castillo J; Arauz-Garofalo G; Villarreal L; Ballescà JL; Vilaseca M; Oliva R. **Characterization of Human Sperm Protamine Proteoforms through a Combination of Top-Down and Bottom-Up Mass Spectrometry Approaches.** *Journal of Proteome Research.* 19(1):221-237. I.F.: 4.074

3. Arato I; Grande G; Barrachina F; Bellucci C; Lilli C; Jodar M; Aglietti MC; Mancini F; Vincenzoni F; Pontecorvi A; Calafiore R; Oliva R; Luca G; Mancuso F; Milardi D. **"In vitro" Effect of Different Follicle-Stimulating Hormone Preparations on Sertoli Cells: Toward a Personalized Treatment for Male Infertility.** *Frontiers in Endocrinology.* 11:401. I.F.: 3.644

4. Jodar M, Attardo-Parrinello C, Soler-Ventura A, Barrachina F, Delgado-Dueñas D, Cívico S, Calafell JM, Ballescà JL, Oliva R. **Sperm proteomic changes associated with early embryo quality after ICSI.** *Reproductive Biomedicine Online.* 40(5):700-710. I.F.: 3.218

5. Orois, Aida; Badenas, Celia; Reverter, Jordi L; Lopez, Veronica; Potrony, Miriam; Mora, Mireia; Halperin, Irene; Oriola, Josep. **Lack of Mutations in POT1 Gene in Selected Families with Familial Non-Medullary Thyroid Cancer.** *Hormones & Cancer.* 11(2):111-116. I.F.: 2.437

GRANTS FOR RESEARCH IN PROGRESS

Oliva R. **Análisis proteómico y transcriptómico del semen e identificación de biomarcadores capaces de evaluar la contribución paterna a la fertilización y la embriogénesis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00346
Duration: 01/01/2017-31/12/2020

DOCTORAL THESES

Oliva R, Jodar M. **Proteòmica del plasma seminal i de les seves vesícules extracel·lulars: nova font de biomarcadors útils en l'estudi de la funció espermàtica i la infertilitat masculina.**
PhD student: Ferran Barrachina Villalonga

5.14 Microenvironment in lymphoma pathogenesis and therapy

LOCATION
CEK building, floor 2

KEYWORDS
1. **Non Hodgkin lymphoma**
2. **Microenvironment**
3. **Immunotherapy**
4. **Targeted therapy**

RELATED DISEASES
1. **Lymphoma**
2. **Leukemia**

GROUP INVOLVED IN
CIBERONC
AGAUR_SGR17: 0009

Original publications

TOTAL	4
I.F.	**18,24**
Mean I.F.	**4,56**
Q1	**75%**
D1	**25%**
MA	**50%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Patricia Pérez Galán (IDIBAPS)
pperez@clinic.cat

POST-DOCTORAL RESEARCHERS
Juan García Valero (IDIBAPS)
Neus Serrat (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Ferran Araujo Ayala (IDIBAPS)
Celia Dobaño (IDIBAPS)

ADMINISTRATIVE STAFF
Euridice Alvaro (IDIBAPS)
Patricia Carvajal (IDIBAPS)
Ricardo Attilio Cipollina (IDIBAPS)

PROBLEM

B-cell non-Hodgkin lymphomas (B-NHL) are haematological cancers. Their origin lies in a close cooperation between the genetic alterations of the lymphoma and the support of surrounding cells, which is known as the tumour microenvironment.

For a treatment to be effective, it is mandatory to attack the lymphoma cells using targeted therapies, and to dismantle this protective lymphoma-microenvironment network.

APPROACH

The group studies the crosstalk between lymphoma cells and its immune microenvironment. This knowledge may allow establishing the basis to manipulate these interactions and the design of novel, targeted and personalised therapies.

For this purpose, the group has generated next - generation ex vivo 3D cultures composed of cells from patients diagnosed of B-NHL at HCB with associated genetic information, including tumour microenvironment cells.

These systems constitute robust lymphoma models to test novel targeted therapies, immunotherapies and combinations.

IMPACT

The group's objective is unquestionably to conduct basic research in order to improve the treating options for lymphoma patients, characterising their mechanisms of action and resistance.

The group has a privileged organisation working in a multidisciplinary setting, where collaborations among basic researchers, haematologists and pathologists facilitates bench-to bedside translation

RESEARCH LINES

- 3D lymphoma patient derived primary cultures: a superior in vitro system for personalized medicine.

- Follicular lymphoma crosstalk with its immune microenvironment as a source novel targeted therapies.

- Novel immunotherapeutic approaches in non-Hodgkin lymphoma (NHL).

PUBLICATIONS

Originals / I.F.: 18.238

1. Vidal-Crespo A; Matas-Céspedes A; Rodriguez V; Rossi C; Valero JG; Serrat N; Sanjuan-Pla A; Menéndez P; Roué G; López-Guillermo A; Giné E; Campo E; Colomer D; Bezombes C; van Bueren JL; Chiu C; Doshi P; Pérez-Galán P. **Daratumumab displays in vitro and in vivo anti-tumor activity in models of B-cell non-Hodgkin lymphoma and improves responses to standard chemo-immunotherapy regimens.** *Haematologica.* 105(4):1032-1041. I.F.: 7.116

2. Serrat N, Guerrero-Hernández M, Matas-Céspedes A, Yahiaoui A, Valero JG, Nadeu F, Clot G, Di Re M, Corbera-Bellalta M, Magnano L, Rivas-Delgado A, Enjuanes A, Beà S, Cid MC, Campo E, Montero J, Hodson DJ, López-Guillermo A, Colomer D, Tannheimer S, Pérez-Galán P. **PI3Kδ inhibition reshapes follicular lymphoma-immune microenvironment cross talk and unleashes the activity of venetoclax.** *Blood Advances.* 4(17):4217-4231. I.F.: 4.910

3. Gimenez N, Tripathi R, Giró A, Rosich L, López-Guerra M, López-Oreja I, Playa-Albinyana H, Arenas F, Mas JM, Pérez-Galán P, Delgado J, Campo E, Farrés J, Colomer D. **Systems biology drug screening identifies statins as enhancers of current therapies in chronic lymphocytic leukemia.** *Scientific Reports.* 10(1):22153. I.F.: 3.998

4. Mozas P, Rivas-Delgado A, Rivero A, Dlouhy I, Nadeu F, Balagué O, González-Farré B, Baumann T, Giné E, Delgado J, Villamor N, Campo E, Pérez-Galán P, Filella X, Magnano L, López-Guillermo A. **High serum levels of IL-2R, IL-6, and TNF-α are associated with higher tumor burden and poorer outcome of follicular lymphoma patients in the rituximab era.** *Leukemia Research.* 94(106371):106371. I.F.: 2.214

GRANTS FOR RESEARCH IN PROGRESS

Pérez-Galán P. **Tailored Immunotherapies in 3D models of Follicular Lymphoma (TAIFOL).**
Sponsored by: Fundació La Marató de TV3. Cancer_19
Duration: 20/07/2020-19/07/2023

Pérez-Galán P. **Interacciones multi-celulares en la progresión de las enfermedades inflamatorias crónicas y síndromes linfoproliferativos: modelos 3D para investigar inmunoterapias dirigidas.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2017-88275-R
Duration: 01/01/2018-30/06/2021

Pérez-Galán P. **IMLINFO: Red transfonteriza de immunoterapias personalizadas para linfomas no Hodgkin.**
Sponsored by: European Commission. CE_Interreg-16_POCTEFA. EF 281/16
Duration: 01/01/2018-31/12/2021

5.15 Lipid trafficking and disease

LOCATION
CELLEX building, floor 1A
UB School of Medicine

KEYWORDS
1. **Lipid droplets**
2. **Mitochondria**
3. **Metabolism**
4. **Immunity**

RELATED DISEASES
1. **Obesity**
2. **Diabetes**
3. **Metabolic syndrome**
4. **Immunity**

Original publications

TOTAL	4
I.F.	**75,14**
Mean I.F.	**18,79**
Q1	**100%**
D1	**75%**
MA	**25%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Albert Pol (ICREA-IDIBAPS)
T. 93 227 54 00 (Ext.: 3337)
apols@ub.edu

ASSISTANT RESEARCHERS
Marta Bosch (IDIBAPS)

POST-DOCTORAL RESEARCHERS
Olivia Tort (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Frederic Morales (IDIBAPS)

TECHNICIANS
Alba Fajardo (IDIBAPS)

PROBLEM

The human body has 200 different types of cells that are exquisitely coordinated. The failure of one or more components of this orchestra gives rise to disease.

One of the most common causes of disease is lipotoxicity. Lipids such as cholesterol or fatty acids are basic elements in building cells and keeping them active, but when they are present in excess, they damage them. Lipotoxicity gives rise to, or aggravates, obesity, diabetes, atherosclerosis, cancer and neurodegeneration. Statistics show that 100% of Europeans will develop at least one of these diseases during their lifetime.

APPROACH

Lipotoxicity can affect any type of cell and the first step to prevent it is to adopt a healthy lifestyle. This does not mean eliminating lipids from one's diet, as they are essential for life and account for 10% of a cell's weight and 50% of the cell membranes.

The group strives to understand the molecular mechanisms of lipotoxicity and find out why some lipids are toxic and others, beneficial, studying the way in which cells store, use and eliminate fat.

This knowledge leads to the establishment of correct therapeutic targets and effective medicines to treat the different aspects of lipotoxicity.

IMPACT

Since 2001 the group has studied the cell biology and physiology of lipid bodies (lipid droplets, LDs). LDs are intracellular organelles specifically designed during the evolution of diverse forms of life to prevent lipotoxicity.

The group has studied them from the time they are formed to the time they are used and is also evaluating the role they play in different situations such as obesity, liver regeneration and immune response.

RESEARCH LINES

- Caveolins in the endoplasmic reticulum: homeostatic cholesterol sensors?

- Exploring new functions for lipid droplets: from immunity to cancer.

- The role of hepatic endosomes in the regulation of systemic cholesterol: the why, the where and the how of arteriosclerosis.

- Understanding the biogenesis and consumption of lipid droplets: decoding the metabolic syndrome?

PUBLICATIONS

Originals / I.F.: 75.142

1. Bosch M, Sánchez-Álvarez M, Fajardo A, Kapetanovic R, Steiner B, Dutra F, Moreira L, López JA, Campo R, Marí M, Morales-Paytuví F, Tort O, Gubern A, Templin RM, Curson JEB, Martel N, Català C, Lozano F, Tebar F, Enrich C, Vázquez J, Del Pozo MA, Sweet MJ, Bozza PT, Gross SP, Parton RG, Pol A. **Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense.** *Science*. 370(6514):eaay8085. I.F.: 41.846

2. Alvarez-Guaita A, Blanco-Muñoz P, Meneses-Salas E, Wahba M, Pollock AH, Jose J, Casado M, Bosch M, Artuch R, Gaus K, Lu A, Pol A, Tebar F, Moss SE, Grewal T, Enrich C, Rentero C. **Annexin A6 is critical to maintain glucose homeostasis and survival during liver regeneration.** *Hepatology*. 72(6):2149-2164. I.F.: 14.679

3. Doolin T, Amir HM, Duong L, Rosenzweig R, Urban LA, Bosch M, Pol A, Gross SP, Siryaporn A. **Mammalian histones facilitate antimicrobial synergy by disrupting the bacterial proton gradient and chromosome organization.** *Nature Communications*. 11(1):3888. I.F.: 12.121

4. Meneses-Salas E; García-Melero A; Kanerva K; Blanco-Muñoz P; Morales-Paytuvi F; Bonjoch J; Casas J; Egert A; Beevi S; Jose J; Llorente-Cortés V; Rye K; Heeren J; Lu A; Pol A; Tebar F; Ikonen E; Grewal T; Enrich C; Rentero C. **Annexin A6 modulates TBC1D15/Rab7/StARD3 axis to control endosomal cholesterol export in NPC1 cells.** *Cellular and Molecular Life Sciences*. 77(14):2839-2857. I.F.: 6.496

Review / I.F.: 11.264

1. Bosch M, Parton RG, Pol A. **Lipid droplets, bioenergetic fluxes, and metabolic flexibility.** *Seminars In Cell & Developmental Biology*. 108:33-46. I.F.: 6.691

2. Pol A; Morales-Paytuví F; Bosch M; Parton RG. **Non-caveolar caveolins - duties outside the caves.** *Journal of Cell Science*. 133(9). I.F.: 4.573

Editorial / I.F.: 4.483

1. Parton RG, Bosch M, Steiner B, Pol A. **Novel contact sites between lipid droplets, early endosomes, and the endoplasmic reticulum.** *Journal of Lipid Research*. 61(11):1364. I.F.: 4.483

GRANTS FOR RESEARCH IN PROGRESS

Pol A. **Lipid Droplet Overloading Promotes Pathogenesis and Progression of Type 2 Diabetes: Identifying New Therapeutic Targets and Applying Upgraded Therapies.**
Sponsored by: Fundació La Marató de TV3. Diabet_16
Duration: 24/02/2017-23/10/2020

Pol A. **Cuerpos Lipídicos y Mitocondrias: centros inmunes que controlan la defensa del huésped y el inmunometabolismo.**
Sponsored by: Ministerio de Ciencia e Innovación y Universidades. MCIU_R-TI2018-098593-B-I00
Duration: 01/01/2019-31/12/2021

Pol A. **Discovering the Partners of PCSK9 in Hepatic Endosomes: The Where, How, and Why of PCSK9 in Atherosclerosis.**
Sponsored by: AMGEN (INC). INT_AMGEN_PCSK9_18
Duration: 01/09/2018-31/08/2021

5.16 Diagnosis and therapy in oncology

LOCATION
HCB building

KEYWORDS
1. **Oncology molecular studies**
2. **Radiotherapy**
3. **Breast cancer diagnosis**
4. **Sentinel lymph node**
5. **Positron emission tomography**

RELATED DISEASES
1. **Breast cancer**
2. **Malignant melanoma**
3. **Lymphoma**
4. **Head and neck tumours**
5. **Gynecological carcinoma**

GROUP INVOLVED IN
AGAUR_SGR17: 00682, 01150
CIBER-BNN

Original publications

TOTAL	40
I.F.	**174,31**
Mean I.F.	**4,36**
Q1	**50%**
D1	**23%**
MA	**28%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Francesca Pons (HCB)
T. 93 227 5773
fpons@clinic.cat

RESEARCHERS
Albert Biete (HCB-UB)
Carlos Conill (HCB)
David Fuster (HCB-UB)
Fernando Gómez Muñoz (HCB)
Marià Monzó (UB)
María Africa Muxí (HCB)
Aida Niñerola (HCB-UB)
Laura Oleaga (HCB-UB)
Pilar Paredes (HCB-UB)
Andrés Perissinotti (HCB)
Xavier Setoain (HCB-UB)
Sergi Vidal Sicart (HCB)

ASSISTANT RESEARCHERS
Francesc Casas (HCB)
Lluís Donoso (HCB-UB)
Àngels Rovirosa (HCB-UB)

POST-DOCTORAL RESEARCHERS
Xavier Bargalló (HCB-UB)
Maria Mayoral (HCB)

PRE-DOCTORAL RESEARCHERS
Mario Pagés (HCB-UB)
Marcelo Sánchez González (HCB-UB)
Núria Sánchez Izquierdo (HCB)
Izaskun Valduvieco (HCB)

TECHNICIANS
Francisco Campos (HCB)
Sebastián Capurro (HCB)
Teresa Pujol (HCB)
Sonia Rodríguez Gómez (HCB-UB)
Inmaculada Romero (HCB)

PROBLEM

Cancer is the second leading cause of death in Europe and the first among people aged under 65. Its incidence increases as the population ages and it is calculated that by 2030, one new case of cancer will develop in Spain every 1.8 minutes, with one death every 3.8 minutes.

Increasing and optimising efforts to prevent, diagnose and treat cancer is of the utmost importance. The group's opinion is that the best way to do this is to promote translational research and incorporate clinical practice as quickly as possible into the ground-breaking advances made by laboratories.

APPROACH

The arsenal of diagnostic and therapeutic tools available for cancer patients includes molecular studies, diverse diagnostic imaging techniques and radiation therapy.

The research conducted by the group is focused on these areas, with the aim of developing techniques to improve diagnosis, prognostic assessment and evaluation of the response to treatment in these diseases.

In addition, work is being carried out on new cancer therapies based on the use of encapsulated and non-encapsulated ionising radiation.

IMPACT

The group's intention is for molecular studies to provide information to enable doctors to offer patients more specific treatments.

Furthermore, in relation to diagnostic imaging techniques, magnetic resonance imaging (MRI) makes it possible to better establish the state of certain tumours and improve the prediction of the pathological response; positron emission tomography/computed tomography (PET/CT) has proven to be extremely useful in evaluating the response to treatment in diverse neoplasms; sentinel lymph node detection prevents a large number of unnecessary lymph node extractions, and radiation therapy studies comparing conventional radiation to new types of radiation show promising results.

RESEARCH LINES

- Breast magnetic resonance imaging (MRI).

- Effects of synchrotron radiation upon the neoplastic cell.

- Functional magnetic resonance imaging (fMRI) techniques.
- Molecular studies in embryonic and tumor cells: applications to pharmacogenomics.

- Positron emission tomography/computed tomography (PET/CT).

- Scintigraphic detection of the sentinel node and hybrid tracers in radioguided surgery.

- Study of bacterial radiosensitivity.

PUBLICATIONS

Originals / I.F.: 174.305

1. Sánchez-Benavides G, Salvadó G, Arenaza-Urquijo EM, Grau-Rivera O, Suárez-Calvet M, Milà-Alomà M, González-de-Echávarri JM, Minguillon C, Crous-Bou M, Niñerola-Baizán A, Perissinotti A, Gispert JD, Molinuevo JL, ALFA Study. **Quantitative informant- and self-reports of subjective cognitive decline predict amyloid beta PET outcomes in cognitively unimpaired individuals independently of age and APOEε4.** *Alzheimers & Dementia.* 12(1):e12127. I.F.: 17.127

2. Iranzo A, Stefani A, Niñerola-Baizan A, Stokner H, Serradell M, Vilas D, Holzknecht E, Gaig C, Pavia J, Lomeña F, Reyes D, Seppi K, Santamaria J, Högl B, Tolosa E, Poewe W, Sleep Innsbruck Barcelona (SINBAR) Group. **Left-hemispheric predominance of nigrostriatal deficit in isolated REM sleep behavior disorder.** *Neurology*. 94(15):e1605-e1613. I.F.: 8.770

3. Collarino, Angela; Fuoco, Valentina; Garganese, Giorgia; Arias-Bouda, Lenka M Pereira; Perotti, Germano; Manca, Gianpiero; Vidal-Sicart, Sergi; Giammarile, Francesco; de Geus-Oei, Lioe-Fee; Scambia, Giovanni; Giordano, Alessandro; Valdes-Olmos, Renato A; Maccauro, Marco. **Lymphoscintigraphy and sentinel lymph node biopsy in vulvar carcinoma: update from a European expert panel.** *European Journal of Nuclear Medicine and Molecular Imaging.* 47(5):1261-1274. I.F.: 7.081

4. Sánchez-Izquierdo N; Perlaza P; Pagès M; Buxó E; Rios J; Rubello D; Colletti P; Mayoral M; Casanueva S; Fernández-Esparrach G; Ginés A; Fuster D. **Assessment of Response to Neoadjuvant Chemoradiotherapy by 18F-FDG PET/CT in Patients With Locally Advanced Esophagogastric Junction Adenocarcinoma.** *Clinical Nuclear Medicine.* 45(1):38-43. I.F.: 6.622

5. Sanchez-Izquierdo, Nuria; Pages, Mario; Mayoral, Maria; Rubello, Domenico; Colletti, Patrick M; Campos, Francisco; Romero, Inmaculada; Casanueva, Sebastian; Fritsch, Andrea; Fuster, David. **PET/CT Integrated With CT Colonography in Preoperative Obstructive Colorectal Cancer by Incomplete Optical Colonoscopy A Prospective Study.** *Clinical Nuclear Medicine.* 45(12):943-947. I.F.: 6.622

6. Gil-López F, Boget T, Manzanares I, Donaire A, Conde-Blanco E, Baillés E, Pintor L, Setoaín X, Bargalló N, Navarro J, Casanova J, Valls J, Roldán P, Rumià J, Casanovas G, Domenech G, Torres F, Carreño M. **External trigeminal nerve stimulation for drug resistant epilepsy: a randomized controlled trial.** *Brain Stimulation.* 13(5):1245-1253. I.F.: 6.565

7. Marin E; Teixido C; Carmona-Rocha E; Reyes R; Arcocha A; Viñolas N; Rodríguez-Mues M; Cabrera C; Sánchez M; Vollmer I; Castillo S; Muñoz S; Sullivan IG; Rodriguez A; Garcia M; Alos S; Jares P; Martinez A; Prat A; Molina-Vila MÁ; Reguart N. **Usefulness of two independent DNA and rna tissue-based multiplex assays for the routine care of advanced NSCLC patients.** *Cancers.* 12(5):1124. I.F.: 6.126

8. Castellano JJ; Marrades RM; Molins L; Viñolas N; Moises J; Canals J; Han B; Li Y; Martinez D; Monzó M; Navarro A. **Extracellular vesicle lincRNA-p21 expression in tumor-draining pulmonary vein defines prognosis in NSCLC and modulates endothelial cell behavior.** *Cancers.* 12(3):734. I.F.: 6.126

9. Zhang Y; Fornes B; Gómez G; Bentoldrà I; Carmona C; Herreros A; Sabater S; Nicolás I; Li Y; Sánchez J; Biete A; Torné A; Ascaso C; Rovirosa Á. **Eqd2 analyses of vaginal complications in exclusive brachytherapy for postoperative endometrial carcinoma.** *Cancers.* 12(10):1-12. I.F.: 6.126

10. Nicolás I; Saco A; Barnadas E; Marimon L; Rakislova N; Fusté P; Rovirosa A; Gaba L; Buñesch L; Gil-Ibañez B; Pahisa J; Díaz-Feijoo B; Torne A; Ordi J; del Pino M. **Prognostic implications of genotyping and p16 immunostaining in HPV-positive tumors of the uterine cervix.** *Modern Pathology.* 33(1):128-137. I.F.: 7.842

11. Lopez-Gonzalez F,Silva-Rodriguez J, Paredes-Pacheco J ,Ninerola-Baizan A, Efthimiou N, Martin-Martin C. **Intensity normalization methods in brain FDG-PET quantification.** *Neuroimage.* 222:117229. I.F.: 5.902

12. Florez H, Hernández-Rodríguez J, Muxi A, Carrasco JL, Prieto-González S, Cid MC, Espinosa G, Gómez-Puerta JA, Monegal A, Guañabens N, Peris P. **Trabecular bone score improves fracture risk assessment in glucocorticoid-induced osteoporosis.** *Rheumatology.* 59(7):1574-1580. I.F.: 5.606

13. García-de-la-Mària C, Gasch O, Castañeda X, García-González J, Soy D, Cañas MA, Ambrosioni J, Almela M, Pericàs JM, Téllez A, Falces C, Hernández-Meneses M, Sandoval E, Quintana E, Vidal B, Tolosana JM, Fuster D, Llopis J, Moreno A, Marco F, Miró JM, Hospital Clínic Endocarditis Study Group. **Cloxacillin or fosfomycin plus daptomycin combinations are more active than cloxacillin monotherapy or combined with gentamicin against MSSA in a rabbit model of experimental endocarditis.** *Journal of Antimicrobial Chemotherapy.* 75(12):3586-3592. I.F.: 5.439

14. Moisés J, Navarro A, Castellano JJ, Viñolas N, Molins L, Canals J, Han B, Martín J, Ramirez J, Frigola G, Marrades RM, Monzó M. **Long Non-Coding RNA NANCI/NKX2-1 Duplex Impacts Prognosis in Stage I Non-Small-Cell Lung Cancer.** *Archivos de Bronconeumologia.* 56(10):630-636. I.F.: 4.957

15. Pericàs JM; Cervera C; Garcia-de-la-Mària C; Sharma-Kuinkel BK; Gonzales R; Moreno A; Almela M; Falces C; Quintana E; Fuster D; Marco F; Bayer AS; Fowler VG; Miró JM. **Relationship between Vancomycin MIC and Virulence Gene Expression in Clonal Complexes of Methicillin-Susceptible Staphylococcus aureus Strains Isolated from Left-Sided Endocarditis.** *Antimicrobial Agents and Chemotherapy.* 64(3):e01579-19. I.F.: 4.904

16. Trilla-Fuertes L; Ghanem I; Gámez-Pozo A; Maurel J; G-Pastrián L; Mendiola M; Peña C; López-Vacas R; Prado-Vázquez G; López-Camacho E; Zapater-Moros A; Heredia V; Cuatrecasas M; García-Alfonso P;

Capdevila J; Conill C; García-Carbonero R; Ramos-Ruiz R; Fortes C; Llorens C; Nanni P; Fresno Vara J; Feliu J. **Genetic profile and functional proteomics of anal squamous cell carcinoma: Proposal for a molecular classification.** *Molecular & Cellular Proteomics.* 19(4):690-700. I.F.: 4.870

17. Gutiérrez-Carcedo P; Navalón S; Simó R; Setoain X; Aparicio-Gómez C; Abasolo I; Victor VM; García H; Herance JR. **Alteration of the mitochondrial effects of ceria nanoparticles by gold: An approach for the mitochondrial modulation of cells based on nanomedicine.** *Nanomaterials.* 10(4):744. I.F.: 4.324

18. Sepúlveda-Sánchez JM; Gil-Gil M; Alonso-García M; Vaz Salgado MÁ; Vicente E; Mesía Barroso C; Rodríguez Sánchez Á; Durán G; De Las Peñas R; Muñoz-Langa J; Velasco G; Hernández-Laín A; Hilario A; Navarro Martín M; Benavides M; Oleaga L; Cantero Montenegro D; Ruano Y; Sánchez-Gómez P; Martín-Soberón MC; Morales-Llombart R; Pachón V; Pineda E. **Phase II Trial of Palbociclib in Recurrent Retinoblastoma-Positive Anaplastic Oligodendroglioma: A Study from the Spanish Group for Research in Neuro-Oncology (GEINO).** *Targeted Oncology.* 15(5):613-622. I.F.: 4.036

19. Marrero-González P; Iranzo A; Bedoya D; Serradell M; Niñerola-Baizán A; Perissinotti A; Gaig C; Vilaseca I; Alobid I; Santamaría J; Mullol J. **Prodromal Parkinson disease in patients with idiopathic hyposmia.** *Journal of Neurology.* 267(12):3673-3682. I.F.: 3.956

20. Álvarez-Torres M; Juan-Albarracín J; Fuster-Garcia E; Bellvís-Bataller F; Lorente D; Reynés G; Font de Mora J; Aparici-Robles F; Botella C; Muñoz-Langa J; Faubel R; Asensio-Cuesta S; García-Ferrando G; Chelebian E; Auger C; Pineda J; Rovira A; Oleaga L; Mollà-Olmos E; Revert A; Tshibanda L; Crisi G; Emblem K; Martin D; Due-Tønnessen P; Meling T; Filice S; Sáez C; García-Gómez J. **Robust association between vascular habitats and patient prognosis in glioblastoma: An international multicenter study.** *Journal of Magnetic Resonance* Imaging. 51(5):1478-1486. I.F.: 3.954

21. Louro J, Román M, Posso M, Comerma L, Vidal C, Saladié F, Alcantara R, Sanchez M, Quintana MJ, Del Riego J, Ferrer J, Peñalva L, Bargalló X, Prieto M, Sala M, Castells. **Differences in breast cancer risk after benign breast disease by type of screening diagnosis.** Breast. 54:343-348. I.F.: 3.754

22. Philippe L Pereira, Dirk Arnold, Thierry de Baère, Fernando Gomez, Thomas Helmberger, Roberto Iezzi, Geert Maleux, Hans Prenen, Bruno Sangro, Anders Nordlund, Bleranda Zeka, Robert Bauer, Nathalie Kaufmann, Olivier Pellerin, Julien Taieb. **A multicentre, international, observational study on transarterial chemoembolisation in colorectal cancer liver metastases: Design and rationale of CIREL.** *Digestive and Liver Disease.* 52(8):857-861. I.F.: 3.57

23. Trilla-Fuertes L; Ghanem I; Maurel J; G-Pastrián L; Mendiola M; Peña C; López-Vacas R; Prado-Vázquez G; López-Camacho E; Zapater-Moros A; Heredia V; Cuatrecasas M; García-Alfonso P; Capdevila J; Conill C; García-Carbonero R; Heath KE; Ramos-Ruiz R; Llorens C; Campos-Barros Á; Gámez-Pozo A; Feliu J; Vara JÁF. **Comprehensive Characterization of the Mutational Landscape in Localized Anal Squamous Cell Carcinoma.** *Translational Oncology.* 13(7):100778. I.F.: 3.558

24. Feliu J, Garcia-Carbonero R, Capdevila J, Guasch I, Alonso-Orduna V, Lopez C, Garcia-Alfonso P, Castanon C, Sevilla I, Cerezo L, Conill C, Quintana-Angel B, Sanchez ME, Ghanem I, Martin-Richard M, Lopez-Gomez M, Leon A, Caro M, Fernandez T, Maurel J. **VITAL phase 2 study: Upfront 5-fluorouracil, mitomycin-C, panitumumab and radiotherapy treatment in nonmetastatic squamous cell carcinomas of the anal canal (GEMCAD 09-02).** *Cancer Medicine.* 9(3):1008-1016. I.F.: 3.491

25. Li Y, Castellano JJ, Moreno I, Martínez-Rodenas F, Hernandez R, Canals J, Diaz T, Han B, Muñoz C, Biete A, Monzo M, Navarro A. **LincRNA-p21 Levels Relates to Survival and Post-Operative Radiotherapy Benefit in Rectal Cancer Patients.** *Life.* 10(9):172. I.F.: 3.817

26. Casas Duran F., Valduvieco I., Oses G., Cortés K.S., Barreto T.D., Muñoz-Guglielmetti D., Ferrer F. **Spanish validation of Charlson index applied to prostate cancer.** *Clinical & Translational Oncology.* 22(7):1187-1192. I.F.: 2.737

27. López-Honrubia V; Hidalgo-Olivares VM; Dobón-Roux M; Martí-Laosa MM; Castro-Larefors S; Fernandez-Lopez J; Andres I; Roche O; Rovirosa A; Arenas M; Martinez-Terol F; López Fernández T; Sabater S. **Radiotherapy is safe in patients with implantable cardiac devices. Analysis of a systematic interrogation follow-up.** *Clinical & Translational Oncology.* 22(12):2286-2292. I.F.: 2.737

28. K Holub; A Vargas; Alberto Biete Solà. **Radiation-induced lymphopenia: the main aspects to consider in immunotherapy trials for endometrial and cervical cancer patients.** *Clinical & Translational Oncology.* 22(11):2040-2048. I.F.: 2.737

29. Zhang Y; Ascaso C; Herreros A; Sánchez J; del Pino M; Torné A; Li Y; Sabater S; Arenas M; Biete A; Rovirosa. **Is one brachytherapy fraction of 7 Gy similar to more fractions after external beam irradiation in postoperative endometrial carcinoma**? *Clinical & Translational Oncology.* 22(8):1295-1302. I.F.: 2.737

30. Diez AIG, Fuster D, Morata L, Torres F, Garcia R, Poggio D, Sotes S, Del Amo M, Isern-Kebschull J, Pomes J, Soriano A, Brugnara L, Tomas X. **Comparison of the diagnostic accuracy of diffusion-weighted and dynamic contrast-enhanced MRI with 18F-FDG PET/CT to differentiate osteomyelitis from Charcot neuro-osteoarthropathy in diabetic foot.** *European Journal of Radiology.* 132(109299):109299. I.F.: 2.687

31. Puigpinos-Riera, R; Serral, G; Sala, M; Bargallo, X; Quintana, M J; Espinosa, M; Manzanera, R; Domenech, M; Macia, F; Grau, J; Vidal, E. **Cancer-related fatigue and its determinants in a cohort of women with breast cancer: the DAMA Cohort**. *Supportive Care in Cancer.* 28(11):5213-5221. I.F.: 2.635

32. Li Y; Monzo M; Moreno I; Martinez-Rodenas F; Hernandez R; Castellano JJ; Canals J; Han B; Muñoz C; Navarro A. **KRAS mutations by digital PCR in circulating tumor cells isolated from the mesenteric vein are associated with residual disease and overall survival in resected colorectal cancer patients. International.** *Journal of Colorectal Disease.* 35(5):805-813. I.F.: 2.108

33. Boada, Marc; Sanchez-Lorente, David; Libreros, Alejandra; Lucena, Carmen M.; Marrades, Ramon; Sanchez, Marcelo; Paredes, Pilar; Serrano, Mario; Guirao, Angela; Guzman, Rudith; Vinolas, Nuria; Casas, Francesc; Agusti, Carles; Molins, Laureano. **Is invasive mediastinal staging necessary in intermediate risk patients with negative PET/CT?** *Journal of Thoracic Disease.* 12(8):3976-3986. I.F.: 2.046

34. B M Aarts, W Prevoo, M A J Meier, A Bex, R G H Beets-Tan, E G Klompenhouwer, F M Gómez. **Percutaneous Microwave Ablation of Histologically Proven T1 Renal Cell Carcinoma.** *Cardiovascular and Interventional Radiology.* 43(7):1025-1033. I.F.: 2.034

35. Zhang Y; Rovirosa A; Ascaso C; Herreros A; Torne A; Li Y; Biete A; Sánchez J. **Economic impact of decreasing the fraction number in vaginal cuff brachytherapy: A direct cost analysis.** *Brachytherapy*. 19(1):60-65. I.F.: 1.853

36. Macedo M, Bassaganyas C, Ganau S, Sanfeliu E, Ubeda B, Bargallo X. **Ultrasound Findings of Breast Adenomas.** *Journal of Ultrasound in Medicine*. 39(11):2173-2180. I.F.: 1.759

37. Delgado-Oliver E, Vidal-Sicart S, Martínez D, Squarcia M, Mora M, Hanzu FA, Halperin I, Fuster D, Fondevila C, Vidal-Perez Ó. **Applicability of sentinel lymph node biopsy in papillary thyroid cancer**. *Quarterly Journal of Nuclear Medicine and Molecular Imaging*. 64(4):400-405. I.F.: 1.795

38. Angeles MA, Migliorelli F, León Ramírez LF, Ros C, Perissinotti A, Tapias A, Casanueva-Eliceiry S, Pahisa J, Torné A, Vidal-Sicart S, Del Pino M, Paredes P. **Predictive factors of preoperative sentinel lymph node detection in intermediate and high-risk endometrial cancer.** *Quarterly Journal of Nuclear Medicine and Molecular Imaging*. I.F.: 2.346

39. Sánchez N; Valduvieco I; Ribal MJ; Campos F; Casas F; Nicolau C; Salvador R; Mellado B; Jorcano S; Fuster D; Paredes P. **Diagnostic utility and therapeutic impact of PET/CT [18F]F-Fluoromethylcholine -Choline in the biochemical recurrence of prostate cancer.** *Revista Española de Medicina Nuclear e Imagen Molecular*. 39(5):284-291. I.F.: 1.090

40. Ninerola-Baizan, A; Aguiar, P; Cabrera-Martin, M N; Vigil, C; Gomez-Grande, A; Lorenzo, C; Rubi, S; Sopena, P; Camacho, V; Grp Neuroimagen SEMNIM. **Relevance of quantification in brain PET studies with F-18-FDG.** *Revista Española de Medicina Nuclear e Imagen Molecular*. 39(3):184-192. I.F.: 1.090

Review / I.F.: 24.145

1. Van Leeuwen FWB; Schottelius M; Brouwer OR; Vidal-Sicart S; Achilefu S; Klode J; Wester HJ; Buckle T. **Trending: Radioactive and Fluorescent Bimodal/Hybrid Tracers as Multiplexing Solutions for Surgical Guidance.** *Journal of Nuclear Medicine*. 61(1):13-19. I.F.: 7.887

2. Valdés Olmos RA; Rietbergen DDD; Rubello D; Pereira Arias-Bouda LM; Collarino A; Colletti PM; Vidal-Sicart S; van Leeuwen FWB. **Sentinel Node Imaging and Radioguided Surgery in the Era of SPECT/CT and PET/CT: Toward New Interventional Nuclear Medicine Strategies.** *Clinical Nuclear Medicine*. 45(10):771-777. I.F.: 6.622

3. Garcia-Figueiras, Roberto; Baleato-Gonzalez, Sandra; Luna, Antonio; Munoz-Iglesias, Jose; Oleaga, Laura; Vallejo Casas, Juan Antonio; Martin-Noguerol, Teodoro; Broncano, Jordi; Carmen Areses, Maria; Vilanova, Joan C. **Assessing Immunotherapy with Functional and Molecular Imaging and Radiomics.** *Radiographics*. 40(7):1987-2010. I.F.: 4.967

4. Monique Maas, Regina Beets-Tan, Jean-Yves Gaubert, Fernando Gomez Munoz, Paul Habert, Lisa G Klompenhouwer, Paulo Vilares Morgado, Niklaus Schaefer, Francois H Cornelis, Stephen B Solomon, Denise van der Reijd, Jose Ignacio Bilbao. **Follow-up after radiological intervention in oncology: ECIO-ESOI evidence and consensus-based recommendations for clinical practice.** *Insights Into Imaging*. 11(1):83. I.F.: 5.231

5. Paredes P; Suils J; Danús M; Delgado Bolton RC; Sánchez-Lorente D; Rodríguez Martínez D; Goñi E. **Diagnosis and radio-guided surgery of lung nodules.** *Revista Española de Medicina Nuclear e Imagen Molecular*. 39(5):327-336. I.F.: 1.090

Letters / I.F.: 4.967

1. Sarbu N; Shih RY; Oleaga L; Smirniotopoulos JG. **RadioGraphics Update: White Matter Diseases with Radiologic-Pathologic Correlation**. *Radiographics*. 40(3):E4-E7. I.F.: 4.967

Editorial / I.F.: 6.622

1. Valhondo-Rama R; Sánchez Izquierdo N; Tapias Mesa A; Perissinotti A; Vidal-Sicart S. **Comparison of 99mTc-Tilmanocept and Hybrid Indocyanine Green-99mTc-Albumin Nanocolloid Drainage in a Patient with Melanoma in the Scalp.** *Clinical Nuclear Medicine*. 45(12):977-979. I.F.: 6.622

Case Reports / I.F.: 22.041

1. Gil F, Padilla N, Soria-Pastor S, Setoain X, Boget T, Rumiá J, Roldán P, Reyes D, Bargalló N, Conde E, Pintor L, Vernet O, Manzanares I, Ådén U, Carreño M, Donaire A. **Beyond the Epileptic Focus: Functional Epileptic Networks in Focal Epilepsy.** *Cerebral Cortex*. 30(4):2338-2357. I.F.: 5.357

2. Alfredo Páez-Carpio, Ivan Vollmer, Pilar Paredes. **Evaluation of the Response to the Radiofrequency Treatment of a Pulmonary Nodule by Contrast-enhanced Ultrasound (CEUS).** *Archivos de Bronconeumología*. 56(8):531-532. I.F.: 4.957

3. Quintas L; Vidal-Sicart S; Salvador R; Castelo-Branco C; Saco A; Carmona F. **Use of Radioactive Seed Localization to Guide Removal of a Nonpalpable Endometriotic Lesion: A Case Report.** *Journal of Minimally Invasive Gynecology*. 27(2):551-554. I.F.: 3.107

4. Katherine Cajiao, Francisco Javier Setoain, Pilar Peris. **Multifocal Osteonecrosis: The Usefulness of Bone Scintigraphy.** *JCR-Journal of Clinical Rheumatology*. I.F.: 3.517

5. Rodriguez-García SC, Castellanos-Moreira R, Muxí A, Del Amo M, Peris P, Guañabens N. **Imaging Follow-up of SAPHO Syndrome Treated With Zoledronic Acid.** *JCR-Journal of Clinical Rheumatology*. 26(6):E155-E157. I.F.: 3.517

6. Kurilova I; Pompa V; Guerrero R; Tapias MA; Calatayud MD; Fondevila C; González JA; Duch J; Gomez FM. **90Y-Radioembolization After Failed Portal Vein Embolization for Colorectal Liver Metastases: A Case Report.** *Cardiovascular and Interventional Radiology*. 43(8):1232-1236. I.F.: 2.740

7. Sánchez-Izquierdo N; Calderoni L; Farolfi A; Paredes P; Fuster D; Castellucci P. **11C-Choline PET/CT detects multiple small peritoneal metastasis in a prostate cancer patient.** *Revista Española de Medicina Nuclear e Imagen Molecular*. 39(2):104-105. I.F.: 1.090

8. L F León, I Vollmer, D Sánchez-Lorente, N Sánchez-Izquierdo, S Vidal-Sicart, P Paredes. **Pleural biopsy by ROLL technique: The first case report.** *Revista Española de Medicina Nuclear e Imagen Molecular*. S2253-654X(20):30143-8. I.F.: 1.090

Consortium Publications / I.F.: 50.587

1. Pericàs JM, Hernandez-Meneses M, Sheahan TP, Quintana E, Ambrosioni J, Sandoval E, Falces C, Marcos MA, Tuset M, Vilella A, Moreno A, Miro JM, Hospital Clínic Cardiovascular Infections Study Group. **COVID-19: from epidemiology to treatment.** *European Heart Journal.* 41(22):2092-2112. I.F.: 22.673

2. Pericàs JM, Llopis J, Muñoz P, Gálvez-Acebal J, Kestler M, Valerio M, Hernández-Meneses M, Goenaga MÁ, Cobo-Belaustegui M, Montejo M, Ojeda-Burgos G, Sousa-Regueiro MD, de Alarcón A, Ramos-Martínez A, Miró JM, GAMES Investigators. **A Contemporary Picture of Enterococcal Endocarditis.** *Journal of the American College of Cardiology.* 75(5):482-494. I.F.: 20.589

3. Boada A, Tejera-Vaquerizo A, Ribero S, Puig S, Moreno-Ramírez D, Quaglino P, Osella-Abate S, Cassoni P, Malvehy J, Carrera C, Pigem R, Barreiro-Capurro A, Requena C, Traves V, Manrique-Silva E, Fernández-Orland A, Ferrandiz L, García-Senosiain O, Fernández-Figueras MT, Ferrándiz C, Nagore E, SENTIMEL study group. **Factors associated with sentinel lymph node status and prognostic role of completion lymph node dissection for thick melanoma.** *EJSO.* 46(2):263-271. I.F.: 3.959

4. Bowles H, Ambrosioni J, Mestres G, Hernández-Meneses M, Sánchez N, Llopis J, Yugueros X, Almela M, Moreno A, Riambau V, Fuster D, Miró JM, Hospital Clinic Endocarditis Study Group. **Diagnostic yield of 18F-FDG PET/CT in suspected diagnosis of vascular graft infection: A prospective cohort study.** *Journal of Nuclear Cardiology.* 27(1):294-302. I.F.: 3.366

GRANTS FOR RESEARCH IN PROGRESS

Paredes P, Vidal-Sicart S. **Ganglio centinela en el cáncer de endometrio mediante detección híbrida (99mTc-nanocoloide de albúmina-ICG). Mapa linfático de la punción cervical versus miometrial.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00728
Duration: 01/01/2019-31/12/2021

DOCTORAL THESES

Biete A. **Analysis of the K-RAS mutant alleles and LincRNA-p21 expression in tumors and liquid biopsy as prognostic factors in surgical colorectal cancer patients.**
PhD student: Yan Li

Rovirosa A. **Estudio comparative de tres esquemas de braquiterapia después de radioterapia externa en cancer de endometrio postoperatorio en cuanto a recidivas vaginales, toxicidad y costes.**
PhD student: Yaowen Zhang

5.17 Transcriptional regulation of gene expression

LOCATION
CELLEX building, floor 1B

KEYWORDS
1. **Stem cells**
2. **Cancer**
3. **Inflammation**
4. **Cellular plasticity and differentiation**
5. **Tissue regeneration**

RELATED DISEASES
1. **Cancer**
2. **Inflammation**
3. **Muscle dystrophies and muscle pathology**

GROUP INVOLVED IN
AGAUR_SGR17: 01174
CIBEREHD

GROUP LEADER
Antonio Postigo (ICREA-IDIBAPS)
Tel: 93 227 9170
idib412@clinic.cat

POST-DOCTORAL RESEARCHERS
Marlies Cortes (FCRB)
Núria Profitós (IDIBAPS)
Laura Siles (FCRB)

PRE-DOCTORAL RESEARCHERS
M. Carmen Martínez Campanario (IDIBAPS)
Sergio Mera (IDIBAPS)
Chiara Ninfali (IDIBAPS)

PROBLEM

Organisms are comprised of hundreds of different types of cells, each with a specific attribute and function. This diversity of cell traits and roles is determined by a particular 'gene expression signature'.

This gene expression signature defines each cell type but also evolves as cells change during differentiation, development, and disease. Gene expression is regulated at multiple levels, including by some proteins (known as “transcription factors”) that bind to the regulatory regions in the DNA to switch on/off gene expression.

Understanding how genes are regulated is critical for designing tools to maintain health and to prevent and cure diseases.

APPROACH

The ability of cells to change their identity (phenotype) and function along a spectrum is referred to as cellular plasticity.

Cellular plasticity serves as a mechanism through which cells and tissues adapt to environmental changes and occurs not only during embryonic development but also in adult tissues both under physiological conditions as well as in disease.

For instance, cellular plasticity allows cells to respond to stress or injury (e.g., tissue regeneration by adult stem cells). But cellular plasticity also allows cells to adopt a pathological phenotype and function in response to some cues (e.g., tumor initiation by cancerous stem cells).

The group studies gene regulation of cell plasticity during normal cell differentiation (the process through which cells, tissues and organs change structure and shape to carry out specific functions) and in disease, with ongoing projects in inflammation, cancer, stem cell differentiation, and muscle injury and regeneration.

Cellular plasticity is orchestrated by a number of transcription factors and epigenetic modifications. Our group focuses on the ZEB1 and ZEB2 cell plasticity factors that play key roles in all of these physiological and pathological processes.

Our research uses multiple technical approaches ranging from unique conditional transgenic mice, ex vivo cultures and manipulation of stem cells to high-throughput techniques (OMICs: RNAseq, single cell-RNAseq, etc) and differentiation of human embryonic stem cells.

IMPACT

By understanding the mechanisms that regulate gene expression and how gene expression is regulated under physiological conditions and altered in disease, our group aims to: a) define markers that trace the initiation and progression of diseases and b) inform the design of new and personalized therapies that restore normal gene expression and function.

RESEARCH LINES

- Cancer Stem Cells and Cell Plasticity in Cancer.

- Stem Cells, Cell Differentiation and Tissue Regeneration.

- Cell Plasticity in Immune Cells during Inflammation in Tissue Regeneration and Cancer.

GRANTS FOR RESEARCH IN PROGRESS

Postigo A. **Group of Regulation in Cell Differentiation and Cancer. Prognostic and predictive biomarkers and therapeutic targets in cancer.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01174
Duration: 01/01/2017-30/09/2021

Postigo A. **ZEBTME: Metabolismo e interacción tumor-microambiente: Papel de los factores ZEB en la reprogramación metabólica de las células tumorales y estromales y de su interacción mutua.**
Sponsored by: Ministerio de Economía y Competitividad. MINECO_SAF2017-84918-R
Duration: 01/01/2018-30/06/2021

Postigo A. **Validación del factor ZEB2 como biomarcador pronóstico predictivo y potencial objetivo terapéutico en la distrofia muscular de Duchenne.**
Sponsored by: Duchenne Parent Project España. DPP_18_01
Duration: 15/12/2018-15/02/2021

Postigo A. **Validation of ZEB factors as prognostic and predictive biomarkers, and therapeutic targets in colorectal carcinomas.**
Sponsored by: Fundación científica Asociación Española contra el Cáncer. AECC_Proyectos19
Duration: 01/11/2019-31/10/2022

Postigo A. **Metabolic cooperation and competition between colorectal carcinomas (CRC) and their tumor microenvironment: Validation of ZEB factors as prognostic and predictive biomarkers and metabolic therapeutic targets in CRC.**
Sponsored by: Fundació Privada Olga Torres (FOT). FUND_OLGATORRES_19_3
Duration: 01/01/2020-31/03/2022

Postigo A. **Identificación de perfiles de expresión génica regulados por la vía microRNA /ZEB 1-ZEB 2 y su papel en la capacidad invasiva y metastásica de carcinomas de mama y la respuesta al tratamiento.I Beca en Investigación en Cáncer de Mama.**
Sponsored by: Avon Cosmetics S.A. (12/259)
Duration: 01/09/2012-31/12/2022

Postigo A. **Psoriasis, a metabolic dysregulation of the innate immune system? Targeting ZEB1 in macrophages as a new therapeutic approach to psoriasis.**
Sponsored by: LEO Foundation.INT_LEO_19
Duration: 01/03/2020-31/08/2023

DOCTORAL THESES

Postigo A. **Role of ZEB factors in B cell activation and malignant progression.**
PhD student: Núria Profitós Pelejà

5.18 Translational genomics and targeted therapies in solid tumours

LOCATION
CEK building, floor 1A

KEYWORDS
1. **Solid tumors**
2. **Genomics**
3. **Biomarkers**
4. **Targeted therapies**
5. **Immunotherapy**

RELATED DISEASES
1. **Breast cancer**
2. **Gynecological cancer**
3. **Urological cancer**
4. **Lung cancer**
5. **Melanoma**
6. **Central nervous system**
7. **Colorectal cancer**
8. **Upper gastrointestinal cancer**
9. **Solid tumors**

GROUP INVOLVED IN
AGAUR_SGR17: 01554

Original publications

TOTAL	70
I.F.	778,38
Mean I.F.	11,12
Q1	76%
D1	44%
MA	24%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Aleix Prat (HCB)
T. 93 227 54 00 (Ext.: 2203)
alprat@clinic.cat

RESEARCHERS
Barbara Adamo (HCB)
Ana Arance (HCB)
Carles Gomà (HCB)
Juan José Grau (HCB)
Mercedes Marin Aguilera (IDIBAPS)
Joan Maurel (HCB)
Begoña Mellado (HCB)
Meritxell Mollà (HCB)
Montserrat Muñoz (HCB)
Noemí Reguart (HCB-IDIBAPS)
Cristina Teixidó (HCB)
Maria Jesús Vidal (HCB)
Nuria Viñolas (HCB)

ASSISTANT RESEARCHERS
Natalia Jiménez Blasco (FCRB)

POST-DOCTORAL RESEARCHERS
Fara Brasó (FCRB)
Carme Font (HCB)
Laura Mezquita (IDIBAPS)
Daniel Ortiz (FCRB)
Oscar Reig (FCRB)
Esther Sanfeliu (HCB)
Tamara Saurí (HCB)

PRE-DOCTORAL RESEARCHERS
Neus Basté (HCB)
Nuria Chic (IDIBAPS)
Benedetta Conte (IDIBAPS)
Javier García Corbacho (FCRB)
Elba Marín Pérez (FCRB)
Olga Martínez Sáez (FCRB)
Leire Pedrosa (FCRB)
Estela Pineda (HCB)
Francesco Schettini (IDIBAPS)
Iván Victoria (FCRB)
Margarita Viladot (HCB)

TECHNICIANS
Esther Barnadas (IDIBAPS)
Víctor Díez Guardia (IDIBAPS)
Patricia Galván (FCRB)
Debora Martínez Pérez (FCRB)

ADMINISTRATIVE STAFF
Eva Paradell (FCRB)

PROBLEM

Cancer is a very heterogeneous disease, both clinically and biologically. Over the last decade, the survival of cancer patients has improved thanks to the introduction of targeted therapies. Even so, there are still patients who do not respond to current treatments or who develop resistance.

Therefore, it is necessary to classify cancer in subgroups, identify predictive response biomarkers and new therapeutic targets to combat resistance to current treatments.

APPROACH

Our group uses genomic and molecular data to guide the design of clinical trials and the development of biomarkers (elements that allow for the evaluation of the response to a drug).

Based on preclinical cancer models, it studies molecular mechanisms of sensitivity and pharmacological resistance. All of this should help identify better treatments for patients with solid tumors.

IMPACT

The approach starts from the observations obtained from patients: our group transfers them to the laboratory to identify new biomarkers and therapies.

Promising preclinical results give rise to new clinical trials, in which we explore whether these are truly valid for patients. Thanks to these studies, we hope to obtain more personalized treatments for patients with cancer.

RESEARCH LINES

-Breast cancer
-Cancer immunotherapy
-Urologic cancer
-Upper gastrointestinal tumors
-Lung cancer
-Colorectal cancer
-Brain tumors
-Melanoma
-Early drug development (IntherUnit)

PUBLICATIONS

Originals / I.F.: 778.38

1. Wolf J, Seto T, Han JY, Reguart N, Garon EB, Groen HJM, Tan DSW, Hida T, de Jonge M, Orlov SV, Smit EF, Souquet PJ, Vansteenkiste J, Hochmair M, Felip E, Nishio M, Thomas M, Ohashi K, Toyozawa R, Overbeck TR, de Marinis F, Kim TM, Laack E, Robeva A, Le Mouhaer S, Waldron-Lynch M, Sankaran B, Balbin OA, Cui X, Giovannini M, Akimov M, Heist RS, GEOMETRY mono-1 Investigators. **Capmatinib in MET Exon 14-Mutated or MET-Amplified Non-Small-Cell Lung Cancer.** *New England Journal of Medicine.* 383(10):944-957. I.F.: 74.699

2. Dummer, Reihard; Lebbe, Celeste; Atkinson, Victoria; Mandala, Mario; Nathan, Paul D.; Arance, Ana; Richtig, Erika; Yamazaki, Naoya; Robert, Caroline; Schadendorf, Dirk; Tawbi, Hussein A.; Ascierto, Paolo A.; Ribas, Antoni; Flaherty, Keith T.; Pakhle, Neha; Campbell, Catarina D.; Gusenleitner, Daniel; Masood, Aisha; Brase, Jan C.; Gasal, Eduard; Long, Georgina, V. **Combined PD-1, BRAF and MEK inhibition in advancedBRAF-mutant melanoma: safety run-in and biomarker cohorts of COMBI-i.** *Nature Medicine.* 26(10):1557-1563. I.F.: 36.130

3. Prat A, Saura C, Pascual T, Hernando C, Muñoz M, Paré L, González Farré B, Fernández PL, Galván P, Chic N, González Farré X, Oliveira M, Gil-Gil M, Arumi M, Ferrer N, Montaño A, Izarzugaza Y, Llombart-Cussac A, Bratos R, González Santiago S, Martínez E, Hoyos S, Rojas B, Virizuela JA, Ortega V, López R, Céliz P, Ciruelos E, Villagrasa P, Gavilá J. **Ribociclib plus letrozole versus chemotherapy for postmenopausal women with hormone receptor-positive, HER2-negative, luminal B breast cancer (CORALLEEN): an open-label, multicentre, randomised, phase 2 trial.** *Lancet Oncology.* 21(1):33-43. I.F.: 33.752

4. Prat A; Guarneri V; Paré L; Griguolo G; Pascual T; Dieci MV; Chic N; González-Farré B; Frassoldati A; Sanfeliu E; Cejalvo JM; Muñoz M; Bisagni G; Brasó-Maristany F; Urso L; Vidal M; Brandes AA; Adamo B; Musolino A; Miglietta F; Conte B; Oliveira M; Saura C; Pernas S; Alarcón J; Llombart-Cussac A; Cortés J; Manso L; López R; Ciruelos E; Schettini F; Villagrasa P; Carey LA; Perou CM; Piacentini F; D'Amico R; Tagliafico E; Parker JS; Conte P. **A multivariable prognostic score to guide systemic therapy in early-stage HER2-positive breast cancer: a retrospective study with an external evaluation.** *Lancet Oncology.* 21(11):1455-1464. I.F.: 33.752

5. Ascierto PA, Del Vecchio M, Mandalá M, Gogas H, Arance AM, Dalle S, Cowey CL, Schenker M, Grob JJ, Chiarion-Sileni V, Márquez-Rodas I, Butler MO, Maio M, Middleton MR, de la Cruz-Merino L, Arenberger P, Atkinson V, Hill A, Fecher LA, Millward M, Khushalani NI, Queirolo P, Lobo M, de Pril V, Loffredo J, Larkin J, Weber J. **Adjuvant nivolumab versus ipilimumab in resected stage IIIB-C and stage IV melanoma (CheckMate 238): 4-year results from a multicentre, double-blind, randomised, controlled, phase 3 trial.** *Lancet Oncology.* 21(11):1465-1477. I.F.: 33.752

6. Provencio M; Nadal E; Insa A; García-Campelo MR; Casal-Rubio J; Dómine M; Majem M; Rodríguez-Abreu D; Martínez-Martí A; De Castro Carpeño J; Cobo M; López Vivanco G; Del Barco E; Bernabé Caro R; Viñolas N; Barneto Aranda I; Viteri S; Pereira E; Royuela A; Casarrubios M; Salas Antón C; Parra ER; Wistuba I; Calvo V; Laza-Briviesca R; Romero A; Massuti B; Cruz-Bermúdez A. **Neoadjuvant chemotherapy and nivolumab in resectable non-small-cell lung cancer (NADIM): an open-label, multicentre, single-arm, phase 2 trial.** *Lancet Oncology.* 21(11):1413-1422. I.F.: 33.752

7. Robert C, Long GV, Brady B, Dutriaux C, Di Giacomo AM, Mortier L, Rutkowski P, Hassel JC, McNeil CM, Kalinka EA, Lebbé C, Charles J, Hernberg MM, Savage KJ, Chiarion-Sileni V, Mihalcioiu C, Mauch C, Arance A, Cognetti F, Ny L, Schmidt H, Schadendorf D, Gogas H, Zoco J, Re S, Ascierto PA, Atkinson V. **Five-Year Outcomes With Nivolumab in Patients With Wild-Type BRAF Advanced Melanoma**. *Journal of Clinical Oncology.* 38(33):3937-3945. I.F.: 32.956

8. Pinato DJ, Zambelli A, Aguilar-Company J, Bower M, Sng C, Salazar R, Bertuzzi A, Brunet J, Mesia R, Segui E, Biello F, Generali D, Grisanti S, Rizzo G, Libertini M, Maconi A, Harbeck N, Vincenzi B, Bertulli R, Ottaviani D, Carbo A, Bruna R, Benafif S, Marrari A, Wuerstlein R, Carmona-Garcia MC, Chopra N, Tondini C, Mirallas O, Tovazzi V, Betti M, Provenzano S, Fotia V, Cruz CA, Dalla Pria A, D'Avanzo F, Evans JS, Saoudi-Gonzalez N, Felip E, Galazi M, Garcia-Fructuoso I, Lee AJX, Newsom-Davis T, Patriarca A, Garcia-Illescas D, Reyes R, Dileo P, Sharkey R, Wong YNS, Ferrante D, Marco-Hernandez J, Sureda A, Maluquer C, Ruiz-Camps I, Gaidano G, Rimassa L, Chiudinelli L, Izuzquiza M, Cabirta A, Franchi M, Santoro A, Prat A, Tabernero J, Gennari A. **Clinical Portrait of the SARS-CoV-2 Epidemic in European Patients with Cancer.** *Cancer Discovery.* 10(10):1465-1474. I.F.: 29.497

9. Cortés J, Diéras V, Lorenzen S, Montemurro F, Riera-Knorrenschild J, Thuss-Patience P, Allegrini G, De Laurentiis M, Lohrisch C, Oravcová E, Perez-Garcia JM, Ricci F, Sakaeva D, Serpanchy R, Šufliarský J, Vidal M, Irahara N, Wohlfarth C, Aout M, Gelmon K. **Efficacy and Safety of Trastuzumab Emtansine Plus Capecitabine vs Trastuzumab Emtansine Alone in Patients With Previously Treated ERBB2 (HER2)-Positive Metastatic Breast Cancer: A Phase 1 and Randomized Phase 2 Trial.** *Jama Oncology.* 6(8):1203-1209. I.F.: 24.799

10. Gonzalez-Cao, Maria; Moran, Teresa; Dalmau, Judith; Garcia-Corbacho, Javier; Bracht, Jillian W P; Bernabe, Reyes; Juan, Oscar; de Castro, Javier; Blanco, Remei; Drozdowskyj, Ana; Argilaguet, Jordi; Meyerhans, Andreas; Blanco, Julia; Prado, Julia G; Carrillo, Jorge; Clotet, Bonaventura; Massuti, Bartomeu; Provencio, Mariano; Molina-Vila, Miguel A; Mayo de las Casa, Clara; Garzon, Monica; Cao, Peng; Huang, Chung-Ying; Martinez-Picado, Javier; Rosell, Rafael. **Assessment of the Feasibility and Safety of Durvalumab for Treatment of Solid Tumors in Patients With HIV-1 Infection The Phase 2 DURVAST Study**. *Jama Oncology.* 6(7):1063-1067. I.F.: 24.799

11. Kas B, Talbot H, Ferrara R, Richard C, Lamarque JP, Pitre-Champagnat S, Planchard D, Balleyguier C, Besse B, Mezquita L, Lassau N, Caramella C. **Clarification of Definitions of Hyperprogressive Disease During Immunotherapy for Non-Small Cell Lung Cancer.** Jama Oncology. 6(7):1039-1046. I.F.: 24.799

12. Puzanov, Igor; Ribas, Antoni; Robert, Caroline; Schachter, Jacob; Nyakas, Marta; Daud, Adil; Arance, Ana; Carlino, Matteo S.; O'Day, Steven J.; Long, Georgina, V; Margolin, Kim A.; Dummer, Reinhard; Schadendorf, Dirk; Lutzky, Jose; Ascierto, Paolo A.; Tarhini, Ahmad; Lin, Jianxin; Mogg, Robin; Moreno, Blanca Homet; Ibrahim, Nageatte; Hamid, Omid. **Association of BRAF V600E/K Mutation Status and Prior BRAF/MEK Inhibition With Pembrolizumab Outcomes in Advanced Melanoma Pooled Analysis of 3 Clinical Trials. Jama Oncology.** 6(8):1256-1264. I.F.: 24.799

13. Pros E, Saigi M, Alameda D, Gomez-Mariano G, Martinez-Delgado B, Alburquerque-Bejar JJ, Carretero J, Tonda R, Esteve-Codina A, Catala I, Palmero R, Jove M, Lazaro C, Patiño-Garcia A, Gil-Bazo I, Verdura S, Teulé A, Torres-Lanzas J, Sidransky D, Reguart N, Pio R, Juan-Vidal O, Nadal E, Felip E, Montuenga LM, Sanchez-Cespedes M. **Genome-wide profiling of non-smoking-related lung cancer cells reveals common RB1 rearrangements associated with histopathologic transformation in EGFR-mutant tumors.** *Annals of Oncology.* 31(2):274-282. I.F.: 18.274

14. Mezquita L., Jové M., Nadal E., Kfoury M., Morán T., Ricordel C., Dhooge M., Tlemsani C., Léna H., Teulé A., Álvarez J.V., Raimbourg J., Hiret S., Lacroix L., Menéndez M., Saldaña J., Brunet J., Lianes P., Coupier I., Auclin E., Recondo G., Friboulet L., Adam J., Green E., Planchard D., Frébourg T., Capellà G., Rouleau E., Lázaro C., Caron O., Besse B. **High Prevalence of Somatic Oncogenic Driver Alterations in Patients With NSCLC and Li-Fraumeni Syndrome.** *Journal of Thoracic Oncology.* 15(7):1232-1239. I.F.: 15.609

15. Brasó-Maristany F., Griguolo G., Pascual T., Paré L., Nuciforo P., Llombart-Cussac A., Bermejo B., Oliveira M., Morales S., Martínez N., Vidal M., Adamo B., Martínez O., Pernas S., López R., Muñoz M., Chic N., Galván P., Garau I., Manso L., Alarcón J., Martínez E., Gregorio S., Gomis R.R., Villagrasa P., Cortés J., Ciruelos E., Prat A. **Phenotypic changes of HER2-positive breast cancer during and after dual HER2 blockade.** *Nature Communications.* 11(1):385. I.F.: 12.121

16. Garcia-Recio S, Thennavan A, East MP, Parker JS, Cejalvo JM, Garay JP, Hollern DP, He X, Mott KR, Galván P, Fan C, Selitsky SR, Coffey AR, Marron D, Brasó-Maristany F, Burgués O, Albanell J, Rojo F, Lluch A, de Dueñas EM, Rosen JM, Johnson GL, Carey LA, Prat A, Perou CM. **FGFR4 regulates tumor subtype differentiation in luminal breast cancer and metastatic disease. Journal of Clinical Investigation.** 130(9):4871-4887. I.F.: 11.864

17. Prat A; Pascual T; De Angelis C; Gutierrez C; Llombart-Cussac A; Wang T; Cortés J; Rexer B; Paré L; Forero A; Wolff AC; Morales S; Adamo B; Brasó-Maristany F; Vidal M; Veeraraghavan J; Krop I; Galván P; Pavlick AC; Bermejo B; Izquierdo M; Rodrik-Outmezguine V; Reis-Filho JS; Hilsenbeck SG; Oliveira M; Dleci MV; Griguolo G; Fasani R; Nuciforo P; Parker JS; Conte P; Schiff R; Guarneri V; Osborne CK; Rimawi MF. **HER2-Enriched Subtype and ERBB2 Expression in HER2-Positive Breast Cancer Treated with Dual HER2 Blockade.** *Journal of the National Cancer Institute.* 112(1):46-54. I.F.: 11.577

18. Ascierto PA; Del Vecchio M; Mackiewicz A; Robert C; Chiarion-Sileni V; Arance A; Lebbé C; Svane IM; Mcneil C; Rutkowski P; Loquai C; Mortier L; Hamid O; Bastholt L; Dreno B; Schadendorf D; Garbe C; Nyakas M; Grob JJ; Thomas L; Liszkay G; Smylie M; Hoeller C; Ferraresi V; Grange F; Gutzmer R; Pikiel J; Hosein F; Simsek B; Maio M. **Overall survival at 5 years of follow-up in a phase III trial comparing ipilimumab 10 mg/kg with 3 mg/kg in patients with advanced melanoma.** *Journal for Immunotherapy of Cancer.* 8(1):e000391. I.F.: 10.252

19. Balana C, Vaz MA, Manuel Sepúlveda J, Mesia C, Del Barco S, Pineda E, Muñoz-Langa J, Estival A, de Las Peñas R, Fuster J, Gironés R, Navarro LM, Gil-Gil M, Alonso M, Herrero A, Peralta S, Olier C, Perez-Segura P, Covela M, Martinez-García M, Berrocal A, Gallego O, Luque R, Perez-Martín FJ, Esteve A, Munne N, Domenech M, Villa S, Sanz C, Carrato C. **A phase II randomized, multicenter, open-label trial of continuing adjuvant temozolomide beyond six cycles in patients with glioblastoma (GEINO 14-01).** *Neuro-Oncology.* 22(12):1851-1861. I.F.: 10.247

20. Lozano E, Mena MP, Díaz T, Martin-Antonio B, León S, Rodríguez-Lobato LG, Oliver-Caldés A, Cibeira MT, Bladé J, Prat A, Rosiñol L, Fernández de Larrea C. **Nectin-2 expression on malignant plasma cells is associated with better response to TIGIT blockade in multiple myeloma.** Clinical Cancer Research. 26(17):4688-4698. I.F.: 10.107

21. Carrato C, Alameda F, Esteve-Codina A, Pineda E, Arpí O, Martinez-García M, Mallo M, Gut M, Lopez-Martos R, Barco SD, Ribalta T, Capellades J, Puig J, Gallego O, Mesia C, Muñoz-Marmol AM, Archilla I, Arumí M, Blanc JM, Bellosillo B, Menendez S, Esteve A, Bagué S, Hernandez A, Craven-Bartle J, Fuentes R, Vidal N, Aldecoa I, Iglesia N, Balana C . **Glioblastoma TCGA mesenchymal and IGS 23 tumors are identifiable by immunohistochemistry and have an immune-phenotype indicating potential benefit from immunotherapy.** *Clinical Cancer Research.* 26(24):6600-6609. I.F.: 10.107

22. Ciruelos E, Villagrasa P, Pascual T, Oliveira M, Pernas S, Paré L, Escrivá-de-Romaní S, Manso L, Adamo B, Martínez E, Cortés J, Vazquez S, Perelló A, Garau I, Melé M, Martínez N, Montaño A, Bermejo B, Morales S, Echarri MJ, Vega E, González-Farré B, Martínez D, Galván P, Canes J, Nuciforo P, Gonzalez X, Prat A. **Palbociclib and trastuzumab in HER2-positive advanced breast cancer: Results from the phase II SOLTI-1303 PATRICIA trial.** *Clinical Cancer Research.* 26(22):5820-5829. I.F.: 10.107

23. Prat A, Tsai YH, Pascual T, Paré L, Adamo B, Vidal M, Brasó-Maristany F, Galván P, Brase JC, Rodrik-Outmezguine V, Johnston S, Ciruelos E, Parker JS. **A prognostic model based on PAM50 and clinical variables (PAM50MET) for metastatic hormone-receptor-positive HER2-negative breast cancer.** *Clinical Cancer Research.* 26(23):6141-6148. I.F.: 10.107

24. Gris-Oliver A, Palafox M, Monserrat L, Brasó-Maristany F, Òdena A, Sánchez-Guixé M, Ibrahim YH, Villacampa G, Grueso J, Parés M, Guzmán M, Rodríguez O, Bruna A, Hirst CS, Barnicle A, de Bruin EC, Reddy A, Schiavon G, Arribas J, Mills GB, Caldas C, Dienstmann R, Prat A, Nuciforo P, Razavi P, Scaltriti M, Turner NC, Saura C, Davies BR, Oliveira M, Serra V . **Genetic alterations in the PI3K/AKT pathway and baseline AKT activity define AKT inhibitor sensitivity in breast cancer patient-derived xenografts.** *Clinical Cancer Research.* 26(14):3720-3731. I.F.: 10.107

25. De Angelis C, Nagi C, Hoyt CC, Liu L, Roman K, Wang C, Zheng Y, Veeraraghavan J, Sethunath V, Nuciforo P, Wang T, Tsimelzon A, Mao S, Hilsenbeck SG, Trivedi MV, Cataldo ML, Pavlick A, Wolff AC, Weigelt B, Reis-Filho JS, Prat A, Gutierrez C, Osborne CK, Rimawi MF, Schiff R. **Evaluation of the predictive role of tumor immune infiltrate in HER2-positive breast cancer patients treated with neoadjuvant anti-HER2 therapy without chemotherapy.** *Clinical Cancer Research.* 26(3):738-745. I.F.: 10.107

26. Guarneri V, Dieci MV, Bisagni G, Brandes AA, Frassoldati A, Cavanna L, Musolino A, Giotta F, Rimanti A, Garrone O, Bertone E, Cagossi K, Nanni O, Piacentini F, Orvieto E, Griguolo G, Curtarello M, Urso L, Paré L, Chic N, D'Amico R, Prat A, Conte P. **PIK3CA Mutation in the ShortHER Randomized Adjuvant Trial for Patients with Early HER2+ Breast Cancer: Association with Prognosis and Integration with PAM50 Subtype.** *Clinical Cancer Research.* 26(22):5843-5851. I.F.: 10.107

27. Ortiz-Cuaran S, Mezquita L, Swalduz A, Aldea M, Mazieres J, Leonce C, Jovelet C, Pradines A, Avrillon V, Chumbi Flores WR, Lacroix L, Loriot Y, Westeel V, Ngo-Camus M, Tissot C, Raynaud C, Gervais R, Brain E, Monnet I, Giroux Leprieur E, Caramella C, Mahier-Aït Oukhatar C, Hoog-Labouret N, de Kievit F, Howarth K, Morris C, Green E, Friboulet L, Chabaud S, Guichou JF, Perol M, Besse B, Blay JY, Saintigny P, Planchard D. **Circulating Tumor DNA Genomics Reveal Potential Mechanisms of Resistance to BRAF-Targeted Therapies in Patients with BRAF-Mutant Metastatic Non-Small Cell Lung Cancer**. *Clinical Cancer Research.* 26(23):6242-6253. I.F.: 10.107

28. Ikemori R, Gabasa M, Duch P, Vizoso M, Bragado P, Arshakyan M, Luis IC, Marín A, Morán S, Castro M, Fuster G, Gea-Sorli S, Jauset T, Soucek L, Montuenga LM, Esteller M, Monsó E, Peinado VI, Gascon P, Fillat C, Hilberg F, Reguart N, Alcaraz J. **Epigenetic SMAD3 repression in tumor-associated fibroblasts impairs fibrosis and response to the antifibrotic drug nintedanib in lung squamous cell carcinoma.** *Cancer Research.* 80(2):276-290. I.F.: 9.727

29. Hruschka N, Kalisz M, Subijana M, Graña-Castro O, Del Cano-Ochoa F, Brunet LP, Chernukhin I, Sagrera A, De Reynies A, Kloesch B, Chin SF, Burgués O, Andreu D, Bermejo B, Cejalvo JM, Sutton J, Caldas C, Ramón-Maiques S, Carroll JS, Prat A, Real FX, Martinelli P. **The GATA3 X308_Splice breast cancer mutation is a hormone context-dependent oncogenic driver.** *Oncogene.* 39(32):5455-5467. I.F.: 7.971

30. Matas-García A; Milisenda JC; Selva-O'Callaghan A; Prieto-González S; Padrosa J; Cabrera C; Reguart N; Castrejón N; Solé M; Ros J; Trallero-Araguas E; Antoniol MN; Vila-Pijoan G; Grau JM. **Emerging PD-1 and PD-1L inhibitors-associated myopathy with a characteristic histopathological pattern.** Autoimmunity Reviews. 19(2):102455. I.F.: 7.767

31. Muñoz-Unceta N, Zugazagoitia J, Manzano A, Jiménez-Aguilar E, Olmedo ME, Cacho JD, Oliveira J, Dómine M, Ortega-Morán L, Aguado C, Luna AM, Fernández L, Pérez J, Font C, Salvador C, Corral J, Benítez G, Ros S, Biosca M, Calvo V, Martínez J, Sánchez-Cánovas M, López R, Sereno M, Mielgo X, Aparisi F, Carmona M, Carrión R, Ponce-Aix S, Soares M, Martínez-Salas I, García-Morillo M, Juan-Vidal O, Blasco A, Muñoz AJ, Paz-Ares L, Grupo de trombosis y cáncer SEOM. **High risk of thrombosis in patients with advanced lung cancer harboring rearrangements in ROS1.** *European Journal of Cancer.* 141:193-198. I.F.: 7.275

32. Ascierto PA; Dummer R; Gogas HJ; Flaherty KT; Arance A; Mandala M; Liszkay G; Garbe C; Schadendorf D; Krajsova I; Gutzmer R; de Groot JWB; Loquai C; Gollerkeri A; Pickard MD; Robert C. **Update on tolerability and overall survival in COLUMBUS: landmark analysis of a randomised phase 3 trial of encorafenib plus binimetinib vs vemurafenib or encorafenib in patients with BRAF V600–mutant melanoma**. *European Journal of Cancer.* 126:33-44. I.F.: 7.275

33. De Giglio A; Mezquita L; Auclin E; Blanc-Durand F; Riudavets M; Caramella C; Martinez G; Benitez JC; Martín-Romano P; El-Amarti L; Hendriks L; Ferrara R; Naltet C; Lavaud P; Gazzah A; Adam J; Planchard D; Chaput N; Besse B. **Impact of intercurrent introduction of steroids on clinical outcomes in advanced non-small-cell lung cancer (Nsclc) patients under immune-checkpoint inhibitors (ici).** *Cancers.* 12(10):2827. I.F.: 6.126

34. Castellano JJ; Marrades RM; Molins L; Viñolas N; Moises J; Canals J; Han B; Li Y; Martinez D; Monzó M; Navarro A. **Extracellular vesicle lincRNA-p21 expression in tumor-draining pulmonary vein defines prognosis in NSCLC and modulates endothelial cell behavior.** *Cancers.* 12(3):734. I.F.: 6.126

35. Marin E; Teixido C; Carmona-Rocha E; Reyes R; Arcocha A; Viñolas N; Rodríguez-Mues M; Cabrera C; Sánchez M; Vollmer I; Castillo S; Muñoz S; Sullivan IG; Rodriguez A; Garcia M; Alos S; Jares P; Martinez A; Prat A; Molina-Vila MÁ; Reguart N. **Usefulness of two independent DNA and rna tissue-based multiplex assays for the routine care of advanced NSCLC patients.** *Cancers.* 12(5):1124. I.F.: 6.126

36. Griguolo G, Brasó-Maristany F, González-Farré B, Pascual T, Chic N, Saurí T, Kates R, Gluz O, Martínez D, Paré L, Tsvetkova V, Pesantez D, Vidal M, Adamo B, Muñoz M, Galván P, Barberá L, Cuatrecasas M, Christgen M, Kreipe H, Monge-Escartín I, Villagrasa P, Soy D, Giarratano T, Dieci MV, Conte P, Harbeck N, Guarneri V, Prat A . **ERBB2 mRNA Expression and Response to Ado-Trastuzumab Emtansine (T-DM1) in HER2-Positive Breast Cancer.** *Cancers.* 12(7):1902. I.F.: 6.126

37. Pinato DJ, Lee AJX, Biello F, Seguí E, Aguilar-Company J, Carbó A, Bruna R, Bower M, Rizzo G, Benafif S, Carmona C, Chopra N, Cruz CA, D'Avanzo F, Evans JS, Galazi M, Garcia-Fructuoso I, Dalla Pria A, Newsom-Davis T, Ottaviani D, Patriarca A, Reyes R, Sharkey R, Sng CCT, Wong YNS, Ferrante D, Scotti L, Avanzi GC, Bellan M, Castello LM, Marco-Hernández J, Mollà M, Pirisi M, Ruiz-Camps I, Sainaghi PP, Gaidano G, Brunet J, Tabernero J, Prat A, Gennari A. **Presenting Features and Early Mortality from SARS-CoV-2 Infection in Cancer Patients during the Initial Stage of the COVID-19 Pandemic in Europe.** *Cancers.* 12(7):1841-13. I.F.: 6.126

38. López-Miranda E; Pérez-García JM; Di Cosimo S; Brain E; Ravnik M; Escrivá-De-romaní S; Vidal M; Gligorov J; Borštnar S; Calabuig L; Sampayo-Cordero M; Malfettone A; Llombart-Cussac A; Suter TM; Cortés J. **Trastuzumab emtansine plus non-pegylated liposomal doxorubicin in HER2-positive metastatic breast cancer (Thelma): A single-arm, multicenter, phase Ib trial.** *Cancers.* 12(12):3509. I.F.: 6.126

39. Seban RD; Assié JB; Giroux-leprieur E; Massiani MA; Soussan M; Bonardel G; Chouaid C; Playe M; Goldfarb L; Duchemann B; Mezquita L; Girard N; Champion L. **Association of the metabolic score using baseline FDG-PET/CT and DNLR with immunotherapy outcomes in advanced NSCLC patients treated with first-line pembrolizumab.** *Cancers.* 12(8):1-14. I.F.: 6.126

40. Geraud A; Mezquita L; Auclin E; Combarel D; Delahousse J; Gougis P; Massard C; Jovelet C; Caramella C; Adam J; Naltet C; Lavaud P; Gazzah A; Lacroix L; Rouleau E; Vasseur D; Mir O; Planchard D; Paci A; Besse B. **Chronic plasma exposure to kinase inhibitors in patients with oncogene-addicted non-small cell lung cancer.** *Cancers.* 12(12):3758. I.F.: 6.126

41. Nicolás I; Saco A; Barnadas E; Marimon L; Rakislova N; Fusté P; Rovirosa A; Gaba L; Buñesch L; Gil-Ibañez B; Pahisa J; Díaz-Feijoo B; Torne A; Ordi J; del Pino M. **Prognostic implications of genotyping and p16 immunostaining in HPV-positive tumors of the uterine cervix.** *Modern Pathology.* 33(1):128-137. I.F.: 5.988

42. Rosenthal M; Clement PM; Campone M; Gil-Gil MJ; DeGroot J; Chinot O; Idbaih A; Gan H; Raizer J; Wen PY; Pineda E; Donnet V; Mills D; El-Hashimy M; Mason W. **Buparlisib plus carboplatin or lomustine in patients with recurrent glioblastoma: a phase Ib/II, open-label, multicentre, randomised study.** *Esmo Open.* 5(4):e000672. I.F.: 5.329

43. Gluz O., Kolberg-Liedtke C., Prat A., Christgen M., Gebauer D., Kates R., Paré L., Grischke E.M., Forstbauer H., Braun M., Warm M., Hackmann J., Uleer C., Aktas B., Schumacher C., Kuemmel S., Wuerstlein R., Pelz E., Nitz U., Kreipe H.H., Harbeck N. **Efficacy of deescalated chemotherapy according to PAM50 subtypes, immune and proliferation genes in triple-negative early breast cancer: Primary translational analysis of the WSG-ADAPT-TN trial.** *International Journal of Cancer.* 146(1):262-271. I.F.: 5.145

44. Martínez-Sáez O, Chic N, Pascual T, Adamo B, Vidal M, González-Farré B, Sanfeliu E, Schettini F, Conte B, Brasó-Maristany F, Rodríguez A, Martínez D, Galván P, Rodríguez AB, Martinez A, Muñoz M, Prat A. **Frequency and spectrum of PIK3CA somatic mutations in breast cancer.** *Breast Cancer Research.* 22(1):45. I.F.: 4.988

45. Garrido-Castro AC; Saura C; Barroso-Sousa R; Guo H; Ciruelos E; Bermejo B; Gavilá J; Serra V; Prat A; Paré L; Céliz P; Villagrasa P; Li Y; Savoie J; Xu Z; Arteaga CL; Krop IE; Solit DB; Mills GB; Cantley LC; Winer EP; Lin NU; Rodon J. **Phase 2 study of buparlisib (BKM120), a pan-class I PI3K inhibitor, in patients with metastatic triple-negative breast cancer.** *Breast Cancer Research.* 22(1):120. I.F.: 4.988

46. Moisés J, Navarro A, Castellano JJ, Viñolas N, Molins L, Canals J, Han B, Martín J, Ramirez J, Frigola G, Marrades RM, Monzó M . **Long Non-Coding RNA NANCI/NKX2-1 Duplex Impacts Prognosis in Stage I Non-Small-Cell Lung Cancer.** *Archivos de Bronconeumología.* 56(10):630-636. I.F.: 4.957

47. Trilla-Fuertes L; Ghanem I; Gámez-Pozo A; Maurel J; G-Pastrián L; Mendiola M; Peña C; López-Vacas R; Prado-Vázquez G; López-Camacho E; Zapater-Moros A; Heredia V; Cuatrecasas M; García-Alfonso P; Capdevila J; Conill C; García-Carbonero R; Ramos-Ruiz R; Fortes C; Llorens C; Nanni P; Fresno Vara J; Feliu J. **Genetic profile and functional proteomics of anal squamous cell carcinoma: Proposal for a molecular classification.** *Molecular & Cellular Proteomics.* 19(4):690-700. I.F.: 4.870

48. Jiménez N; Reig Ò; Montalbo R; Milà-Guasch M; Nadal-Dieste L; Castellano G; Lozano JJ; Victoria I; Font A; Rodriguez-Vida A; Carles J; Suárez C; Domènech M; Sala-González N; Fernández PL; Rodríguez-Carunchio L; Díaz S; Prat A; Marín-Aguilera M; Mellado B. **Cell Plasticity-Related Phenotypes and Taxanes Resistance in Castration-Resistant Prostate Cancer.** *Frontiers in Oncology.* 10:594023. I.F.: 4.848

49. Remon J; Nadal E; Dómine M; Ruffinelli J; García Y; Pardo JC; López R; Cilleruelo A; García-Campelo R; Martín P; Juan O; González-Larriba JL; Provencio M; Olmedo E; Ponce S; Cumplido D; Barenys C; Majem M; Massutti B; Rodriguez-Abreu D; Porta R; Sala MA; Martinez-Kareaga M; Lianes P; Reguart N. **Malignant pleural mesothelioma: Treatment patterns and outcomes from the Spanish Lung Cancer Group**. *Lung Cancer.* 147:83-90. I.F.: 4.702

50. Garcia-Campelo R, Arrieta O, Massuti B, Rodriguez-Abreu D, Granados ALO, Majem M, Vicente D, Lianes P, Bosch-Barrera J, Insa A, Dómine M, Reguart N, Guirado M, Sala MÁ, Vázquez-Estevez S, Caro RB, Drozdowskyj A, Verdú A, Karachaliou N, Molina-Vila MA, Rosell R, Spanish Lung Cancer Group (SLCG). **Combination of gefitinib and olaparib versus gefitinib alone in EGFR mutant non-small-cell lung cancer (NSCLC): A multicenter, randomized phase II study (GOAL).** *Lung Cancer.* 150:62-69. I.F.: 4.702

51. Peled N; Gillis R; Kilickap S; Froesch P; Orlov S; Filippova E; Demirci U; Christopoulos P; Cicin I; Basal FB; Yilmaz C; Fedor M; Korkmaz T; Paydas S; Gautschi O; Zirtiloglu A; Eralp Y; Cinkir HY; Sezer A; Erman M; Tural D; Turna H; Mazieres J; Dudnik E; Reguart N; Camidge DR; Ng TL; Şenler FÇ; Beypınar İ; Yazılıtaş D; Demirkazık A; Karaoğlu A; Okutur K; Coşkun HŞ; Şendur MAN; Isikdogan A; Cabuk D; Yumuk PF; Yıldız I; Kaplan MA. **GLASS: Global Lorlatinib for ALK(+) and ROS1(+) retrospective Study: real world data of 123 NSCLC patients.** *Lung Cancer.* 148:48-54. I.F.: 4.702

52. Lope V, Guerrero-Zotano Á, Casas A, Baena-Cañada JM, Bermejo B, Pérez-Gómez B, Criado-Navarro I, Antolín S, Sánchez-Rovira P, Ramos-Vázquez M, Antón A, Castelló A, García-Saénz JÁ, Muñoz M, de Juan A, Andrés R, Llombart-Cussac A, Hernando B, Franquesa RM, Caballero R, Priego-Capote F, Martín M, Pollán M. **Serum Phospholipids Fatty Acids and Breast Cancer Risk by Pathological Subtype.** *Nutrients.* 12(10):3132. I.F.: 4.546

53. Marín-Aguilera M, Jiménez N, Reig Ò, Montalbo R, Verma AK, Castellano G, Mengual L, Victoria I, Pereira MV, Milà-Guasch M, García-Recio S, Benítez-Ribas D, Cabezón R, González A, Juan M, Prat A, Mellado B . **Androgen Receptor and Its Splicing Variant 7 Expression in Peripheral Blood Mononuclear Cells and in Circulating Tumor Cells in Metastatic Castration-Resistant Prostate Cancer.** *Cells.* 9(1):203. I.F.: 4.366

54. Sepúlveda-Sánchez JM; Gil-Gil M; Alonso-García M; Vaz Salgado MÁ; Vicente E; Mesía Barroso C; Rodríguez Sánchez Á; Durán G; De Las Peñas R; Muñoz-Langa J; Velasco G; Hernández-Laín A; Hilario A; Navarro Martín M; Benavides M; Oleaga L; Cantero Montenegro D; Ruano Y; Sánchez-Gómez P; Martín-Soberón MC; Morales-Llombart R; Pachón V; Pineda E. **Phase II Trial of Palbociclib in Recurrent Retinoblastoma-Positive Anaplastic Oligodendroglioma: A Study from the Spanish Group for Research in Neuro-Oncology (GEINO).** *Targeted Oncology.* 15(5):613-622. I.F.: 4.036

55. Fernández de Larrea-Baz N, Pérez-Gómez B, Guerrero-Zotano Á, Casas AM, Bermejo B, Baena-Cañada JM, Antolin S, Sánchez-Rovira P, Ramos Vázquez M, Garcia-Sáenz JÁ, Antón A, Muñoz M, de Juan A, Jara C, Chacón JI, Arcusa A, Gil-Gil M, Adrover E, Oltra A, Brunet J, González S, Bezares S, Lope V, Martín M, Pollán M. **Primary breast cancer and health related quality of life in Spanish women: The EpiGEICAM case-control study**. *Scientific Reports (Nature Publisher Group).* 10(1):7741. I.F.: 3.998

56. Francesco Schettini, Navid Sobhani, Anna Ianza, Tiziana Triulzi, Alfredo Molteni, Maria Chiara Lazzari, Carla Strina, Manuela Milani, Silvia Paola Corona, Marianna Sirico, Ottavia Bernocchi, Fabiola Giudici, Maria Rosaria Cappelletti, Eva Ciruelos, Guy Jerusalem, Sherine Loi, Stephen B. Fox & Daniele

Generali. **Immune system and angiogenesis-related potential surrogate biomarkers of response to everolimus-based treatment in hormone receptor-positive breast cancer: an exploratory study.** *Breast Cancer Research and Treatment.* 184(2):421-431. I.F.: 3.831

57. Trilla-Fuertes L; Ghanem I; Maurel J; G-Pastrián L; Mendiola M; Peña C; López-Vacas R; Prado-Vázquez G; López-Camacho E; Zapater-Moros A; Heredia V; Cuatrecasas M; García-Alfonso P; Capdevila J; Conill C; García-Carbonero R; Heath KE; Ramos-Ruiz R; Llorens C; Campos-Barros Á; Gámez-Pozo A; Feliu J; Vara JÁF. **Comprehensive Characterization of the Mutational Landscape in Localized Anal Squamous Cell Carcinoma.** *Translational Oncology.* 13(7):100778. I.F.: 3.558

58. Moran T, Taus A, Arriola E, Aguado C, Dómine M, Rueda AG, Calles A, Cedrés S, Viñolas N, Isla D, Palmero R, Sereno M, Diaz V, Juan O, Marsé R, Martorell PM, Sánchez Torres JM, Study Group for the Uncommon EGFR Mutations in Spain. **Clinical Activity of Afatinib in Patients With Non–Small-Cell Lung Cancer Harboring Uncommon EGFR Mutations: A Spanish Retrospective Multicenter Study.** *Clinical Lung Cancer.* 21(5):428-436.e2. I.F.: 3.550

59. Feliu J, Garcia-Carbonero R, Capdevila J, Guasch I, Alonso-Orduna V, Lopez C, Garcia-Alfonso P, Castanon C, Sevilla I, Cerezo L, Conill C, Quintana-Angel B, Sanchez ME, Ghanem I, Martin-Richard M, Lopez-Gomez M, Leon A, Caro M, Fernandez T, Maurel J. **VITAL phase 2 study: Upfront 5-fluorouracil, mitomycin-C, panitumumab and radiotherapy treatment in nonmetastatic squamous cell carcinomas of the anal canal (GEMCAD 09-02).** *Cancer Medicine.* 9(3):1008-1016. I.F.: 3.491

60. Alos L, Fuster C, Castillo P, Jares P, Garcia-Herrera A, Marginet M, Agreda F, Arance A, Gonzalvo E, Garcia M, Puig S, Teixido C . **TP53 mutation and tumoral PD-L1 expression are associated with depth of invasion in desmoplastic melanomas.** *Annals of Translational Medicine.* 8(19):1218. I.F.: 3.297

61. Marin E, Reyes R, Arcocha A, Viñolas N, Mezquita L, Gonzalvo E, Saez de Gordoa K, Jares P, Reguart N, Teixido C. **Prospective Evaluation of Single Nucleotide Variants by Two Different Technologies in Paraffin Samples of Advanced Non-Small Cell Lung Cancer Patients.** *Diagnostics.* 10(11):902. I.F.: 3.110

62. Hitt R, Iglesias L, López-Pousa A, Berrocal-Jaime A, Grau JJ, García-Girón C, Martínez-Trufero J, Guix M, Lambea-Sorrosal J, Del Barco-Morillo E, León-Vintró X, Cunquero-Tomas AJ, Baste N, Ocaña A, Cruz-Hernández JJ, the Spanish Head and Neck Cancer Cooperative Group (TTCC). **Long-term outcomes of induction chemotherapy followed by chemoradiotherapy vs chemoradiotherapy alone as treatment of unresectable head and neck cancer: follow-up of the Spanish Head and Neck Cancer Group (TTCC) 2503 Trial.** *Clinical & Translational Oncology.* 23(4):764-772. I.F.: 2.737

63. Bellmunt Molins J; García-Donas Jiménez J; Valderrama BP; Virizuela Echaburu JA; Hernando-Polo S; Climent Durán MÁ; Villa-Guzmán JC; Arranz Arija JÁ; Ostiategui ML; Milagro NL; González-Del-Alba A; González BM; Díaz EG; Gauna DC; Santasusana MD; Herranz UA; Del Muro Solans XG; Pérez-Gracia JL; Vázquez JP; Morales-Barrera R; Pous AF. **Final Overall Survival Analysis of the SOGUG Phase 2 MAJA Study: Maintenance Vinflunine Versus Best Supportive Care After First-Line Chemotherapy in Advanced Urothelial Carcinoma.** *Clinical Genitourinary Cancer.* 18(6):452-460. I.F.: 2.695

64. Alessandra Fabi, Gianluigi Ferretti, Paola Malaguti, Simona Gasparro, Cecilia Nisticò, Grazia Arpino, Paola Papaldo, Michelangelo Russillo, Giovanna Catania, Francesco Schettini, Diana Giannarelli, Francesco Cognetti. **Nanoparticle albumin-bound paclitaxel/liposomal-encapsulated doxorubicin in HER2-negative metastatic breast cancer patients.** *Future Oncology.* 16(22):1629-1637. I.F.: 2.660

65. Tuca A, Viladot M, Barrera C, Chicote M, Casablancas I, Cruz C, Font E, Marco-Hernández J, Padrosa J, Pascual A, Codorniu N, Román B. **Prevalence of ethical dilemmas in advanced cancer patients (secondary analysis of the PALCOM study).** *Supportive Care in Cancer.* I.F.: 2.635

66. Du, Chengrun; Blanchard, Pierre; Even, Caroline; Boros, Angela; Gorphe, Philippe; Breuskin, Ingrid; Baste-Rotllan, Neus; Nguyen, France; Ruffier, Amandine; Bidault, Francois; Billard, Camelia; Janot, Francois; Mirghani, Haitham; Temam, Stephane; Tao, Yungan. **Induction chemotherapy followed by radiotherapy for N3 head and neck squamous cell carcinoma.** *Head and Neck-Journal for the Sciences and Specialties of The Head and Neck.* 42(3):426-433. I.F.: 2.538

67. Ciruelos, Eva M; Montano, Alvaro; Rodriguez, Cesar A; Gonzalez-Flores, Encarnacion; Lluch, Ana; Garrigos, Laia; Quiroga, Vanesa; Anton, Antonio; Malon, Diego; Chacon, Jose, I; Velasco, Montserrat; Gonzalez-Cortijo, Lucia; Jolis, Laura; Echarri, Maria J; Munoz, Montse; Pascual, Tomas; Amigo, Yolanda; Casas, Maribel; Carrasco, Eva; Casas, Ana. **Phase III study to evaluate patient's preference of subcutaneous versus intravenous trastuzumab in HER2-positive metastatic breast cancer patients: Results from the ChangHER study (GEICAM/2012-07).** *European Journal of Cancer Care.* 29:e13253. I.F.: 2.161

68. Boada, Marc; Sanchez-Lorente, David; Libreros, Alejandra; Lucena, Carmen M; Marrades, Ramon; Sanchez, Marcelo; Paredes, Pilar; Serrano, Mario; Guirao, Angela; Guzman, Rudith; Vinolas, Nuria; Casas, Francesc; Agusti, Carles; Molins, Laureano. **Is invasive mediastinal staging necessary in intermediate risk patients with negative PET/CT?** *Journal of Thoracic Disease.* 12(8):3976-3986. I.F.: 2.046

69. Macedo M, Bassaganyas C, Ganau S, Sanfeliu E, Ubeda B, Bargallo X . **Ultrasound Findings of Breast Adenomas.** *J Ultrasound Med.* 39(11):2173-2180. I.F.: 1.759

70. Sánchez N; Valduvieco I; Ribal MJ; Campos F; Casas F; Nicolau C; Salvador R; Mellado B; Jorcano S; Fuster D; Paredes P. **Diagnostic utility and therapeutic impact of PET/CT [18F]F-Fluoromethylcholine -Choline in the biochemical recurrence of prostate cancer.** *Revista Espanola de Medicina Nucleare Imagen Molecular.* 39(5):284-291. I.F.: 1.090

Review / I.F.: 94.265

1. Ramos-Casals M, Brahmer JR, Callahan MK, Flores-Chávez A, Keegan N, Khamashta MA, Lambotte O, Mariette X, Prat A, Suárez-Almazor ME. **Immune-related adverse events of checkpoint inhibitors. Nature Reviews Disease Primers**. 6(1):38. I.F.: 40.689

2. Schettini F, Giudici F, Giuliano M, Cristofanilli M, Arpino G, Del Mastro L, Puglisi F, De Placido

S, Paris I, De Placido P, Venturini S, De Laurentis M, Conte P, Juric D, Llombart-Cussac A, Pusztai L, Prat A, Jerusalem G, Di Leo A, Generali D. **Overall survival of CDK4/6-inhibitors-based treatments in clinically relevant subgroups of metastatic breast cancer: systematic review and meta-analysis.** *Journal of the National Cancer Institute.* 112(11):1089-1097. I.F.: 11.577

3. Brandão M, Caparica R, Malorni L, Prat A, Carey LA, Piccart M. **What Is the Real Impact of Estrogen Receptor Status on the Prognosis and Treatment of HER2-Positive Early Breast Cancer?** *Clinical Cancer Research.* 26(12):2783-2788. I.F.: 10.107

4. Schettini F; Pascual T; Conte B; Chic N; Brasó-Maristany F; Galván P; Martínez O; Adamo B; Vidal M; Muñoz M; Fernández-Martinez A; Rognoni C; Griguolo G; Guarneri V; Conte PF; Locci M; Brase JC; Gonzalez-Farre B; Villagrasa P; De Placido S; Schiff R; Veeraraghavan J; Rimawi MF; Osborne CK; Pernas S; Perou CM; Carey LA; Prat A. **HER2-enriched subtype and pathological complete response in HER2-positive breast cancer: A systematic review and meta-analysis.** *Cancer Treatment Reviews.* 84(101965):101965. I.F.: 8.885

5. Reguart N; Marin E; Remon J; Reyes R; Teixido C. **In Search of the Long-Desired 'Copernican Therapeutic Revolution' in Small-Cell Lung Cancer.** *Drugs.* 80(3):241-262. I.F.: 6.189

6. Oliveres, Helena; Pineda, Estela; Maurel, Joan. **MET inhibitors in cancer: pitfalls and challenges.** *Expert Opinion on Investigational Drugs.* 29(1):73-85. I.F.: 5.081

7. Pascual T, Cejalvo JM, Oliveira M, Vidal M, Vega E, Ganau S, Julve A, Zamora E, Miranda I, Delgado A, Bermejo B, la Cruz-Merino L, Juan M, Ferrero-Cafiero JM, Canes J, Gonzalez X, Villagrasa P, Prat A. **SOLTI-1503 PROMETEO TRIAL: combination of talimogene laherparepvec with atezolizumab in early breast cancer.** *Future Oncology.* 16(24):1801-1813. I.F.: 2.660

8. Recondo G, Mezquita L. **Clinical efficacy, predictive biomarkers and response patterns of immunotherapy combinations for patients with cancer.** *Future Oncology.* 16(23):1659-1664. I.F.: 2.660

9. Virginia Bluthgen, Maria; Bast, Neus; Recondo, Gonzalo. **Immunotherapy combinations for the treatment of patients with solid tumors.** *Future Oncology.* 16(23):1715-1736. I.F.: 2.660

10. Grau JJ; Caballero M; Garrido C; Canalda S; Trilla A. **Neck mass and tracheostomy in a young lady depicted by Piero di Cosimo.** *Hormones-International Journal of Endocrinology and Metabolism.* 19(2):261-264. I.F.: 1.962

11. Benitez JC; Recondo G; Rassy E; Mezquita L. **The LIPI score and inflammatory biomarkers for selection of patients with solid tumors treated with checkpoint inhibitors.** *Quarterly Journal of Nuclear Medicineand Molecular Imaging.* 64(2):162-174. I.F.: 1.795

Letters / I.F.: 43.764

1. Muñoz M, Prat A. **Implementing preoperative endocrine therapy in breast cancer.** Lancet Oncology. 21(11):1390-1392. I.F.: 33.752

2. Pesántez D; Seguí E; Ordás I; Viladot M; Arance A. **Successful management of refractory immune-mediated enterocolitis with cyclosporine**. *European Journal of Cancer.* 131:37-39. I.F.: 7.275

3. Prat A., Parker J.S. **Standardized versus research-based PAM50 intrinsic subtyping of breast cancer.** *Clinical & Translational Oncology.* 22(6):953-955. I.F.: 2.737

Editorial / I.F.: 10.452

1. Aldea M; Benitez JC; Mezquita L. **The lung immune prognostic index (LIPI) stratifies prognostic groups in advanced non-small cell lung cancer (NSCLC) patients.** *Translational Lung Cancer Research.* 9(4):967-970. I.F.: 5.132

2. Teixido C, Reguart N. **Using biomarkers to determine optimal combinations with immunotherapy (biomarker discovery perspective).** *Future Oncology.* 16(23):1677-1681. I.F.: 2.660

3. Riudavets M, Auclin E, Mezquita L. **Host circulating biomarkers for immune-checkpoint inhibitors: single-agent and combinations.** *Future Oncology.* 16(23):1665-1668. I.F.: 2.660

Case Reports / I.F.: 1.241

1. Rojas-Lechuga MJ, Remacha J, González-Sánchez N, Grau JJ, Castillo P, Haag O, Vilaseca I. **Juvenile recurrent respiratory papillomatosis treated with combined erlotinib and celecoxib: Initial report.** *International Journal of Pediatric Otorhinolaryngology.* 137(110194). I.F.: 1.241

Clinical Guidelines / I.F.: 57.559

1. Cardoso F, Paluch-Shimon S, Senkus E, Curigliano G, Aapro MS, André F, Barrios CH, Bergh J, Bhattacharyya GS, Biganzoli L, Boyle F, Cardoso MJ, Carey LA, Cortés J, El Saghir NS, Elzayat M, Eniu A, Fallowfield L, Francis PA, Gelmon K, Gligorov J, Haidinger R, Harbeck N, Hu X, Kaufman B, Kaur R, Kiely BE, Kim SB, Lin NU, Mertz SA, Neciosup S, Offersen BV, Ohno S, Pagani O, Prat A, Penault-Llorca F, Rugo HS, Sledge GW, Thomssen C, Vorobiof DA, Wiseman T, Xu B, Norton L, Costa A, Winer EP. **5th ESO-ESMO international consensus guidelines for advanced breast cancer (ABC 5)†.** *Annals of Oncology.* 31(12):1623-1649. I.F.: 18.274

2. Keilholz U, Ascierto PA, Dummer R, Robert C, Lorigan P, van Akkooi A, Arance A, Blank CU, Chiarion Sileni V, Donia M, Faries MB, Gaudy-Marqueste C, Gogas H, Grob JJ, Guckenberger M, Haanen J, Hayes AJ, Hoeller C, Lebbé C, Lugowska I, Mandalà M, Márquez-Rodas I, Nathan P, Neyns B, Olofsson Bagge R, Puig S, Rutkowski P, Schilling B, Sondak VK, Tawbi H, Testori A, Michielin O. **ESMO consensus conference recommendations on the management of metastatic melanoma: the ESMO Guidelines Committee**. *Annals of Oncology.* 31(11):1435-1448. I.F.: 18.274

3. Michielin O, van Akkooi A, Lorigan P, Ascierto PA, Dummer R, Robert C, Arance A, Blank CU, Chiarion Sileni V, Donia M, Faries MB, Gaudy-Marqueste C, Gogas H, Grob JJ, Guckenberger M, Haanen J, Hayes AJ, Hoeller C, Lebbé C, Lugowska I, Mandalà M, Márquez-Rodas I, Nathan P, Neyns B, Olofsson Bagge R, Puig S, Rutkowski P, Schilling B, Sondak VK, Tawbi H, Testori A, Keilholz U. **ESMO consensus conference recommendations on the management of locoregional melanoma: the ESMO Guidelines Committee.** *Annals of Oncology.* 31(11):1449-1461. I.F.: 18.274

4. Majem M; García-Martínez E; Martinez M; Muñoz-Couselo E; Rodriguez-Abreu D;

Alvarez R; Arance A; Berrocal A; de la Cruz-Merino L; Lopez-Martin J. SEOM clinical guideline for the management of immune-related adverse events in patients treated with immune checkpoint inhibitors (2019). Clinical & Translational Oncology. 22(2):213-222. I.F.: 2.737

Consortium Publications / I.F.: 5.145

1. Roldan-Romero, Juan M.; Beuselinck, Benoit; Santos, Maria; Rodriguez-Moreno, Juan F.; Lanillos, Javier; Calsina, Bruna; Gutierrez, Ana; Tang, Karin; Lainez, Nuria; Puente, Javier; Castellano, Daniel; Esteban, Emilio; Climent, Miguel A.; Arranz, Jose A.; Albersen, Maarten; Oudard, Stephane; Couchy, Gabrielle; Caleiras, Eduardo; Montero-Conde, Cristina; Cascon, Alberto; Robledo, Mercedes; Rodriguez-Antona, Cristina; Garcia-Donas J. **Spanish Oncology Genitourinary Group (SOGUG). PTEN expression and mutations in TSC1, TSC2 and MTOR are associated with response to rapalogs in patients with renal cell carcinoma.** *International Journal of Cancer.* 146(5):1435-1444. I.F.: 5.145

GRANTS FOR RESEARCH IN PROGRESS

Maurel J. **Mejora de la inmunoterapia del cáncer de colon metastásico mediante nuevas terapias dirigidas contra el metabolismo de células tumorales y células inmunes.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/00740
Duration: 01/01/2020-31/12/2022

Mellado B. **Plasticidad celular y perfil asociados al tratamiento en cáncer de próstata metastásico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_FIS_PI18/00714
Duration: 01/01/2019-31/12/2021

Mezquita L. **RADAR study: Molecular signature of radioactivity-induced lung cancer based on radon-induced lung cancer rats from the frech atomic energy commission cohort.**
Sponsored by: Fundación Sociedad Española de Oncología Médica. SEOM_RETRONO19_01
Duration: 01/07/2020-30/06/2021

Pineda E. **Study of the molecular mechanisms involved in primary (glioblastoma) and secondary (metastasis) brain tumors to identify novel therapeutic targets and anti-cancer agents, biomarkers to select treatments and novel non-invasive methods for molecular diagnos.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_GrupoTraslac17
Duration: 15/11/2017-14/11/2022

Prat A. **Translational Genomics and Targeted Therapeutics in Solid Tumors.**
Sponsored by: Generalitat de Catalunya. AGAUR_SGR17_01554
Duration: 01/01/2017-30/09/2021

Prat A. **Identification of mechanisms of response to CDK4/6 inhibition in hormone receptor-positive breast cancer.**
Sponsored by: Fundació La Marató de TV3. Cancer_19
Duration: 30/07/2020-29/07/2023

Prat A. **Identificación y validación de una firma genòmica predictiva de beneficio a farmácos anti-PD1 en múltiples tumores sólidos.**
Sponsored by: Fundación Sociedad Española de Oncología Médica. SEOM_PROYECTOS16_01
Duration: 01/11/2016-15/12/2020

Prat A. **Identificación de nuevas dianas terapéuticas para el tratamiento del fenotipo molecular HER2-enriched en cáncer de mama receptor hormonal positivo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19/01846
Duration: 01/01/2020-31/12/2022

Prat A. **Doble bloque HER2 sin quimioterapia en cáncer de mama precoz HER2+.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00904
Duration: 01/01/2017-30/06/2021

Prat A. **Terapia celular adoptiva mediante transferencia de linfocitos CD3+/PD1+ infiltrantes de tumor en pacientes con cáncer de mama avanzado.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_GruposCoord19
Duration: 01/12/2019-30/11/2024

Prat A. **Estudio de los mecanismos de sensibilidad y resistencia al doble bloqueo HER2 y a las combinaciones con enzaluatamida o palbociclib en modelos preclínicos de cáncer de mama HER2-positivo.**
Sponsored by: Fundación científica Asociación Española contra el Cáncer. AECC_Postdoctoral17
Duration: 01/11/2017-

Prat A. **Estudio prospectivo exploratorio para la determinación de DNA circulante tumoral (ctDNA) en muestras sanguíneas de pacientes tratadas por cáncer de mama en seguimiento y sin evidencia de recidiva: ESTUDIO B-CRONOS.**
Sponsored by: Fundación de investigación médica Mutua Madrileña. FundMM_AP168952018
Duration: 06/07/2018-05/07/2021

Prat A. **Prospective exploratory study for determination of circulating tumor DNA (ctDNA) in blood samples from patients treated for breast cancer in follow-up and without evidence of relapse (B-CRONOS).**
Sponsored by: Fundación Quirón Salud. TERAPIA_AMIGOS_18_01
Duration: 11/02/2019-10/02/2022

Prat A. **Caracterizacion de los linfocitos T CD8+/PD1+ en cancer de mama avanzado receptor hormonal-positivo con un fenotivo agresivo HER2-enriched.**
Sponsored by: Fundación Merck Salud. FSalud_19-IO-011
Duration: 01/07/2019-30/06/2021

Prat A. **Desarrollo de un test basado en DNA tumoral circulante (ctDNA) para identificar los subtipos moleculares intrínsecos de cáncer de mama.**
Sponsored by: Asociación Cáncer de Mama Metastásico. CMM_CHIARAG19_001
Duration: 01/02/2020-31/07/2021

Prat A. **Predicción de beneficio a inhibidores de CDK4/6 y tratamiento endocrino en cáncer de mama metastásico, receptor hormonal positivo/HER2 negativo.**
Sponsored by: Asociación Cáncer de Mama Metastásico. CMM_METAPREMIOS20_01
Duration: 02/12/2020-01/12/2021

Prat A. **Estudio del fenotipo HER2-enriquecido en cáncer de mama HER2-negativo.**
Sponsored by: Fundación Astrazeneca. ZENECA_JOVINV17_003
Duration: 12/12/2017-

Prat A. **RESCUER: Resistance under combinatorial treatment in ER+ and ER- breast cancer.**
Sponsored by: European Commission. CE_H2020-SC1_2019_2s
Duration: 01/01/2020-31/12/2024

Prat A. **EuCanImage. A European Cancer Image Platform Linked to Biological and Health Data for Next-Generation Artificial Intelligence and Precision Medicine in Oncology.**
Sponsored by: European Commission. CE_H2020_SC1_20_1s13
Duration: 01/10/2020-30/09/2024

Prat A. **Targeting the HER2-enriched phenotype in hormone receptor-positive breast cancer.**
Sponsored by: Breast Cancer Now.INT_BC-N_Catalyst_18
Duration: 01/03/2019-28/02/2022

Prat A. **Tailoring systemic treatment of Luminal B breast cancer.**
Sponsored by: American Association for Cancer Research. INT_BCRF_AACR_18
Duration: 01/07/2019-30/06/2021

Reguart N. **Validación de un ensayo multiplex personalizado para la detección de Oncogenes y firmas inmunes en Cáncer de Pulmón (CP): estudio observacional, prospectivo y multicéntrico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI16/00890
Duration: 01/01/2017-31/12/2020

DOCTORAL THESIS

Reguart N. **Real world data of an amplicon-based NGS liquid biopsy for broad molecular profiling in advanced non-small cell lung cancer patients.**
PhD student: Jordi Remon Masip

5.19 Melanoma: imaging, genetics and immunology

LOCATION
CEK building, floor 2

KEYWORDS
1. **Melanoma**
2. **Genetics**
3. **Dermoscopy**
4. **Confocal microscopy**
5. **Susceptibility**

RELATED KEYWORDS
1. **Melanoma**
2. **Giant congenital melanocytic nevi (GCMN)**
3. **Squamous cell carcinoma (SCC)**
4. **Basal cell carcinoma (BCC)**
5. **Xeroderma pigmentosum (XP)**
6. **Kindler syndrome (KS)**
7. **Recessive dystrophic epidermolysis bullosa (RDEB)**

GROUP INVOLVED IN
AGAUR_SGR17: 01134
ERANET

Original publications

TOTAL	33
I.F.	270,40
Mean I.F.	8,19
Q1	82%
D1	58%
MA	27%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Susana Puig (HCB)
T. 93 227 54 00 (Ext.: 5692)
spuig@clinic.cat

RESEARCHERS
Celia Badenas (HCB)
Cristina Carrera (HCB)
Josep Malvehy (HCB)
Joan Anton Puig (HCB)

POST-DOCTORAL RESEARCHERS
Paula Aguilera (HCB)
Melinda González Concepción (FCRB)
Vanessa Martin (FCRB)
Miriam Potrony (FCRB-HCB)
Gemma Tell (CIBER)

PRE-DOCTORAL RESEARCHERS
Alicia Ines Barreiro (IDIBAPS)
Neus Calbet (IDIBAPS)
Natalia Espinosa (FCRB)
Priscila Giavedoni (HCB)
Daniel Morgado (FCRB)
Javiera Perez (FCRB)
Sebastian Podlipnik (UB)
Carolina Sanchez Marcos (FCRB)

TECHNICIANS
Beatriz Alejo (FCRB)
Marc Combalia (FCRB)
Joan Fical (IDIBAPS)
Alexandra Franco (FCRB)
Sergi García Campderrich (IDIBAPS)
Judit Mateu (FCRB)

NURSING STAFF
Mireia Domínguez (FCRB)
Angels Herrero (FCRB)
Pablo Iglesias (FCRB)
Silvia Riera (FCRB)

ADMINISTRATIVE STAFF
Lilian Roca (FCRB)

PROBLEM

Skin cancer is the most common cancer in humans and, among the various common skin tumours, melanoma is the most aggressive and has the worst prognosis. Sun exposure habits and the ageing population are, nowadays, a growing problem in western societies.

The group focuses on the study of melanoma and non-melanoma skin cancer, as well as other skin conditions related to the risk of developing these cancers. The purpose is to improve prevention, early diagnosis and the achievement of a more personalised treatment of melanoma and non-melanoma skin cancer.

APPROACH

The group's research is multidisciplinary and its members include dermatologists, pathologists, nurses, biologists, biotechnologists, engineers, physicists, technicians and other specialists. Its research is translational.

In other words, it combines clinical studies with more molecular studies and projects that combine the two aspects, with the aim of identifying improvements both in prevention and in patient diagnosis, management, monitoring and treatment.

These improvements are transferred directly to patients, improving their quality of life and that of their families. The group uses a combination of new imaging technologies, molecular studies and artificial intelligence tools.

IMPACT

Thanks to the studies the group has carried out, it has been able to improve early diagnosis of skin cancer, reducing the number of benign lesions removed and diagnosing melanomas that are not very thick and have a good prognosis.

In addition, it has described the main melanoma susceptibility genes in the population and it has identified several molecular prognostic markers useful in clinical practice. With the group's new research lines, it intends to improve the classification of patients into specific prognosis groups to improve their management and treatment. The group is aiming to identify prognostic and predictive biomarkers.

RESEARCH LINES

- Analysis of the influence of the microbiota in skin cancer.

- Dermoscopy, digital dermoscopy, confocal microscopy and new photonic and physic technologies.

- Development of new treatment strategies for melanoma and other skin tumors.

- Evaluation of immune response in melanoma.

- Genetic epidemiology in melanoma and non-melanoma skin cancer.

- Giant congenital nevi.

- Identification of biomarkers for melanoma.

- Identification of genetic prognostic profiles in melanoma.

- Study of the mechanisms involved in carcinogenesis and photocarcinogenesis in melanoma and non-melanoma skin cancer.

- Artificial Intelligence for skin cancer diagnosis, prognosis and management.

PUBLICATIONS

Originals / I.F.: 270.396

1. Tschandl P, Rinner C, Apalla Z, Argenziano G, Codella N, Halpern A, Janda M, Lallas A, Longo C, Malvehy J, Paoli J, Puig S, Rosendahl C, Soyer HP, Zalaudek I, Kittler H. **Human-computer collaboration for skin cancer recognition.** *Nature Medicine.* 26(8):1229-1234. I.F.: 36.130

2. Eggermont AMM, Blank CU, Mandala M, Long GV, Atkinson VG, Dalle S, Haydon AM, Meshcheryakov A, Khattak A, Carlino MS, Sandhu S, Larkin J, Puig S, Ascierto PA, Rutkowski P, Schadendorf D, Koornstra R, Hernandez-Aya L, Di Giacomo AM, van den Eertwegh AJM, Grob JJ, Gutzmer R, Jamal R, Lorigan PC, van Akkooi ACJ, Krepler C, Ibrahim N, Marreaud S, Kicinski M, Suciu S, Robert C. **Longer Follow-Up Confirms Recurrence-Free Survival Benefit of Adjuvant Pembrolizumab in High-Risk Stage III Melanoma: Updated Results From the EORTC 1325-MG/KEYNOTE-054 Trial.** *Journal of Clinical Oncology.* 38(33):3925-3936. I.F.: 32.956

3. Landi MT, Bishop DT, MacGregor S, Machiela MJ, Stratigos AJ, Ghiorzo P, Brossard M, Calista D, Choi J, Fargnoli MC, Zhang T, Rodolfo M, Trower AJ, Menin C, Martinez J, Hadjisavvas A, Song L, Stefanaki I, Scolyer R, Yang R, Goldstein AM, Potrony M, Kypreou KP, Pastorino L, Queirolo P, Pellegrini C, Cattaneo L, Zawistowski M, Gimenez-Xavier P, Rodriguez A, Elefanti L, Manoukian S, Rivoltini L, Smith BH, Loizidou MA, Del Regno L, Massi D, Mandala M, Khosrotehrani K, Akslen LA, Amos CI, Andresen PA, Avril MF, Azizi E, Soyer HP, Bataille V, Dalmasso B, Bowdler LM, Burdon KP, Chen WV, Codd V, Craig JE, Dębniak T, Falchi M, Fang S, Friedman E, Simi S, Galan P, Garcia-Casado Z, Gillanders EM, Gordon S, Green A, Gruis NA, Hansson J, Harland M, Harris J, Helsing P, Henders A, Hočevar M, Höiom V, Hunter D, Ingvar C, Kumar R, Lang J, Lathrop GM, Lee JE, Li X, Lubiński J, Mackie RM, Malt M, Malvehy J, McAloney K, Mohamdi H, Molven A, Moses EK, Neale RE, Novaković S, Nyholt DR, Olsson H, Orr N, Fritsche LG, Puig-Butille JA, Qureshi AA, Radford-Smith GL, Randerson-Moor J, Requena C, Rowe C, Samani NJ, Sanna M, Schadendorf D, Schulze HJ, Simms LA, Smithers M, Song F, Swerdlow AJ, van der Stoep N, Kukutsch NA, Visconti A, Wallace L, Ward SV, Wheeler L, Sturm RA, Hutchinson A, Jones K, Malasky M, Vogt A, Zhou W, Pooley KA, Elder DE, Han J, Hicks B, Hayward NK, Kanetsky PA, Brummett C, Montgomery GW, Olsen CM, Hayward C, Dunning AM, Martin NG, Evangelou E, Mann GJ, Long G, Pharoah PDP, Easton DF, Barrett JH, Cust AE, Abecasis G, Duffy DL, Whiteman DC, Gogas H, De Nicolo A, Tucker MA, Newton-Bishop JA,, Peris K, Chanock SJ, Demenais F, Brown KM, Puig S, Nagore E, Shi J, Iles MM, Law MH GenoMEL Consortium, Q-MEGA and QTWIN Investigators, ATHENS Melanoma Study Group, 23andMe, SDH Study Group, IBD Investigators, Essen-Heidelberg Investigators, AMFS Investigators, MelaNostrum Consortium. **Genome-wide association meta-analyses combining multiple risk phenotypes provide insights into the genetic architecture of cutaneous melanoma susceptibility.** *Nature Genetics.* 52(5):494-504. I.F.: 27.605

4. Eggermont AMM, Kicinski M, Blank CU, Mandala M, Long GV, Atkinson V, Dalle S, Haydon A, Khattak A, Carlino MS, Sandhu S, Larkin J, Puig S, Ascierto PA, Rutkowski P, Schadendorf D, Koornstra R, Hernandez-Aya L, Di Giacomo AM, van den Eertwegh AJM, Grob JJ, Gutzmer R, Jamal R, Lorigan PC, Krepler C, Ibrahim N, Marreaud S, van Akkooi A, Robert C, Suciu S. **Association Between Immune-Related Adverse Events and Recurrence-Free Survival Among Patients With Stage III Melanoma Randomized to Receive Pembrolizumab or Placebo: A Secondary Analysis of a Randomized Clinical Trial.** *Jama Oncology.* 6(4):519-527. I.F.: 24.799

5. Yélamos O, Manubens E, Jain M, Chavez-Bourgeois M, Pulijal SV, Dusza SW, Marchetti MA, Barreiro A, Marino ML, Malvehy J, Cordova MA, Rossi AM, Rajadhyaksha M, Halpern AC, Puig S, Marghoob AA, Carrera C. **Improvement of diagnostic confidence and management of equivocal skin lesions by integration of reflectance confocal microscopy in daily practice: prospective study in two referral skin cancer centers.** *Journal of the American Academy of Dermatology.* 83(4):1057-1063. I.F.: 8.277

6. Sargen MR, Calista D, Elder DE, Massi D, Chu EY, Potrony M, Pfeiffer RM, Carrera C, Aguilera P, Alos L, Puig S, Elenitsas R, Yang XR, Tucker MA, Landi MT, Goldstein AM. **Histologic features of melanoma associated with germline mutations of CDKN2A, CDK4, and POT1 in melanoma-prone families from the United States, Italy, and Spain.** *Journal of the American Academy of Dermatology.* 83(3):860-869. I.F.: 8.277

7. Miguel BAF; Morgado-Carrasco D; Toll A; Pérez-Anker J. **Meshed keystone flap: A last-step modification to reduce tension and cover a larger surface.** *Journal of the American Academy of Dermatology.* 83(6):e397-e398. I.F.: 8.277

8. Gómez-Martín I, Collgros H, Ferguson PM, Barreiro A, Guitera P, Andrades-López E, Puig S, Pujol RM, Barranco C, Alòs L, Segura S. **Diagnostic accuracy of pigmented labial macules by in vivo reflectance confocal microscopy and correlation among techniques.** *Journal of the American Academy of Dermatology.* S0190-9622(20):30313-3. I.F.: 8.277

9. Sastre L, To-Figueras J, Lens S, Rodriguez-Tajes S, Bartres C, Aguilera P, Badenas C, Oliva R, Pocurull A, Forns X, Mariño Z. **Resolution of subclinical porphyria cutanea tarda after hepatitis C eradication with direct-acting anti-virals.** *Alimentary Pharmacology & Therapeutics.* 51(10):968-973. I.F.: 7.515

10. Lira FE, Podlipnik S, Potrony M, Tell-Martí G, Calbet-Llopart N, Barreiro A, Carrera C, Malvehy J, Puig S. **Inherited MC1R variants in**

melanoma patients are associated with better survival in females. *British Journal of Dermatology.* 182(1):138-146. I.F.: 7.000

11. Calbet-Llopart N, Potrony M, Tell-Martí G, Carrera C, Barreiro A, Aguilera P, Podlipnik S, Puig S, Malvehy J, Puig-Butillé JA. **Detection of cell-free circulating BRAFV 600E by droplet digital PCR in melanoma and non-melanoma patients under dermatological surveillance.** *British Journal of Dermatology.* 182(2):382-389. I.F.: 7.000

12. Pérez-Anker J, Ribero S, Yélamos O, García-Herrera A, Alos L, Alejo B, Combalia M, Moreno-Ramírez D, Malvehy J, Puig S. **Basal Cell Carcinoma Characterisation Using Fusion Ex Vivo Confocal Microscopy: A Promising Change In Conventional Skin Histopathology.** *British Journal of Dermatology.* 182(2):468-476. I.F.: 7.000

13. Yaron Y, Pauta M, Badenas C, Soler A, Borobio V, Illanes C, Paz-Y-Miño F, Martinez-Portilla R, Borrell A. **Maternal plasma genome-wide cell-free DNA can detect fetal aneuploidy in early and recurrent pregnancy loss and can be used to direct further workup.** *Human Reproduction.* 35(5):1222-1229. I.F.: 5.733

14. Miranda J, Paz Y Miño F, Borobio V, Badenas C, Rodriguez-Revenga L, Pauta M, Borrell A. **Can cell-free DNA testing be used in pregnancies with increased nuchal translucency**? *Ultrasound In Obstetrics & Gynecology.* 55(5):645-651. I.F.: 5.571

15. Navarrete-Dechent C, Liopyris K, Molenda MA, Braun R, Curiel-Lewandrowski C, Dusza SW, Guitera P, Hofmann-Wellenhof R, Kittler H, Lallas A, Malvehy J, Marchetti MA, Oliviero M, Pellacani G, Puig S, Soyer HP, Tejasvi T, Thomas L, Tschandl P, Scope A, Marghoob AA, Halpern AC. **Human surface anatomy terminology for dermatology: A Delphi consensus from the International Skin Imaging Collaboration (ISIC).** *Journal of the European Academy of Dermatology and Venereology.* 34(11):2659-2663. I.F.: 5.248

16. Tognetti, L; Cevenini, G; Moscarella, E; Cinotti, E; Farnetani, F; Lallas, A; Tiodorovic, D; Carrera, C; Puig, S; Perrot, J L; Longo, C; Argenziano, G; Pellacani, G; Smargiassi, E; Cataldo, G; Cartocci, A; Balistreri, A; Rubegni, P. **Validation of an integrated dermoscopic scoring method in an European teledermoscopy web platform: the iDScore project for early detection of melanoma.** *Journal of the European Academy of Dermatology and Venereology.* 34(3):640-647. I.F.: 5.248

17. Sgouros D, Lallas A, Kittler H, Zarras A, Kyrgidis A, Papageorgiou C, Puig S, Scope A, Argenziano G, Zalaudek I, Pizzichetta MA, Marghoob A, Liopyris K, Malvehy J, Oikonomou C, Flórez A, Braun R, Cabo H, Nazzaro G, Lanssens S, Menzies S, Paoli J, Kaminska-Winciorek G, Longo C, Katoulis A, Apalla Z, Ioannides D, Thomas L, Tromme I, Ogata D, Desinioti C, Geller A, Stratigos A . **Dermatoscopic features of thin (≤ 2mm Breslow thickness) versus thick (> 2mm Breslow thickness) nodular melanoma and predictors of nodular melanoma versus nodular non-melanoma tumors: a multicentric collaborative study by the International Dermoscopy Society**. *Journal of the European Academy of Dermatology and Venereology.* 34(11):2541-2547. I.F.: 5.248

18. Monnier J, Tognetti L, Miyamoto M, Suppa M, Cinotti E, Fontaine M, Perez J, Orte Cano C, Yélamos O, Puig S, Dubois A, Rubegni P, Del Marmol V, Malvehy J, Perrot JL. **In vivo characterisation of healthy human skin with a novel, non-invasive imaging technique: line-field confocal optical coherence tomography.** *Journal of the European Academy of Dermatology and Venereology.* 34(12):2914-2921. I.F.: 5.248

19. Ertekin SS, Podlipnik S, Ribero S, Molina R, Rios J, Carrera C, Malvehy J, Puig S . **Monthly changes in serum levels of S100B protein as a predictor of metastasis development in high-risk melanoma patients.** *Journal of the European Academy of Dermatology and Venereology.* 34(7):1482-1488. I.F.: 5.248

20. Helgadottir H; Ghiorzo P; Van Doorn R; Puig S; Levin M; Kefford R; Lauss M; Queirolo P; Pastorino L; Kapiteijn E; Potrony M; Carrera C; Olsson H; Höiom V; Jönsson G. **Efficacy of novel immunotherapy regimens in patients with metastatic melanoma with germline CDKN2A mutations.** *Journal of Medical Genetics.* 57(5):316-321. I.F.: 4.943

21. Donizy P, Wu CL, Mull J, Fujimoto M, Chłopik A, Peng Y, Shalin SC, Selim MA, Puig S, Fernandez-Figueras MT, Shea CR, Biernat W, Ryś J, Marszalek A, Hoang MP. **Up-Regulation of PARP1 Expression Significantly Correlated with Poor Survival in Mucosal Melanomas.** *Cells.* 9(5):1135. I.F.: 4.366

22. Brugués A; Ribero S; Martins da Silva V; Aguilera P; Garcia AP; Alós L; Malvehy J; Puig S; Carrera C. **Sutton Naevi as Melanoma Simulators: Can Confocal Microscopy Help in the Diagnosis?** *Acta Dermato-Venereologica.* 100(10):adv00134. I.F.: 4.016

23. Lukoviek V; Ferrera N; Podlipnik S; Ertekin SS; Carrera C; Barreiro A; Chavez-Bourgeois M; Perino F; Ortiz-Ruiz M; Puig S; Malvehy J. **Microblotches on Dermoscopy of Melanocytic Lesions are Associated with Melanoma: A Cross-sectional Study**. *Acta Dermato-Venereologica.* 100(8):adv00106. I.F.: 4.016

24. Boada A, Tejera-Vaquerizo A, Ribero S, Puig S, Moreno-Ramírez D, Quaglino P, Osella-Abate S, Cassoni P, Malvehy J, Carrera C, Pigem R, Barreiro-Capurro A, Requena C, Traves V, Manrique-Silva E, Fernández-Orland A, Ferrandiz L, García-Senosiain O, Fernández-Figueras MT, Ferrándiz C, Nagore E, SENTIMEL study group. **Factors associated with sentinel lymph node status and prognostic role of completion lymph node dissection for thick melanoma**. *Ejso.* 46(2):263-271. I.F.: 3.959

25. Calbet-Llopart N; Pascini-Garrigos M; Tell-Martí G; Potrony M; Martins da Silva V; Barreiro A; Puig S; Captier G; James I; Degardin N; Carrera C; Malvehy J; Etchevers HC; Puig-Butillé JA. **Melanocortin-1 receptor (MC1R) genotypes do not correlate with size in two cohorts of medium-to-giant congenital melanocytic nevi**. *Pigment Cell & Melanoma Research.* 33(5):685-694. I.F.: 3.683

26. Rodriguez-Revenga L, Madrigal I, Borrell A, Martinez JM, Sabria J, Martin L, Jimenez W, Mira A, Badenas C, Milà M. **Chromosome microarray analysis should be offered to all invasive prenatal diagnostic testing following a normal rapid aneuploidy test result.** *Clinical Genetics.* 98(4):379-383.I.F.: 3.578

27. Podlipnik S, Carrera C, Boada A, Richarz N, Marcoval J, Ferreres JR, Bodet D, Martí RM, Segura S, Sabat M, Dalmau J, Quintana M, Azon A, Curcó N, Formigon M, Olivella-Garcés MR, Zaballos P, Sola J, Galvany L, Baliu-Piqué C, Alegre M, Pasquali P, Malvehy J, Puig S. **On Behalf of The Network of Melanoma Centres of Catalonia. Incidence of Melanoma in Catalonia, Spain, is Rapidly Increasing in the Elderly Population.** *Journal of Clinical Medicine.* 9(11):3396. I.F.: 3.303

28. Pasquali P, Segurado-Miravalles G, Castillo M, Fortuño Á, Puig S, González S. **Use of Cytology in the Diagnosis of Basal Cell Carcinoma Subtypes.** *Journal of Clinical Medicine.* 9(3):612. I.F.: 3.303

29. Giavedoni P, Podlipnik S, Pericàs JM, Fuertes de Vega I, García-Herrera A, Alós L, Carrera C, Andreu-Febrer C, Sanz-Beltran J, Riquelme-Mc Loughlin C, Riera-Monroig J, Combalia A, Bosch-Amate X, Morgado-Carrasco D, Pigem R, Toll-Abelló A, Martí-Martí I, Rizo-Potau D, Serra-García L, Alamon-Reig F, Iranzo P, Almuedo-Riera A, Muñoz J, Puig S, Mascaró JM. **Skin Manifestations in COVID-19: Prevalence and Relationship with Disease Severity.** *Journal of Clinical Medicine.* 9(10):3261. I.F.: 3.303

30. Alos L, Fuster C, Castillo P, Jares P, Garcia-Herrera A, Marginet M, Agreda F, Arance A, Gonzalvo E, Garcia M, Puig S, Teixido C. **TP53 mutation and tumoral PD-L1 expression are associated with depth of invasion in desmoplastic melanomas**. *Annals of Translational Medicine.* 8(19):1218. I.F.: 3.297

31. Gareau DS, Browning J, Correa Da Rosa J, Suarez-Farinas M, Lish S, Zong AM, Firester B, Vrattos C, Renert-Yuval Y, Gamboa M, Vallone MG, Barragán-Estudillo ZF, Tamez-Peña AL, Montoya J, Jesús-Silva MA, Carrera C, Malvehy J, Puig S, Marghoob A, Carucci JA, Krueger JG . **Deep learning-level melanoma detection by interpretable machine learning and imaging biomarker cues.** *J Biomed Opt.* 25(11):112906. I.F.: 2.785

32. Caini S, Gandini S, Botta F, Tagliabue E, Raimondi S, Nagore E, Zanna I, Maisonneuve P, Newton-Bishop J, Polsky D, Lazovich D, Kumar R, Kanetsky PA, Hoiom V, Ghiorzo P, Landi MT, Ribas G, Menin C, Stratigos AJ, Palmieri G, Guida G, García-Borrón JC, Nan H, Little J, Sera F, Puig S, Fargnoli MC, M-SKIP study group. **MC1R variants and cutaneous melanoma risk according to histological type, body site, and Breslow thickness: a pooled analysis from the M-SKIP project.** *Melanoma Research.* 30(5):500-510. I.F.: 2.750

33. Orois, Aida; Badenas, Celia; Reverter, Jordi L; Lopez, Veronica; Potrony, Miriam; Mora, Mireia; Halperin, Irene; Oriola, Josep. **Lack of Mutations in POT1 Gene in Selected Families with Familial Non-Medullary Thyroid Cancer. Hormones & Cancer.** 11(2):111-116. I.F.: 2.437

Review / I.F.: 24.496

1. Malvehy J, Pérez-Anker J, Toll A, Pigem R, Garcia A, Alos LL, Puig S . **Ex vivo Confocal Microscopy: revolution in fast pathology in dermatology.** *British Journal of Dermatology.* 183(6):1011-1025. I.F.: 7.000

2. Errichetti E, Zalaudek I, Kittler H, Apalla Z, Argenziano G, Bakos R, Blum A, Braun RP, Ioannides D, Lacarrubba F, Lazaridou E, Longo C, Micali G, Moscarella E, Paoli J, Papageorgiou C, Russo T, Scope A, Stinco G, Thomas L, Toncic RJ, Tschandl P, Cabo H, Hallpern A, Hofmann-Wellenhof R, Malvehy J, Marghoob A, Menzies S, Pellacani G, Puig S, Rabinovitz H, Rudnicka L, Vakirlis E, Soyer P, Stolz W, Tanaka M, Lallas A . **Standardization of dermoscopic terminology and basic dermoscopic parameters to evaluate in general dermatology (non-neoplastic dermatoses): an expert consensus on behalf of the International Dermoscopy Society.** *British Journal of Dermatology.* 182(2):454-467. I.F.: 7.000

3. Garbe C; Peris K; Soura E; Forsea AM; Hauschild A; Arenbergerova M; Bylaite M; del Marmol V; Bataille V; Samimi M; Gandini S; Saiag P; Eigentler TK; Lallas A; Zalaudek I; Lebbe C; Grob JJ; Hoeller C; Robert C; Dréno B; Arenberger P; Kandolf-Sekulovic L; Kaufmann R; Malvehy J; Puig S; Leiter U; Ribero S; Papadavid E; Quaglino P; Bagot M; John SM; Richard MA; Trakatelli M; Salavastru C; Borradori L; Marinovic B; Enk A; Pincelli C; Ioannides D; Paul C. **The evolving field of Dermato-oncology and the role of dermatologists: Position Paper of the EADO, EADV and Task Forces, EDF, IDS, EBDV–UEMS and EORTC Cutaneous Lymphoma Task Force.** *Journal of the European Academy of Dermatology and Venereology.* 34(10):2183-2197. I.F.: 5.248

4. Dummer R, Ascierto PA, Basset-Seguin N, Dréno B, Garbe C, Gutzmer R, Hauschild A, Krattinger R, Lear JT, Malvehy J, Schadendorf D, Grob JJ. **Sonidegib and vismodegib in the treatment of patients with locally advanced basal cell carcinoma: a joint expert opinion.** *Journal of the European Academy of Dermatology and Venereology.* 34(9):1944-1956. I.F.: 5.248

Letters / I.F.: 46.569

1. Pérez-Anker J, Puig S, Malvehy J. **A fast and effective option for tissue flattening: optimizing time and efficacy in ex vivo confocal microscopy.** *Journal of the American Academy of Dermatology.* 82(5):E157-E158. I.F.: 8.277

2. Peris K, Fargnoli MC, Garbe C, Kaufmann R, Bastholt L, Seguin NB, Bataille V, Del Marmol V, Dummer R, Harwood CA, Hauschild A, Höller C, Haedersdal M, Malvehy J, Middleton MR, Morton CA, Nagore E, Stratigos AJ, Szeimies RM, Tagliaferri L, Trakatelli M, Zalaudek I, Eggermont A, Grob JJ, European Dermatology Forum (EDF), European Association of Dermato-Oncology (EADO), European Organization for Research and Treatment of Cancer (EORTC). **Response to: Comment on 'Diagnosis and treatment of basal cell carcinoma: European consensus-based interdisciplinary guidelines'.** *European Journal of Cancer.* 140:154-157. I.F.: 7.275

3. Peris K, Fargnoli MC, Garbe C, Kaufmann R, Bastholt L, Seguin NB, Bataille V, Del Marmol V, Dummer R, Harwood CA, Hauschild A, Höller C, Haedersdal M, Malvehy J, Middleton MR, Morton CA, Nagore E, Stratigos AJ, Szeimies RM, Tagliaferri L, Trakatelli M, Zalaudek I, Eggermont A, Grob JJ, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO) and the European Organization for Research and Treatment of Cancer (EORTC). **Comment on 'Diagnosis and treatment of basal cell carcinoma: European consensus-based interdisciplinary guidelines'.** *European Journal of Cancer.* 131:100-103. I.F.: 7.275

4. Boada A, Tejera-Vaquerizo A, Ribero S, Puig S, Moreno-Ramírez D, Osella-Abate S, Cassoni P, Malvehy J, Podlipnik S, Requena C, Manrique-Silva E, Rios-Martin JJ, Ferrándiz C, Nagore E, SENTIMEL study group. **Age as a prognostic factor in thick and ultrathick melanomas without lymph node metastasis.** *Journal of the European Academy of Dermatology and Venereology.* 34(9):E513-E517. I.F.: 5.248

5. Schadendorf D, Hauschild A, Fosko S, Zloty D, Labeille B, Grob JJ, Puig S, Makrutzki M, Gilberg F, Hong A, Dréno B, Rogers G, Kunstfeld R. **Quality-of-life analysis with intermittent vismodegib regimens in patients with multiple basal cell carcinomas: patient-reported outcomes from the MIKIE study.** *Journal of the European Academy of Dermatology and Venereology.* 34(9):E526-E529. I.F.: 5.248

6. Riera-Monroig J; Combalia A; Rodríguez A; Alós L; Mangas C; Ferrando J; Carrera C. **Hedgehog-like moustache trichomegaly during treatment with vismodegib.** *Journal of the European Academy of Dermatology and Venereology.* 34(1):e11-e13. I.F.: 5.248

7. Ortiz-Brugues, A; Bosch-Amate, X; Vargas-Mora, P; Gomez, S; Giavedoni, P;

Carrera, C. **Dermal fillers may induce late-onset adverse skin reactions in patients under BRAF inhibitors.** *Journal of the European Academy of Dermatology and Venereology.* . 34(11):E732-E734. I.F.: 5.248

8. Del Busto-Wilhelm I, Giavedoni P, Vicente A, Gonzalez-Enseñat MA, Albert A, Alos L, Malvehy J, Puig S. **Ultrasound findings of proliferative nodule arising in a congenital melanocytic nevus.** *Melanoma Research.* 30(5):528-529. I.F.: 2.750

Editorial / I.F.: 2.712

1. Fusta-Novell, Xavier; Morgado-Carrasco, Daniel; Alejo, Beatriz; Riera-Monroig, Jose; Puig, Susana. **Diagnosis and treatment response monitoring of scabies with reflectance confocal microscopy: A diagnostic pearl.** *Indian Journal of Dermatology Venereology & Leprology.* 86(1):101-103. I.F.: 2.712

Case Reports / I.F.: 7.379

1. Villarreal-Compagny M, Iglesias P, Marco-Hernández J, Milisenda JC, Casanova-Molla J, Hernández-Rodríguez J, Puig S, Carrera C, Prieto-González S. **ANCA-associated vasculitic neuropathy during treatment with ipilimumab.** *Rheumatology.* 59(1):251-252. I.F.: 5.606

2. Alos L, Rodriguez-Carunchio L, Brugués A, Fuster C, Pinyol M, Puig S. **The Usefulness of Molecular Tools for the Diagnosis of a Challenging Nevoid Melanoma.** *Applied Immunohistochemistry & Molecular Morphology.* 28(4):E36-E37. I.F.: 1.773

Clinical Guidelines / I.F.: 65.648

1. Keilholz U, Ascierto PA, Dummer R, Robert C, Lorigan P, van Akkooi A, Arance A, Blank CU, Chiarion Sileni V, Donia M, Faries MB, Gaudy-Marqueste C, Gogas H, Grob JJ, Guckenberger M, Haanen J, Hayes AJ, Hoeller C, Lebbé C, Lugowska I, Mandalà M, Márquez-Rodas I, Nathan P, Neyns B, Olofsson Bagge R, Puig S, Rutkowski P, Schilling B, Sondak VK, Tawbi H, Testori A, Michielin O. **ESMO consensus conference recommendations on the management of metastatic melanoma: the ESMO Guidelines Committee.** *Annals of Oncology.* 31(11):1435-1448. I.F.: 18.274

2. Michielin O, van Akkooi A, Lorigan P, Ascierto PA, Dummer R, Robert C, Arance A, Blank CU, Chiarion Sileni V, Donia M, Faries MB, Gaudy-Marqueste C, Gogas H, Grob JJ, Guckenberger M, Haanen J, Hayes AJ, Hoeller C, Lebbé C, Lugowska I, Mandalà M, Márquez-Rodas I, Nathan P, Neyns B, Olofsson Bagge R, Puig S, Rutkowski P, Schilling B, Sondak VK, Tawbi H, Testori A, Keilholz U. **ESMO consensus conference recommendations on the management of locoregional melanoma: the ESMO Guidelines Committee.** *Annals of Oncology.* 31(11):1449-1461. I.F.: 18.274

3. Stratigos AJ, Garbe C, Dessinioti C, Lebbe C, Bataille V, Bastholt L, Dreno B, Fargnoli MC, Forsea AM, Frenard C, Harwood CA, Hauschild A, Hoeller C, Kandolf-Sekulovic L, Kaufmann R, Kelleners-Smeets NW, Malvehy J, Del Marmol V, Middleton MR, Moreno-Ramirez D, Pellecani G, Peris K, Saiag P, van den Beuken-van Everdingen MHJ, Vieira R, Zalaudek I, Eggermont AMM, Grob JJ, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO) and the European Organization for Research and Treatment of Cancer (EORTC). **European interdisciplinary guideline on invasive squamous cell carcinoma of the skin: Part 1. epidemiology, diagnostics and prevention**. *European Journal of Cancer.* 128:60-82. I.F.: 7.275

4. Stratigos AJ, Garbe C, Dessinioti C, Lebbe C, Bataille V, Bastholt L, Dreno B, Concetta Fargnoli M, Forsea AM, Frenard C, Harwood CA, Hauschild A, Hoeller C, Kandolf-Sekulovic L, Kaufmann R, Kelleners-Smeets NWJ, Malvehy J, Del Marmol V, Middleton MR, Moreno-Ramirez D, Pellecani G, Peris K, Saiag P, van den Beuken-van Everdingen MHJ, Vieira R, Zalaudek I, Eggermont AMM, Grob JJ, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO) and the European Organization for Research and Treatment of Cancer (EORTC). **European interdisciplinary guideline on invasive squamous cell carcinoma of the skin: Part 2. Treatment.** *European Journal of Cancer.* 128:83-102. I.F.: 7.275

5. Garbe C, Amaral T, Peris K, Hauschild A, Arenberger P, Bastholt L, Bataille V, Del Marmol V, Dréno B, Fargnoli MC, Grob JJ, Höller C, Kaufmann R, Lallas A, Lebbé C, Malvehy J, Middleton M, Moreno-Ramirez D, Pellacani G, Saiag P, Stratigos AJ, Vieira R, Zalaudek I, Eggermont AMM, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO), and the European Organization for Research and Treatment of Cancer (EORTC). **European consensus-based interdisciplinary guideline for melanoma. Part 2: Treatment – Update 2019.** *European Journal of Cancer.* 126:159-177. I.F.: 7.275

6. Garbe C, Amaral T, Peris K, Hauschild A, Arenberger P, Bastholt L, Bataille V, Del Marmol V, Dréno B, Fargnoli MC, Grob JJ, Höller C, Kaufmann R, Lallas A, Lebbé C, Malvehy J, Middleton M, Moreno-Ramirez D, Pellacani G, Saiag P, Stratigos AJ, Vieira R, Zalaudek I, Eggermont AMM, European Dermatology Forum (EDF), the European Association of Dermato-Oncology (EADO), and the European Organization for Research and Treatment of Cancer (EORTC). **European consensus-based interdisciplinary guideline for melanoma. Part 1: Diagnostics – Update 2019. European Journal of Cancer.** 126:141-158. I.F.: 7.275

Consortium Publications / I.F.: 25.315

1. Dube U., Ibanez L., Budde J.P., Benitez B.A., Davis A.A., Harari O., Iles M.M., Law M.H., Brown K.M., 23andMe Research Team; Melanoma-Meta-analysis Consortium; Cruchaga C. **Overlapping genetic architecture between Parkinson disease and melanoma.** *Acta Neuropathologica.* 139(2):347-364. I.F.: 14.256

2. Marchetti M; Liopyris K; Dusza S; Codella N; Gutman D; Helba B; Kalloo A; Halpern A; International Skin Imaging Collaboration. **Computer algorithms show potential for improving dermatologists' accuracy to diagnose cutaneous melanoma: Results of the International Skin Imaging Collaboration 2017.** *Journal of the American Academy of Dermatology.* 82(3):622-627. I.F.: 8.277

3. Forsea AM, Tschandl P, Zalaudek I, Del Marmol V, Soyer HP, Argenziano G, Geller AC, Eurodermoscopy Working Group. **Inequalities in the patterns of dermoscopy use and training across Europe: conclusions of the Eurodermoscopy pan-European survey.** *European Journal of Dermatology.* 30(5):524-531. I.F.: 3.328

GRANTS FOR RESEARCH IN PROGRESS

Carrera C. **Caracterización fenotípica-molecular de síndrome de nevus congénito gigante y su impacto psicoemocional. Identificación de patrones clínicos y genéticos relacionados con melanoma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00959
Duration: 01/01/2019-31/12/2021

Malvehy J. **Implementation of personalized medicine in malignant melanoma patients aided by artificial intelligence.**
Sponsored by: Fundació La Marató de TV3. Cancer_19
Duration: 07/08/2020-06/08/2023

Malvehy J, Puig-Butille JA. **Identificación de factores genéticos en individuos con nevus melanocíticos y su influencia en la determinacón de la mutación BRAF (V600E) en plasma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00956
Duration: 01/01/2016-30/11/2020

Malvehy J. **Implementation of Artifficial Intelligence for the diagnosis of Skin Cancer.**
Sponsored by: Barcelona Mobile Ventures. MWCapital_COLLIDER20_001
Duration: 01/09/2020-30/06/2021

Malvehy J. **Targeting sphingolipid metabolism to improve anti-melanoma immune therapies.**
Sponsored by: European Commission and Instituto de Salud Carlos III (ISCIII). CE_ERA-NET_TRANSC2_16 and AC16/00081
Duration: 01/04/2017-30/06/2021

Puig S. **Vías de diseminación metastásica en distintos subtipos del melanoma maligno: Nuevos biomarcadores tumorales y dianas terapéuticas.**
Sponsored by: Fundación científica asociación española contra el cáncer. AECC_GrupoEstable15
Duration: 01/07/2015-31/12/2020

Puig S. **Evaluación de las alteraciones inmunológicas subyacentes en el desarrollo, progresión y respuesta a las terapias inmunológicas en melanoma. Implicaión de la microbiota en la inducción de tolerancia y efectos secundarios de las terapias inmunológicas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI15/00716
Duration: 01/01/2016-30/11/2020

Puig S. **Implicación del perfil inmunológico específico cutáneo determinado en sangre periférica en el pronóstico y respuesta a tratamiento del melanoma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00419
Duration: 01/01/2019-31/12/2021

Puig S. **Monitoring multidimensional aspects of QUAlity of Life after cancer ImmunoTherapy - an Open smart digital Platform for personalized prevention and patient management.**
Sponsored by: European Commission. CE_H2020-SC1_19_1s24
Duration: 01/01/2020-31/12/2023

Puig S. **Melanoma Survival Model of genetic variant involved in naevus count.**
Sponsored by: European Academy of Dermatology and Venereology. INT_PPR-C_EADV_2017
Duration: 01/01/2018-30/06/2020

Puig-Butille JA, Malvehy J. **Utilidad del ADN libre en el seguimiento de pacientes con melanoma: identificación de factores clave y relevancia clínica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/01077
Duration: 01/01/2019-31/12/2021

DOCTORAL THESES

Puig S. **Pronóstico en melanoma. Optimización de los esquemas de seguimiento.**
PhD student: Sebastian Podlipnik

5.20 Molecular genetics of paediatric lymphomas

LOCATION
CEK building, floor 2

KEYWORDS
1. **Lymphoid neoplasms**
2. **Genomic alterations**
3. **Epigenome**
4. **Transcriptional regulation**
5. **Molecular pathology**

RELATED KEYWORDS
1. **Lymphoid neoplasms**

GROUP INVOLVED IN
AGAUR_SGR17: 01107
CIBERONC
ICGC
LLMPP

Original publications

TOTAL	3
I.F.	**32,81**
Mean I.F.	**10,94**
Q1	**100%**
D1	**67%**
MA	**67%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Itziar Salaverria (IDIBAPS)
T. 93 227 54 00 (Ext.: 4582)
isalaver@clinic.cat

PRE-DOCTORAL RESEARCHERS
Joan Enric Ramis (FCRB)
Julia Salmeron (CIBER)

TECHNICIANS
Noelia García Martínez (FCRB)

PROBLEM

Evidence shows that paediatric and adult lymphomas present clinical and biological differences, yet only molecular markers of adult patients are used in clinical practice (basically because few studies of non-Hodgkin lymphoma in children exist).

Furthermore, paediatric patients with non-Hodgkin lymphoma are treated based on a strict age limit (up to 18 years of age), instead of taking into account the biological complexity of each tumour.

APPROACH

The group studies the genetic and molecular profiles of the different subtypes of non-Hodgkin lymphoma in the paediatric population and in young adults, using high-resolution techniques. These studies provide more information on the biological basis of each subtype of non-Hodgkin lymphoma and make it possible to identify useful biomarkers for diagnosing and treating these patients.

The findings of these studies facilitate the stratification of patients in risk groups based on the body's response to different treatments, which opens the way to research on new therapeutic strategies aimed at specific targets.

IMPACT

The group has identified genetic abnormalities involved in the development of several paediatric lymphomas. Some had already been described as important targets in adult cancers, but others may be specific to paediatric lymphomas.

This highlights the importance of a comprehensive approach to understanding paediatric non-Hodgkin lymphoma. These findings open the way to developing specific treatments that benefit patients with lymphoma, especially recurrent cases, many of which are incurable.

RESEARCH LINES

- Identification of genetic biomarkers and drug targets.

- Integrative genetic profile and identification diagnostic markers

- Study of intratumoral heterogeneity.

PUBLICATIONS

Originals / I.F.: 32.811

1. Ramis-Zaldivar JE, Gonzalez-Farré B, Balagué O, Celis V, Nadeu F, Salmerón-Villalobos J, Andrés M, Martin-Guerrero I, Garrido-Pontnou M, Gaafar A, Suñol M, Bárcena C, Garcia-Bragado F, Andión M, Azorín D, Astigarraga I, Sagaseta de Ilurdoz M, Sábado C, Gallego S, Verdú-Amorós J, Fernandez-Delgado R, Perez V, Tapia G, Mozos A, Torrent M, Solano-Páez P, Rivas-Delgado A, Dlouhy I, Clot G, Enjuanes A, López-Guillermo A, Galera P, Oberley MJ, Maguire A, Ramsower C, Rimsza LM, Quintanilla-Martinez L, Jaffe ES, Campo E, Salaverria I. **Distinct molecular profile of IRF4-rearranged large B-cell lymphoma.** *Blood.* 135(4):274-286. I.F.: 17.794

2. Bassaganyas L, Pinyol R, Esteban-Fabró R, Torrens L, Torrecilla S, Willoughby CE, Franch-Expósito S, Vila-Casadesús M, Salaverria I, Montal R, Mazzaferro V, Camps J, Sia D, Llovet JM. **Copy number alteration burden differentially impacts immune profiles and molecular features of hepatocellular carcinoma.** *Clinical Cancer Research.* 26(23):6350-6361. I.F.: 10.107

3. Nann D, Ramis-Zaldivar JE, Müller I, Gonzalez-Farre B, Schmidt J, Egan C, Salmeron-Villalobos J, Clot G, Mattern S, Otto F, Mankel B, Colomer D, Balagué O, Szablewski V, Lome-Maldonado C, Leoncini L, Dojcinov S, Chott A, Copie-Bergman C, Bonzheim I, Fend F, Jaffe ES, Campo E, Salaverria I, Quintanilla-Martinez L. **Follicular lymphoma t(14;18)-negative is genetically a heterogeneous disease.** *Blood Advances.* 4(22):5652-5665. I.F.: 4.910

Letters / I.F.: 7.116

1. Fuster C, Martín-Garcia D, Balagué O, Navarro A, Nadeu F, Costa D, Prieto M, Salaverria I, Espinet B, Rivas-Delgado A, Terol MJ, Giné E, Forcada P, Ashton-Key M, Puente XS, Swerdlow SH, Beà S, Campo E. **Cryptic insertions of the immunoglobulin light chain enhancer region near CCND1 in t(11;14)-negative mantle cell lymphoma.** *Haematologica.* 105(8):e408-e411. I.F.: 7.116

GRANTS FOR RESEARCH IN PROGRESS

Salaverria I. **Linfomas en niños y adultos jóvenes: Impacto de las alteraciones genéticas y moleculares en la clasificación y estratificación de los pacientes.**
Sponsored by: Fundación científica Asociación Española contra el Cáncer. AECC_CanclInf_Raros17
Duration: 01/12/2017-30/06/2021

Salaverria I. **Mutaciones con impacto diagnóstico y pronóstico en linfoma No-Hodgkin en pacientes inmunocompetentes y posttrasplantes (PTLD) pediátricos y adultos jóvenes.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI18/00471
Duration: 01/01/2019-31/12/2021

5.21 Hematopoietic progenitor cell transplantation

LOCATION
CEK building, floor 2

KEYWORDS
1. **Allogeneic transplantation**
2. **Immunotherapy**
3. **Adoptive T cell transfer**
4. **Chimeric antigen receptor**
5. **Veno-oclussive disease**
6. **Graft versus host disease**
7. **Infectious diseases**

RELATED DISEASES
1. **Hematology malignancies**
2. **Solid tumors**

GROUP INVOLVED IN
RTICC_2012

Original publications

TOTAL	23
I.F.	**126,19**
Mean I.F.	**5,49**
Q1	**61%**
D1	**26%**
MA	**22%**

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Álvaro Urbano-Ispizua (HCB)
T. 93 227 54 75
aurbano@clinic.cat

RESEARCHERS
Enrique Carreras (HCB)
Francesc Fernández-Avilés (HCB)
Sònia Guedan (IDIBAPS)
Gonzalo Gutiérrez García (HCB)
Pedro Marín Fernández (HCB)
Beatriz Martín Antonio (FCRB)
Carmen Martínez Muñoz (HCB)
Montserrat Rovira (HCB)

ASSISTANT RESEARCHERS
Maria Castella (FCRB)

POST-DOCTORAL RESEARCHERS
Anthony Battram (IDIBAPS)
Hugo Calderón (FCRB)
Lorena Pérez Amil (FCRB)
María Suárez-Lledó (HCB)

PRE-DOCTORAL RESEARCHERS
Mireia Bachiller (FCRB)

TECHNICIANS
Marta Soria (FCRB)

ADMINISTRATIVE STAFF
Vanessa Arellano (HCB-FCRB)
Mª José Sánchez Melero (HCB)

PROBLEM

Patients with advanced malignant haemopathies and solid tumors have a very short life expectancy.

The group devotes its efforts to modifying the patient's immune system, thus making it possible to generate a more specific and powerful anti-tumour response.

APPROACH

The group performs the genetic modification of the patient's lymphocytes (CAR T cells), causing them to express a receptor that identifies cancer cells and that, once recognised, has high capacity to proliferate and to attack them.

IMPACT

The group is a pioneer centre in Europe conducting clinical trials with academic CAR-T cells. ARI-001, a CD19-CAR-T therapy developed in house, is the first European-developed CAR-T therapy approved for the treatment of acute lymphoblastic leukaemia under hospital exemption. ARI-002, a BCMA-CAR-T cell therapy developed by the group is currently being tested in a phase I clinical trial.

The group is currently focused on: (a) understanding the obstacles that lead to CAR therapy failure in solid tumors and hematologic malignancies and (b) developing next-generation CAR-T cell therapies with enhanced therapeutic potential.

RESEARCH LINES

- CAR-T and CAR-NK therapy for the treatment of hematological malignancies.

- CAR-T cell therapies for solid tumours.

- Mechanisms of antitumor cytotoxicity of immune cells (NK and T lymphocytes).

- Allogeneic stem cell transplantation: graft versus host disease (GVHD) and infectious complications.

PUBLICATIONS

Originals / I.F.: 126.194

1. Guedan S, Madar A, Casado-Medrano V, Shaw C, Wing A, Liu F, Young RM, June CH, Posey AD . **Single residue in CD28-costimulated CAR-T cells limits long-term persistence and antitumor durability.** *Journal of Clinical Investigation.* 130(6):3087-3097. I.F.: 11.864

2. Sanz J, Galimard JE, Labopin M, Afanasyev B, Angelucci E, Ciceri F, Blaise D, Cornelissen JJ, Meijer E, Diez-Martin JL, Koc Y, Rovira M, Castagna L, Savani B, Ruggeri A, Nagler A, Mohty M, Acute Leukemia Working Party of the European Society for Blood and Marrow Transplantation (EBMT). **Post-transplant cyclophosphamide after matched sibling, unrelated and haploidentical donor transplants in patients with acute myeloid leukemia: a comparative study of the ALWP EBMT.** *Journal of Hematology & Oncology.* 13(1):46. I.F.: 11.059

3. Brissot, Eolia; Labopin, Myriam; Moiseev, Ian; Cornelissen, J. J.; Meijer, Ellen; Van Gorkom, Gwendolyn; Rovira, Montserrat; Ciceri, Fabio; Griskevicius, Laimonas; Blaise, Didier; Forcade, Edouard; Mistrik, Martin; Mielke, Stephan; Bulabois, Claude Eric; Niittyvuopio, Riitta; Deconinck, Eric; Ruggeri, Annalisa; Sanz, Jaime; Spyridonidis, Alexandros; Savani, Bipin; Giebel, Sebastian; Nagler, Arnon; Mohty, Mohamad. **Post-transplant cyclophosphamide versus antithymocyte globulin in patients with acute myeloid leukemia in first complete remission undergoing allogeneic stem cell transplantation from 10/10 HLA-matched unrelated donors**. *Journal of Hematology & Oncology.* 13(1):87. I.F.: 11.059

4. Lozano E, Mena MP, Díaz T, Martin-Antonio B, León S, Rodríguez-Lobato LG, Oliver-Caldés A, Cibeira MT, Bladé J, Prat A, Rosiñol L, Fernández de Larrea C. **Nectin-2 expression on malignant plasma cells is associated with better response to TIGIT blockade in multiple myeloma.** *Clinical Cancer Research.* 26(17):4688-4698. I.F.: 10.107

5. Viasus D, Puerta-Alcalde P, Cardozo C, Suárez-Lledó M, Rodríguez-Núñez O, Morata L, Fehér C, Marco F, Chumbita M, Moreno-García E, Fernández-Avilés F, Gutiérrez-Garcia G, Martínez JA, Mensa J, Rovira M, Esteve J, Soriano A, Garcia-Vidal C. **Predictors of multidrug-resistant Pseudomonas aeruginosa in neutropenic patients with bloodstream infection.** *Clinical Microbiology And Infection.* 26(3):345-350. I.F.: 7.117

6. Penack, Olaf; Peczynski, Christophe; van der Werf, Steffie; Finke, Juergen; Ganser, Arnold; Schoemans, Helene; Pavlu, Jiri; Niittyvuopio, Riitta; Schroyens, Wilfried; Kaynar, Leylagul; Blau, Igor W; van der Velden, Walter; Sierra, Jorge; Cortelezzi, Agostino; Wulf, Gerald; Turlure, Pascal; Rovira, Montserat; Ozkurt, Zubeydenur; Pascual-Cascon, Maria J; Moreira, Maria C; Clausen, Johannes; Greinix, Hildegard; Duarte, Rafael F; Basak, Grzegorz W. **Association of uric acid levels before start of conditioning with mortality after allogeneic hematopoietic stem cell transplantation - a prospective, non-interventional study of the EBMT Transplant Complication Working Party.** *Haematologica.* 105(7):1977-1983. I.F.: 7.116

7. Penack O., Peczynski C., van der Werf S., Finke J., Ganser A., Schoemans H., Pavlu J., Niittyvuopio R., Schroyens W., Kaynar L., Blau I.W., van der Velden W.J.F.M., Sierra J., Cortelezzi A., Wulf G., Turlure P., Rovira M., Ozkurt Z., Pascual-Cascon M.J., Moreira M.C., Clausen J., Greinix H., Duarte R.F., Basak G.W. **Association of Serum Ferritin Levels Before Start of Conditioning With Mortality After alloSCT – A Prospective, Non-interventional Study of the EBMT Transplant Complications Working Party.** *Frontiers In Immunology.* 11:586. I.F.: 5.085

8. Castella M; Caballero-Baños M; Ortiz-Maldonado V; González-Navarro EA; Suñé G; Antoñana-Vidósola A; Boronat A; Marzal B; Millán L; Martín-Antonio B; Cid J; Lozano M; García E; Tabera J; Trias E; Perpiña U; Canals JM; Baumann T; Benítez-Ribas D; Campo E; Yagüe J; Urbano-Ispizua Á; Rives S; Delgado J; Juan M. **Point-of-care CAR T-cell production (ARI-0001) using a closed semi-automatic bioreactor: Experience from an academic phase i clinical trial.** *Frontiers in Immunology.* 11(482):482. I.F.: 5.085

9. Gutiérrez-García G; Villarreal J; Garrote M; Rovira M; Blasco M; Suárez-Lledó M; Rodríguez-Lobato LG; Charry P; Rosiñol L; Marín P; Pedraza A; Solano MT; Ramos C; de Llobet N; Lozano M; Cid J; Martínez C; Poch E; Carreras E; Urbano-Ispizua Á; Fernández-Avilés F; Pereira A; Quintana LF. **Impact of severe acute kidney injury and chronic kidney disease on allogeneic hematopoietic cell transplant recipients: a retrospective single center analysis.** *Bone Marrow Transplantation.* 55(7):1264-1271. I.F.: 4.725

10. Puerta-Alcalde P; Cardozo C; Marco F; Suárez-Lledó M; Moreno E; Morata L; Fernández-Avilés F; Gutiérrez-Garcia G; Chumbita M; Rosiñol L; Martínez JA; Martínez C; Mensa J; Urbano Á; Rovira M; Soriano A; Garcia-Vidal C. **Changing epidemiology of bloodstream infection in a 25-years hematopoietic stem cell transplant program: current challenges and pitfalls on empiric antibiotic treatment impacting outcomes.** *Bone Marrow Transplantation.* 55(3):603-612. I.F.: 4.725

11. Martinez-Sanchez J; Palomo M; Torrama-de-Moix S; Moreno-Castaño AB; Rovira M; Gutiérrez-García G; Fernández-Avilés F; Escolar G; Penack O; Rosiñol L; Carreras E; Diaz-Ricart M. **The induction strategies administered in the treatment of multiple myeloma exhibit a deleterious effect on the endothelium.** *Bone Marrow Transplantation.* 55(12):2270-2278. I.F.: 4.725

12. Gutierrez-Garcia, Gonzalo; Rovira, Montserrat; Arab, Nacira; Gallego, Cristina; Sanchez, Joan; Angeles Alvarez, Maria; Ayora, Pilar; Domenech, Ariadna; Borras, Nuria; Gerardo Rodriguez-Lobato, Luis; Rosinol, Laura; Marin, Pedro; Pedraza, Alexandra; Martinez-Roca, Alexandra; Carcelero, Esther; Dolores Herrera, Maria; Teresa Solano, Maria; Ramos, Carla; de Llobet, Noemi; Serrahima, Anna; Lozano, Miquel; Cid, Joan; Martinez, Carmen; Suarez-Lledo, Maria; Urbano-Ispizua, Alvaro; Fernandez-Aviles, Francesc. **A reproducible and safe at-home allogeneic haematopoietic cell transplant program: first experience in Central and Southern Europe.** *Bone Marrow Transplantation.* 55(5):965-973. I.F.: 4.725

13. Peric Z; Labopin M; Peczynski C; Polge E; Cornelissen J; Carpenter B; Potter M; Malladi R; Byrne J; Schouten H; Fegueux N; Socié G; Rovira M; Kuball J; Gilleece M; Giebel S; Nagler A; Mohty M. **Comparison of reduced-intensity conditioning regimens in patients with acute lymphoblastic leukemia >45 years undergoing allogeneic stem cell transplantation—a retrospective study by the Acute Leukemia Working Party of EBMT.** *Bone Marrow Transplantation.* 55(8):1560-1569. I.F.: 4.725

14. Palomo, Marta; Vera, Manel; Martin, Susana; Torramade-Moix, Sergi; Martinez-Sanchez, Julia; Moreno, Ana Belen; Carreras, Enric; Escolar, Gines; Cases, Aleix; Diaz-Ricart, Maribel. **Up-regulation of HDACs, a harbinger of uraemic endothelial dysfunction, is prevented by defibrotide.** *Journal of Cellular and Molecular Medicine.* 24(2):1713-1723. I.F.: 4.486

15. Schmidt-Hieber M; Engelhard D; Ullmann A; Ljungman P; Maertens J; Martino R; Rovira M; Shaw P; Robin C; Faraci M; Byrne J; Schäfer-Eckart K; Einsele H; Faber E; Rigacci L; Saccardi R; Balaguer-Rosello A; Isaksson C; Christopeit M; Tridello G; Wang J; Knelange N; Mikulska M; Cesaro S; Styczynski J. **Central nervous system disorders after hematopoietic stem cell transplantation: a prospective study of the Infectious**

Diseases Working Party of EBMT. *Journal of Neurology*. 267(2):430-439. I.F.: 3.956

16. Berro M, Chhabra S, Piñana JL, Arbelbide J, Rivas MM, Basquiera AL, Vitriu A, Requejo A, Milovic V, Yantorno S, Bentolila G, Garcia JJ, Castro M, Palmer S, Saslavsky M, Duarte P, Cerutti A, Jarchum G, Tisi Baña M, Thapa B, Solano C, Sureda A, Rovira M, Shaw BE, Kusminsky G, Grupo Argentino de Trasplante de Médula Ósea y Terapia Celular (GATMO-TC). **Predicting mortality after autologous transplant: Development of a novel risk score.** *Biology of Blood and Marrow Transplantation*. 26(10):1828-1832. I.F.: 3.853

17. Ruggeri A, Labopin M, Battipaglia G, Chiusolo P, Tischer J, Diez-Martin JL, Bruno B, Castagna L, Moiseev IS, Vitek A, Rovira M, Ciceri F, Bacigalupo A, Nagler A, Mohty M. **The timing of post-transplant cyclophosphamide administration in haploidentical transplantation: a comparative study on behalf of the ALWP of the EBMT.** *Biology of Blood and Marrow Transplantation*. 26(10):1915-1922. I.F.: 3.853

18. Im A, Rashidi A, Wang T, Hemmer M, MacMillan ML, Pidala J, Jagasia M, Pavletic S, Majhail NS, Weisdorf D, Abdel-Azim H, Agrawal V, Al-Homsi AS, Aljurf M, Askar M, Auletta JJ, Bashey A, Beitinjaneh A, Bhatt VR, Byrne M, Cahn JY, Cairo M, Castillo P, Cerny J, Chhabra S, Choe H, Ciurea S, Daly A, Perez MAD, Farhadfar N, Gadalla SM, Gale R, Ganguly S, Gergis U, Hanna R, Hematti P, Herzig R, Hildebrandt GC, Lad DP, Lee C, Lehmann L, Lekakis L, Kamble RT, Kharfan- Dabaja MA, Khandelwal P, Martino R, Murthy HS, Nishihori T, O'Brien TA, Olsson RF, Patel SS, Perales MA, Prestidge T, Qayed M, Romee R, Schoemans H, Seo S, Sharma A, Solh M, Strair R, Teshima T, Urbano-Ispizua A, Van der Poel M, Vij R, Wagner JL, William B, Wirk B, Yared JA, Spellman SR, Arora M, Hamilton BK. **Risk Factors for Graft-versus-Host Disease in Haploidentical Hematopoietic Cell Transplantation Using Post-Transplant Cyclophosphamide.** *Biology of Blood and Marrow Transplantation*. 26(8):1459-1468. I.F.: 3.853

19. Martínez C; Boumendil A; Romejko-Jarosinska J; Anagnostopoulos A; Faber E; Poiré X; Yakoub-Agha I; Akhtar S; Gurman G; Pavone V; Halaburda K; Sousa AB; Ghesquières H; Finel H; Khvedelidze I; Montoto S; Sureda A. **Second autologous stem cell transplantation for relapsed/refractory Hodgkin lymphoma after a previous autograft: a study of the lymphoma working party of the EBMT.** *Leukemia & Lymphoma*. 61(12):1-8. I.F.: 2.969

20. Rodríguez-Lobato LG, Martínez-Roca A, Moreno DF, Gutiérrez-García G, Suárez-Lledó M, Rovira M, Martínez C, Rosiñol L, Almeida Jorge AS, Pedraza A, Cardozo C, Puerta-Alcalde P, Garcia-Vidal C, Marín P, Cid J, Lozano M, Gallego C, Hernando A, Segura S, Urbano-Ispizua Á, Fernández-Avilés F . **Impact of intensifying primary antibiotic prophylaxis in at-home autologous stem cell transplantation program for lymphoma patients.** *Leukemia & Lymphoma*. 61(7):1565-1574. I.F.: 2.969

21. Cid, Joan; Castillo, Carlos; Marin, Pedro; Carbasse, Gloria; Herrera, Dolores; Monfort, Nuria; Fernandez-Aviles, Francesc; Gutierrez-Garcia, Gonzalo; Martinez, Carmen; Rosinol, Laura; Suarez-Lledo, Maria; Rovira, Montserrat; Urbano-Ispizua, Alvaro; Lozano, Miquel. **Increased collection efficiency of CD34+cells after mobilization with preemptive use of plerixafor followed by leukocytapheresis on the same day**. *Transfusion*. 60(4):779-785. I.F.: 2.800

22. Rodríguez-Lobato LG, Martínez-Roca A, Castaño-Díez S, Palomino-Mosquera A, Gutiérrez-García G, Pedraza A, Suárez-Lledó M, Rovira M, Martínez C, Fernández de Larrea C, Cibeira MT, Rosiñol L, Lozano E, Marín P, Cid J, Lozano M, Moreno-Castaño AB, Palomo M, Díaz-Ricart M, Gallego C, Hernando A, Segura S, Carreras E, Urbano-Ispizua Á, Bladé J, Fernández-Avilés F . **The avoidance of G-CSF and the addition of prophylactic corticosteroids after autologous stem cell transplantation for multiple myeloma patients appeal for the at-home setting to reduce readmission for neutropenic fever.** *Plos One*. 15(11):e0241778. I.F.: 2.740

23. Nieto-Nicolau N; Martín-Antonio B; Müller-Sánchez C; Casaroli-Marano RP. **In vitro potential of human mesenchymal stem cells for corneal epithelial regeneration.** *Regenerative Medicine*. 15(3):1409-1426. I.F.: 2.598

Review / I.F.: 20.852

1. Bachiller M; Battram AM; Perez-Amill L; Martín-Antonio B. **Natural killer cells in immunotherapy: Are we nearly there?** *Cancers*. 12(11):3139. I.F.: 6.126

2. Rodriguez-Garcia, Alba; Palazon, Asis; Noguera-Ortega, Estela; Powell, Daniel J, Jr; Guedan, Sonia. **CAR-T Cells Hit the Tumor Microenvironment: Strategies to Overcome Tumor Escape.** *Frontiers in Immunology*. 11(1109). I.F.: 5.085

3. Sandler RD; Tattersall RS; Schoemans H; Greco R; Badoglio M; Labopin M; Alexander T; Kirgizov K; Rovira M; Saif M; Saccardi R; Delgado J; Peric Z; Koenecke C; Penack O; Basak G; Snowden JA. **Diagnosis and Management of Secondary HLH/MAS Following HSCT and CAR-T Cell Therapy in Adults; A Review of the Literature and a Survey of Practice Within EBMT Centres on Behalf of the Autoimmune Diseases Working Party (ADWP) and Transplant Complications Working Party (TCWP).** *Frontiers in Immunology*. 11:524. I.F.: 5.085

4. Battram AM; Bachiller M; Martín-Antonio B. **Senescence in the development and response to cancer with immunotherapy: A double-edged sword. International.** *Journal of Molecular Sciences*. 21(12):1-31. I.F.: 4.556

Letters / I.F.: 22.519

1. Urbano-Ispizua A; Delgado J. **Welcome to the CART cocktail reception.** *Blood*. 135(1):3-3. I.F.: 17.794

2. Rovira M; Villamor N; Cobo F; Fernández-Aviles F; López-Guerra ML; Guijarro F; Baumann T; Montserrat E. **Is chronic lymphocytic leukemia curable? A clinical case relapsing 21 years after allogeneic stem-cell transplantation.** *Bone Marrow Transplantation*. 55(9):1860-1861. I.F.: 4.725

Case Reports / I.F.: 21.317

1. Ruiz de Morales JG, Cordero-Coma M, Rovira M, Calleja-Antolin S, Espinosa G, de Las Heras N . **Autologous Hematopoietic Stem Cell Transplantation for Susac Syndrome.** *Annals of Internal Medicine*. 173(4):315-317. I.F.: 21.317

Clinical Guidelines / I.F.: 13.495

1. Yakoub-Agha I, Chabannon C, Bader P, Basak GW, Bonig H, Ciceri F, Corbacioglu S, Duarte RF, Einsele H, Hudecek M, Kersten MJ, Köhl U, Kuball J, Mielke S, Mohty M, Murray J, Nagler A, Robinson S, Saccardi R, Sanchez-Guijo F, Snowden JA, Srour M, Styczynski J, Urbano-Ispizua A, Hayden PJ, Kröger N. **Management of adults and children undergoing CAR t-cell therapy: best practice recommendations of the European Society for Blood and Marrow Transplantation (EBMT) and the Joint**

Accreditation Committee of ISCT and EBMT (JACIE). *Haematologica.* 105(2):297-316. I.F.: 7.116

2. Sharrack B; Saccardi R; Alexander T; Badoglio M; Burman J; Farge D; Greco R; Jessop H; Kazmi M; Kirgizov K; Labopin M; Mancardi G; Martin R; Moore J; Muraro P; Rovira M; Sormani M; Snowden J; Snowden J; Saccardi R; McGrath E; Bambi F; Sanchez-Guijo F; Worel N; Snowden J; Alexander T; Badolglio M; Abinun M; Arnold R; Brierley C; Castilla-Llorente C; Cooper N; Daikeler T; del Papa N; Farge D; Finke J; Greco R; Hagglund H; Henes J; Hiepe F. **Autologous haematopoietic stem cell transplantation and other cellular therapy in multiple sclerosis and immune-mediated neurological diseases: updated guidelines and recommendations from the EBMT Autoimmune Diseases Working Party (ADWP) and the Joint Accreditation Committee of EBMT and ISCT (JACIE).** *Bone Marrow Transplantation.* 55(2):283-306. I.F.: 4.725

3. Gudiol C, Aguilar-Guisado M, Azanza JR, Candel FJ, Cantón R, Carratalà J, Garcia-Vidal C, Jarque I, Lizasoain M, Gil-Bermejo JM, Ruiz-Camps I, Sánchez-Ortega I, Solano C, Suárez-Lledó M, Vázquez L, de la Cámara R . **Executive summary of the consensus document of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC), the Spanish Network for Research in Infectious Diseases (REIPI) and the Spanish Society of Haematology and Haemotherapy (SEHH) on the management of febrile neutropenia in patients with hematological malignancies.** *Enfermedades Infecciosas y Microbiología Clínica.* 38(4):174-181. I.F.: 1.654

GRANTS FOR RESEARCH IN PROGRESS

Guedan S. **Células T genéticamente modificadas para expresar receptores quiméricos de antígeno para el tratamiento de tumores sólidos.**
Sponsored by: Agencia Estatal de Investigación. AEI_PID2019-109546RA-I00
Duration: 01/06/2020-31/05/2023

Guedan S. **CAR-T cells as drug delivery agents for the tratment of solid tumors.**
Sponsored by: Fundación científica Asociación Española contra el Cáncer. AECC_Lab20
Duration: 01/12/2020-30/11/2023

Guedan S. **Exhaustion-resistant Chimeric Antigen Receptor (CAR)-modified T cells for the treatment of solid tumors.**
Sponsored by: Gilead Sciences (INC). INT_GILEAD_KITE_ISR_2019
Duration: 25/06/2020-24/06/2023

Martín B, Urbano-Ispizua Á. **Modificación de la comunicación intercelular entre células inmunes y de mieloma para mejorar la sensibilidad a inmunoterapia y tratamientos convencionales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01043
Duration: 01/01/2018-31/12/2020

DOCTORAL THESIS

Martín B, Urbano Á. **Inmunoterapia dirigida: estudio preclínico de la eficacia anti-tumoral de CAR-T y CAR-CB-NK para el tratamiento de neoplasias hematológicas de célula B madura.**
PhD student: Lorena Perez Amill



ANNUAL
SCIENTIFIC REPORT
2020

TRANSVERSAL AREA

TRANSVERSAL RESEARCH GROUPS

© Laura Sánchez Salom

TRANSVERSAL RESEARCH GROUPS

T.1 **Clinical pharmacology**
Gonzalo Calvo

T.2 **Primary healthcare transversal research group**
Antoni Sisó

T.3 **Research in nursing**
Adelaida Zabalegui

T.1 Clinical pharmacology

LOCATION
Casanova 150 (floor 2)
Mallorca 183
(rooms 3, 10, 78, 86, 89, 90, 91)

KEYWORDS
1. **Clinical trials, design and methodology**
2. **Ethics in clinical research**
3. **Drug regulation**
4. **Pharmacoepidemiology**
5. **Pharmacovigilance**
6. **Advanced therapies**

GROUP INVOLVED IN
ECRIN
SCReN

Original publications

TOTAL	31
IF	190,66
Mean IF	6,15
Q1	65%
D1	39%
MA	3%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



TEAM LEADER
Gonzalo Calvo (HCB)
T. 93 227 93 28
gcalvo@clinic.cat

RESEARCHERS
Joan Albert Arnaiz (HCB)
Ferran Torres (HCB)

TECHNICIANS
Alexandre Bernalte (FCRB)
Georgina Casanovas (FCRB)
Anna Cruceta (FCRB)
Gemma Domenech (IDIBAPS)
Judit Pich (FCRB)
Jose Rios (IDIBAPS)
Sandra Serrano (FCRB)
Sara Varea (HCB)

PROBLEM, APPROACH & IMPACT

- Ethics in clinical research: Search for quality and the extent and context of application of current ethical principles in clinical research projects. It is developed in group studies and as support to researchers offered by the CEIm Technical Secretary, integrated within the Drug Research Ethics Committee (Àrea del Medicament of Hospital Clínic of Barcelona).

- Clinical trials, design, methodology and statistical support for clinical research: Optimization of methodological and statistical support for clinical research, both in an academic scope and in studies promoted by the pharmaceutical industry. It is developed within the framework of the Clinical Trials Unit (CTU) and the IDIBAPS Medical Statistics Platform.

- Active collaboration in national clinical research networks, such as SCReN, or international networks, such as ECRIN, to carry out multicenter clinical research projects on a national and international scale.

- Pharmacovigilance: Research on the molecular and pathophysiological mechanisms of adverse drug reactions and implementation of active pharmacovigilance systems that allow optimizing the detection of adverse drug reactions in a context of real clinical practice.

- Pharmacogenetics and pharmacogenomics: Development of studies to relate genetics with the activity and response to the action of drugs.

- Advanced Therapies: Coordination of the transfer of basic research in advanced therapies from the Hospital Clínic to its clinical application, through the scientific evaluation of the projects, the alignment of efforts and the evaluation and distribution of available resources.

RESEARCH LINES

- CEIm - Ethics in clinical research.

- CTU - Clinical trials, design and methodology.

- MedStats - Statistical support of clinical research.

- FV - Pharmacovigilance and pharmacoepidemiology.

- Pharmacogenetics and pharmacogenomics.

- CTA - Advanced therapies.

PUBLICATIONS

Originals / I.F.: 190.655

1. Rodríguez-Tajes S, Pocurull A, Castillo J, Casanova G, Vega L, Lens S, Mariño Z, Londoño MC, Forner A, Torres F, Forns X. **Hepatitis C-related cirrhosis will be a marginal cause of hospital admissions in the near future.** *Journal of Hepatology.* 73(6):1360-1367. I.F.: 20.582

2. Trebicka J, Gu W, Ibáñez-Samaniego L, Hernández-Gea V, Pitarch C, Garcia E, Procopet B, Giráldez Á, Amitrano L, Villanueva C, Thabut D, Silva-Junior G, Martinez J, Genescà J, Bureau C, Llop E, Laleman W, Palazon JM, Castellote J, Rodrigues S, Gluud L, Ferreira CN, Barcelo R, Cañete N, Rodríguez M, Ferlitsch A, Mundi JL, Gronbaek H, Hernández-Guerra M, Sassatelli R, Dell'Era A, Senzolo M, Abraldes JG, Romero-Gómez M, Zipprich A, Casas M, Masnou H, Primignani M, Weiss E, Catalina MV, Erasmus HP, Uschner FE, Schulz M, Brol MJ, Praktiknjo M, Chang J, Krag A, Nevens F, Calleja JL, Robic MA, Conejo I, Albillos A, Rudler M, Alvarado E, Guardascione MA, Tantau M, Bosch J, Torres F, Pavesi M, Garcia-Pagán JC, Jansen C, Bañares R, International Variceal Bleeding Observational Study Group and Baveno Cooperation. **Rebleeding and mortality risk are increased by ACLF but reduced by pre-emptive TIPS**. *Journal of Hepatology*. 73(5):1082-1091. I.F.: 20.582

3. Alvarado-Tapias E, Ardevol A, Garcia-Guix M, Montañés R, Pavel O, Cuyas B, Graupera I, Brujats A, Vilades D, Colomo A, Poca M, Torras X, Guarner C, Concepción M, Aracil C, Torres F, Villanueva C. **Short-term hemodynamic effects of β-blockers influence survival of patients with decompensated cirrhosis.** *Journal of Hepatology*. 73(4):829-841. I.F.: 20.582

4. Antonell A, Tort-Merino A, Ríos J, Balasa M, Borrego-Écija S, Auge JM, Muñoz-García C, Bosch B, Falgàs N, Rami L, Ramos-Campoy O, Blennow K, Zetterberg H, Molinuevo JL, Lladó A, Sánchez-Valle R. **Synaptic, axonal damage and inflammatory cerebrospinal fluid biomarkers in neurodegenerative dementias.** *Alzheimers & Dementia*. 16(2):262-272. I.F.: 17.127

5. Pose E, Napoleone L, Amin A, Campion D, Jimenez C, Piano S, Roux O, Uschner FE, de Wit K, Zaccherini G, Alessandria C, Angeli P, Bernardi M, Beuers U, Caraceni P, Durand F, Mookerjee RP, Trebicka J, Vargas V, Andrade RJ, Carol M, Pich J, Ferrero J, Domenech G, Llopis M, Torres F, Kamath PS, Abraldes JG, Solà E, Ginès P. **Safety of two different doses of simvastatin plus rifaximin in decompensated cirrhosis (LIVERHOPE-SAFETY): a randomised, double-blind, placebo-controlled, phase 2 trial.** *Lancet Gastroenterology & Hepatology*. 5(1):31-41 I.F.: 14.789

6. Rudilosso S, Laredo C, Vera V, Vargas M, Renú A, Llull L, Obach V, Amaro S, Urra X, Torres F, Jiménez-Fàbrega FX, Chamorro Á. **Acute Stroke Care Is at Risk in the Era of COVID-19: Experience at a Comprehensive Stroke Center in Barcelona**. *Stroke*. 51(7):1991-1995. I.F.: 7.190

7. Sánchez-Izquierdo N; Perlaza P; Pagès M; Buxó E; Rios J; Rubello D; Colletti P; Mayoral M; Casanueva S; Fernández-Esparrach G; Ginés A; Fuster D. **Assessment of Response to Neoadjuvant Chemoradiotherapy by 18F-FDG PET/CT in Patients With Locally Advanced Esophagogastric Junction Adenocarcinoma.** *Clinical Nuclear Medicine*. 45(1):38-43. I.F.: 6.622

8. Gil-López F, Boget T, Manzanares I, Donaire A, Conde-Blanco E, Baillés E, Pintor L, Setoaín X, Bargalló N, Navarro J, Casanova J, Valls J, Roldán P, Rumià J, Casanovas G, Domenech G, Torres F, Carreño M. **External trigeminal nerve stimulation for drug resistant epilepsy: a randomized controlled trial.** *Brain Stimulation*. 13(5):1245-1253. I.F.: 6.565

9. Ertekin SS, Podlipnik S, Ribero S, Molina R, Rios J, Carrera C, Malvehy J, Puig S. **Monthly changes in serum levels of S100B protein as a predictor of metastasis development in high-risk melanoma patients.** *Journal of the European Academy of Dermatology and Venereology*. 34(7):1482-1488. I.F.: 5.248

10. Díaz-González Á; Sapena V; Boix L; Brunet M; Torres F; LLarch N; Samper E; Millán O; Corominas J; Iserte G; Sanduzzi-Zamparelli M; da Fonseca LG; Darnell A; Belmonte E; Forner A; Ayuso C; Bruix J; Reig M. **Pharmacokinetics and pharmacogenetics of sorafenib in patients with hepatocellular carcinoma: Implications for combination trials.** *Liver International*. 40(10):2476-2488. I.F.: 5.175

11. Blanco I, Valeiro B, Torres-Castro R, Barberán-García A, Torralba Y, Moisés J, Sebastián L, Osorio J, Rios J, Gimeno-Santos E, Roca J, Barberà JA. **Effects of Pulmonary Hypertension on Exercise Capacity in Patients With Chronic Obstructive Pulmonary Disease.** *Archivos de Bronconeumologia*. 56(19):499-505. I.F.: 4.957

12. Piñeiro GJ, Rovira J, Montagud-Marrahí E, Torregrosa JV, Ríos J, Cucchiari D, Ugalde-Altamirano J, Ventura-Aguiar P, Gelpi R, Palou E, Colmenero J, Navasa M, Diekmann F, Esforzado N. **Kidney graft outcomes in high immunological risk simultaneous liver-kidney transplants.** *Liver Transplantation*. 26(4):517-527. I.F.: 4.570

13. Ruiz P, Millán O, Ríos J, Díaz A, Sastre L, Colmenero J, Crespo G, Brunet M, Navasa M. **MicroRNAs 155-5p, 122-5p and 181a-5p identify patients with graft dysfunction due to T-cell mediated rejection after liver transplantation.** *Liver Transplantation*. 26(10):1275-1286. I.F.: 4.570

14. Cucchiari, David; Molina-Andujar, Alicia; Montagud-Marrahi, Enrique; Revuelta, Ignacio; Rovira, Jordi; Ventura-Aguiar, Pedro; Pineiro, Gaston J; De Sousa-Amorim, Erika; Esforzado, Nuria; Cofan, Frederic; Torregrosa, Jose-Vicente; Ugalde-Altamirano, Jessica; Ricart, M Jose; Centellas-Perez, Francisco J; Sole, Manel; Martorell, Jaume; Rios, Jose; Campistol, Josep M; Diekmann, Fritz; Oppenheimer, Frederic. **Use of De Novo mTOR Inhibitors in Hypersensitized Kidney Transplant Recipients: Experience From Clinical Practice.** *Transplantation*. 104(8):1686-1694. I.F.: 4.546

15. Correll CU, Litman RE, Filts Y, Llaudó J, Naber D, Torres F, Martínez J. **Efficacy and safety of once-monthly Risperidone ISM® in schizophrenic patients with an acute exacerbation**. *Npj Schizophria*. 6(1):37. I.F.: 4.304

16. Martínez-Pinteño A; García-Cerro S; Mas S; Torres T; Boloc D; Rodríguez N; Lafuente A; Gassó P; Arnaiz JA; Parellada E. **The positive allosteric modulator of the mGlu2 receptor JNJ-46356479 partially improves neuropathological deficits and schizophrenia-like behaviors in a postnatal ketamine mice model.** *Journal of Psychiatric Research*. 126:8-18. I.F.: 3.745

17. Cucchiari D; Ríos J; Molina-Andujar A; Montagud-Marrahi E; Revuelta I; Ventura-Aguiar P; Piñeiro GJ; De Sousa-Amorim E; Esforzado N; Cofán F; Torregrosa JV; Ugalde-Altamirano J; Ricart MJ; Rovira J; Torres F; Solè M; Campistol JM; Diekmann F; Oppenheimer F. **Combination of calcineurin and mTOR inhibitors in kidney transplantation: a propensity score analysis based on current clinical practice.** *Journal of Nephrology*. 33(3):601-610. I.F.: 3.484

18. Torres T, Boloc D, Rodríguez N, Blázquez A, Plana MT, Varela E, Gassó P, Martinez-Pinteño A, Lázaro L, Arnaiz JA, Mas S. **Response to fluoxetine in children and adolescents: a weighted gene**

co-expression network analysis of peripheral blood. American Journal of Translational Research. 12(5):2028-2040. I.F.: 3.375

19. de Hollanda, Ana; Lecube, Albert; Angel Rubio, Miguel; Sanchez, Enric; Vilarrasa, Nuria; Gregorio Oliva, Jose; Luisa Fernandez-Soto, Maria; Salas-Salvado, Jordi; Ballesteros-Pomar, Maria D; Ciudin, Andreea; Torres, Ferran; Vidal, Concepcion; Jose Morales, Maria; Valdes, Sergio; Pellitero, Silvia; Minambres, Inka; Masmiquel, Lluis; Goday, Albert; Suarez, Lorena; Flores, Liliam; Bueno, Marta; Caixas, Assumpta; Breton, Irene; Camara, Rosa; Olbeyra, Romina; Penso, Rona; Jose de la Cruz, Maria; Simo-Servat, Andreu; Maria Pereyra-Garcia, Francisca; Teresa Lopez-Mezquita, Elena; Gils, Anna; Fidilio, Enzamaria; Bandres, Orosia; Martinez, Angel; Abuin, Jose; Marques-Pamies, Montserrat; Tuneu, Laura; Arteaga, Magdalena; Castaner, Olga; Goni, Fernando; Arrizabalaga, Cristina; Antonio Botana, Manuel; Calanas, Alfonso; Rebollo, Angel. **New Metrics to Assess Type 2 Diabetes after Bariatric Surgery: The Time-Within-Remission Range.** *Journal of Clinical Medicine.* 9(4):1070. I.F.: 3.303

20. Ares O; León-Muñoz VJ; Castellet E; Pelfort X; Hinarejos P; Amillo JR; Ríos J; Torner P. **Translation and validation of the new knee society knee scoring system into Spanish: Spanish KSS translation.** *Knee Surgery Sports Traumatology Arthroscopy.* I.F.: 3.166

21. De Lacy FB; Roodbeen SX; Ríos J; Van Laarhoven J; Otero-Piñeiro A; Bravo R; Visser T; Van Poppel R; Valverde S; Hompes R; Sietses C; Castells A; Bemelman WA; Tanis PJ; Lacy AM. **Three-year outcome after transanal versus laparoscopic total mesorectal excision in locally advanced rectal cancer: A multicenter comparative analysis.** *Bmc Cancer.* 20(1):677. I.F.: 3.150

22. De Lacy FB; Taurà P; Arroyave MC; Trépanier JS; Ríos J; Bravo R; Ibarzabal A; Pena R; Deulofeu R; Lacy AM. **Impact of pneumoperitoneum on intra-abdominal microcirculation blood flow: an experimental randomized controlled study of two insufflator models during transanal total mesorectal excision: An experimental randomized multi-arm trial with parallel treatment design.** *Surgical Endoscopy and Other Interventional Techniques.* 34(10):4494-4503. I.F.: 3.149

23. Boloc D, Rodríguez N, Torres T, García-Cerro S, Parellada M, Saiz-Ruiz J, Cuesta MJ, Bernardo M, Gassó P, Lafuente A, Mas S, Arnaiz JA. **Identifying key transcription factors for pharmacogenetic studies of antipsychotics induced extrapyramidal symptoms.** *Psychopharmacology.* 237(7):2151-2159. I.F.: 3.130

24. Gassó P, Arnaiz JA, Mas S, Lafuente A, Bioque M, Cuesta MJ, Díaz-Caneja CM, García C, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Castro-Fornieles J, Mané A, Rodríguez N, Boloc D, Saiz-Ruiz J, Bernardo M, PEPs Group. **Association study of candidate genes with obesity and metabolic traits in antipsychotic-treated patients with first-episode psychosis over a 2-year period.** *Journal of Psychopharmacology.* 34(5):514-523. I.F.: 3.121

25. Diez AIG, Fuster D, Morata L, Torres F, Garcia R, Poggio D, Sotes S, Del Amo M, Isern-Kebschull J, Pomes J, Soriano A, Brugnara L, Tomas X. **Comparison of the diagnostic accuracy of diffusion-weighted and dynamic contrast-enhanced MRI with 18F-FDG PET/CT to differentiate osteomyelitis from Charcot neuro-osteoarthropathy in diabetic foot.** *European Journal of Radiology.* 132(109299):109299. I.F.: 2.687

26. Riquelme F, Muñoz C, Ausania F, Hessheimer AJ, Torres F, Calatayud D, Sandomenico R, García Pérez R, Ferrer J, Fuster J, García-Valdecasas JC, Fondevila C. **Laparoscopic versus open hemihepatectomy: comprehensive comparison of complications and costs at 90 days using a propensity method.** *Updates in Surgery.* 72(4):1041-1051. I.F.: 2.587

27. Coca-Martinez M, Lopez-Hernandez A, Montane-Muntane M, Arguis MJ, Gimeno-Santos E, Navarro-Ripoll R, Perdomo J, Lopez-Baamonde M, Rios J, Moises J, Sanz de la Garza M, Sandoval E, Romano B, Sebio R, Dana F, Martinez-Palli G. **Multimodal prehabilitation as strategy for reduction of postoperative complications after cardiac surgery: a randomised controlled trial protocol.** Bmj Open. 10(12):e039885. I.F.: 2.496

28. Sabater-Cruz N; Dotti-Boada M; Rios J; Carrion MT; Chamorro L; Sánchez-Dalmau BF; Casaroli-Marano RP. **Postoperative treatment compliance rate and complications with two different protocols after pterygium excision and conjunctival autografting.** *European Journal of Ophthalmology.* 1120672120917335. I.F.: 1.642

29. Isern-Kebschull J; Tomas X; García-Díez AI; Morata L; Moya I; Ríos J; Soriano A. **Value of multidetector computed tomography for the differentiation of delayed aseptic and septic complications after total hip arthroplasty.** *Skeletal Radiology.* 49(6):893-902. I.F.: 1.618

30. Masgoret, Paula; de Soto, Ines; Caballero, Angel; Rios, Jose; Gomar, Carmen. **Incidence of contralateral neurosensitive changes and persistent postoperative pain 6 months after mastectomy A prospective, observational investigation.** *Medicine.* 99(11):e19101. I.F.: 1.552

31. Arias-Guillén M; Masso E; Gomez M; Rodas L; Broseta J; Vera M; Rios J; Fontseré N; Maduell F. **Are Currently Used Bioimpedance Methods in Hemodialysis Comparable for Calculating Dialysis Dose?** *Therapeutic Apheresis and Dialysis.* 24(2):154-162. I.F.: 1.041

Review / I.F.: 8.329

1. Almeida HS, Mitjans M, Arias B, Vieta E, Ríos J, Benabarre A . **Genetic differences between bipolar disorder subtypes: A systematic review focused in bipolar disorder type Ii.** *Neuroscience and Biobehavioral Reviews.* 118:623-630. I.F.: 8.329

Letters / I.F.: 20.582

1. Sapena V, Rios J, Torres F, Mariño Z, Forns X, Bruix J, Reig M. **Reply to: "The reported 'clear cut time association between interferon-free treatment and HCC' is anything but clear cut".** *Journal of Hepatology.* 72(5):1036-1037. I.F.: 20.582

GRANTS FOR RESEARCH IN PROGRESS

Arnaiz JA. **Plataforma de unidades de investigación clínica y ensayos clínicos. Spanish Clinical Research Network (SCReN).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PT17/0017/0031
Duration: 01/01/2018-31/12/2020

Arnaiz JA. **Simvastatin and rifaximin as new therapy for patients with decompensated** cirrhosis.
Sponsored by: European Commission.
CE_H2020-SC1_16abr1s
Duration: 01/01/2017-31/12/2021

Arnaiz JA. **Evaluating a Combination of Immune-based Therapies to Achieve a Functional Cure of HIV Infection.**
Sponsored by: European Commission.
CE_H2020-SC1_16abr1s
Duration: 01/01/2017-31/12/2021

Arnaiz JA. **Optimizing response to Li treatment through personalized evaluation of individuals with bipolar I disorder: the R-LiNK initiative.**
Sponsored by: European Commission.
CE_H2020-SC1_17_2s
Duration: 01/01/2018-31/12/2022

Calvo G. **ORTHOpedic randomized clinical trial with expanded bone marrow MSC and bioceramics versus autograft in long bone nonUNIONs.**
Sponsored by: European Commission.
CE_H2020-SC1_16abr1s
Duration: 01/01/2017-31/12/2021

Calvo G. **A testing bed for the development of high-risk medical devices.**
Sponsored by: European Commission.
CE_H2020-NMBP-IND-20
Duration: 01/01/2019-28/02/2023

T.2 Primary healthcare transversal research group

LOCATION

EAP Les Corts
EAP Comte Borrell
EAP Casanova

KEYWORDS

1. **Primary healthcare**
2. **Chronic diseases**
3. **Cardiovascular diseases & Cardiovascular risk factors**
4. **Health technology assessment**
5. **Autoimmune & rheumatic diseases**

RELATED DISEASES

1. **Chronic diseases**
2. **Cardiovascular diseases**
3. **Autoimmune diseases**
4. **Digestive and liver diseases**
5. **Infectious diseases**

Original publications

TOTAL	19
I.F.	65,28
Mean I.F.	3,44
Q1	42%
D1	0%
MA	26%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Antoni Sisó Almirall (CAPSBE)
T. 93 227 99 24
asiso@clinic.cat

RESEARCHERS
Belchin Adriyanov (IDIBAPS)
Mª Carmen Alvira (CAPSBE)
Lluisa Benito (CAPSBE)
Marta Catalán (CAPSBE)
Laia Cayuelas (CAPSBE)
Joan Gené (CAPSBE)
Lluís González de Paz (CAPSBE)
Mireia López Poyato (CAPSBE)
Mireia Sans (CAPSBE)
Josep Miquel Sotoca (HCB)
Josep Maria Vilaseca (CAPSBE)

POST-DOCTORAL RESEARCHERS
Inma Grau (HCB)

PRE-DOCTORAL RESEARCHERS
Maria Antonieta Also (CAPSBE)
Cristina Colungo (UB)
Laia Gené (CAPSBE)
Carmen Herranz (CAPSBE)
Angela Martínez Pérez (CAPSBE)
Sònia Moreno (UB)
Aina Perelló (UB)
Ethel Sequeira (UB)

PROBLEM

Primary care is the patient's gateway to the healthcare system, and primary care centres are the areas where most of the population's health problems are solved.

It is an area where the relationship between patient, family doctor and reference nurse is crucial to preventing and curing diseases and promoting healthy habits.

APPROACH

The group conducts multidisciplinary and interdisciplinary research, essential for primary care professionals, since the daily life in their professional field requires a biological, psychological and social approach towards patients and their illnesses, both at the clinic and at home.

A comprehensive approach to the patient and long-term care throughout the patient's life allow the group to develop its own and/or collaborative studies to improve the knowledge of the population's characteristics and of diseases.

IMPACT

The research projects that the group has led have shown, among other things, that an abdominal aortic aneurysm (AAA) screening programme is viable, safe and feasible for early detection.

It has also proposed a new, one-hour blood pressure monitoring method to diagnose hypertension and classify sub-populations of hypertension. And it has found that an interdisciplinary and multifactorial intervention (with physical exercise, nutrition, polypharmacy review and social assessment) helps prevent fragility in pre-fragile patients and improves functional capacity, quality of life and adherence to the Mediterranean diet.

RESEARCH LINES

- 2.0. Health.
- Atherogenesis, risk factors and cardiovascular diseases.
- Chronic pain.
- Digestive and liver diseases.
- HIV infection-AIDS and other infectious diseases.
- Healthcare continuity and management of chronic diseases.
- Mental health, smoking and other addictions.
- The fragility-geriatrics-dependency-home care axis.

- Use of healthcare services.

- Use of medicines.

PUBLICATIONS

Originals / I.F.: 65.284

1. Sisó-Almirall A; Kostov B; Martínez-Carbonell E; Brito-Zerón P; Ramirez PB; Acar-Denizli N; Delicado P; González-Martínez S; Muñoz CV; Àreu JB; Ramos-Casals M. **The prevalence of 78 autoimmune diseases in Catalonia (MASCAT-PADRIS Big Data Project).** *Autoimmunity Reviews*. 19(2):102448. I.F.: 7.767

2. Díaz-Rizzolo D; Kostov B; López-Siles M; Serra A; Colungo C; González-de-Paz L; Martinez-Medina M; Sisó-Almirall A; Gomis R. **Healthy dietary pattern and their corresponding gut microbiota profile are linked to a lower risk of type 2 diabetes, independent of the presence of obesity.** *Clinical Nutrition*. 39(2):524-532. I.F.: 6.360

3. Brito-Zerón P; Melchor S; Seror R; Priori R; Solans R; Kostov B; Baldini C; Carubbi F; Callejas JL; Guisado-Vasco P; Hernández-Molina G; Pasoto SG; Valim V; Sisó-Almirall A; Mariette X; Carreira P; Ramos-Casals M; Members of the EULAR-SS Task Force Big Data Consortium who contributed to this study. **SARS-CoV-2 infection in patients with primary Sjögren syndrome: characterization and outcomes of 51 patients**. *Rheumatology*. I.F.: 5.606

4. Chiva-Blanch G; Jiménez C; Pinyol M; Herreras Z; Catalán M; Martínez-Huélamo M; Lamuela-Raventos RM; Sala-Vila A; Cofán M; Gilabert R; Jiménez A; Ortega E. **5-CIS-, trans-and total lycopene plasma concentrations inversely relate to atherosclerotic plaque burden in newly diagnosed type 2 diabetes subjects.** *Nutrients*. 12(6):1696. I.F.: 4.546

5. Grau-Corral I; Gascon P; Grajales FJ; Kostov B; Almirall AS. **Availability of Spanish-language medical apps in google play and the app store: Retrospective descriptive analysis using google tools.** *JMIR mHealth and uHealth*. 8(12):e17139. I.F.: 4.313

6. Baltaxe, Erik; Embid, Cristina; Aumatell, Eva; Martinez, Maria; Barberan-Garcia, Anael; Kelly, John; Eaglesham, John; Herranz, Carmen; Vargiu, Eloisa; Maria Montserrat, Josep; Roca, Josep; Cano, Isaac. **Integrated Care Intervention Supported by a Mobile Health Tool for Patients Using Noninvasive Ventilation at Home: Randomized Controlled Trial.** *JMIR Mhealth and Uhealth*. 8(4):e16395. I.F.: 4.313

7. Grau-Corral I; Jansà M; Gascon P; Lozano-Rubí R; Pantoja PE; Roca D; Aragunde Miguens V; Hidalgo-Mazzei D; Escarrabill J. **Mobile Health Projects in a High-Complexity Reference Hospital: Case Study.** *JMIR Mhealth Uhealth*. 8(1):e16247. I.F.: 4.313

8. Acar-Denizli, N; Horvath, I -F; Mandl, T; Priori, R; Vissink, A; Hernandez-Molina, G; Armagan, B; Praprotnik, S; Sebastian, A; Bartoloni, E; Rischmueller, M; Pasoto, S G; Nordmark, G; Nakamura, H; Fernandes Moca Trevisani, V; Retamozo, S; Carsons, S E; Maure-Noia, B; Sanchez-Berna, I; Lopez-Dupla, M; Fonseca-Aizpuru, E; Melchor Diaz, S; Vazquez, M; Diaz Cuiza, P E; de Miguel Campo, B; Ng, W -F; Rasmussen, A; Dong, X; Li, X; Baldini, C; Seror, R; Gottenberg, J -E; Kruize, A A; Sandhya, P; Gandolfo, S; Kwok, S -K; Kvarnstrom, M; Solans, R; Sene, D; Suzuki, Y; Isenberg, D A; Valim, V; Hofauer, B; Giacomelli, R; Devauchelle-Pensec, V; Atzeni, F; Gheita, T A; Morel, J; Izzo, R; Kalyoncu, U; Szanto, A; Olsson, P; Bootsma, H; Ramos-Casals, M; Kostov, B; Brito-Zeron, P; Sjogren Big Data Consortium. **Systemic phenotype related to primary Sjogren's syndrome in 279 patients carrying isolated anti-La/SSB antibodies**. *Clinical and Experimental Rheumatology*. 38(4):85-94. I.F.: 3.319

9. Brito-Zeron, P; Pasoto, S G; Robles-Marhuenda, A; Mandl, T; Vissink, A; Armagan, B; Praprotnik, S; Nocturne, G; Sebastian, A; Fernandes Moca Trevisani, V; Retamozo, S; Acar-Denizli, N; Wiland, P; Siso-Almirall, A; Bootsma, H; Mariette, X; Ramos-Casals, M; Kostov, B; Sjogren Big Data Consortium. **Autoimmune congenital heart block and primary Sjogren's syndrome: characterisation and outcomes of 49 cases.** *Clinical and Experimental Rheumatology*. 38(4):95-102. I.F.: 3.319

10. Martinez-Pérez A; Soriano-Pérez MJ; Salvador F; Gomez-Junyent J; Villar-Garcia J; Santin M; Muñoz C; González-Cordón A; Salas-Coronas J; Sulleiro E; Somoza D; Treviño B; Pecorelli R; Llaberia-Marcual J; Lozano-Serrano AB; Quinto L; Muñoz J; Requena-Méndez A; Strong-Semtsi Working Group OBOT. **Clinical Features Associated with Strongyloidiasis in Migrants and the Potential Impact of Immunosuppression: A Case Control Study**. *Pathogens*. 9(6):507. I.F.: 3.018

11. Risco E; Sauch G; Albero A; Acar-Denizli N; Zabalegui A; Kostov B; Amil P; Alonso A; Rios A; Martín J; Fabrellas N. **Spanish validation of the "User reported measure of care coordination" questionnaire for older people with complex, chronic conditions.** *International Journal of Environmental Research and Public Health*. 17(18):1-13. I.F.: 2.849

12. Siso-Almirall, Antoni; Kostov, Belchin; Mas-Heredia, Minerva; Vilanova-Rotllan, Sergi; Sequeira-Aymar, Ethel; Sans-Corrales, Mireia; Sant-Arderiu, Elisenda; Cayuelas-Redondo, Laia; Martinez-Perez, Angela; Garcia-Plana, Noemi; Anguita-Guimet, August; Benavent-Areu, Jaume. **Prognostic factors in Spanish COVID-19 patients: A case series from Barcelona.** *Plos One*. 15(8):e0237960. I.F.: 2.740

13. Manzanares I; Sevilla Guerra S; Lombraña M; Gil-López F; Conde-Blanco E; Zabalegui A; Pfäfflin M; May T; Kostov B; Moreno-Poyato A; Donaire A; Guio L; Beltran O; Cuzco C; Carreño M. **Spanish version of the Satisfaction with Epilepsy Care questionnaire: Adaptation and psychometric properties**. *Epilepsy & Behavior*. 102:106812. I.F.: 2.508

14. Windak, Adam; Frese, Thomas; Hummers, Eva; Klemenc Ketis, Zalika; Tsukagoshi, Sonia; Vilaseca, Josep; Vinker, Shlomo; Ungan, Mehmet. **Academic general practice/family medicine in times of COVID-19-Perspective of WONCA Europe.** *European Journal of General Practice*. 26(1):182-188. I.F.: 2.478

15. Cabré C, Colungo C, Vinagre I, Jansà M, Conget I. **Frequency and awareness of hypoglycemia in patients with Type 2 Diabetes treated with two or more insulin injections in primary care outpatient clinics.** *Primary Care Diabetes*. 14(2):168-172. I.F.: 2.052

16. González-De Paz L; Gálvez-Henández P; Navarro-Rubio MD. **Development and psychometric study of a simple instrument to assess patient communication and comprehension skills: the AsCkS.** *Family Practice*. 37(4):568-573. I.F.: 2.038

17. Rodríguez-Romero R; Herranz-Rodríguez C; Kostov B; Gené-Badia J; Sisó-Almirall A. **Intervention to reduce perceived loneliness in community-dwelling older people.** *Scandinavian Journal of Caring Sciences.* I.F.: 1.525

18. Alvira C; Cabrera E; Kostov B; Risco E; Farré M; Miguel S; Zabalegui A. **Validity and reliability of the Spanish caregiver reaction assessment scale for caregivers of people with dementia.** *International Journal of Nursing Practice.* e12848. I.F.: 1.133

19. Gene-Badia, Joan; Comice, Pierre; Belchin, Adriyanov; Angeles Erdozain, Maria; Caliz, Leticia; Torres, Susana; Rodriguez, Rocio. **Profiles of loneliness and social isolation in urban population.** *Atención Primaria.* 52(4):224-232. I.F.: 1.087

Review / I.F.: 1.087

1. Sequeira-Aymar E; diLollo X; Osorio-Lopez Y; Gonçalves A; Subirà C; Requena-Méndez A. **Recommendations for the screening for infectious diseases, mental health, and female genital mutilation in immigrant patients seen in Primary Care.** *Atención Primaria.* 52(3):193-205. I.F.: 1.087

Editorial / I.F.: 2.174

1. Batalla Martinez, Carme; Gene Badia, Joan; Mascort Roca, Juanjo. **What about primary care during the pandemic?** *Atención Primaria.* 52(9):598-599. I.F.: 1.087

2. Sequeira-Aymar E. **Migration and screenings.** *Atención Primaria.* 52(4):221-223. I.F.: 1.087

Clinical Guidelines / I.F.: 16.102

1. Ramos-Casals M, Brito-Zerón P, Bombardieri S, Bootsma H, De Vita S, Dörner T, Fisher BA, Gottenberg JE, Hernandez-Molina G, Kocher A, Kostov B, Kruize AA, Mandl T, Ng WF, Retamozo S, Seror R, Shoenfeld Y, Sisó-Almirall A, Tzioufas AG, Vitali C, Bowman S, Mariette X, EULAR-Sjögren Syndrome Task Force Group. **EULAR recommendations for the management of Sjögren's syndrome with topical and systemic therapies.** *Annals of the Rheumatic Diseases.* 79(1):3-18. I.F.: 16.102

Consortium Publications / I.F.: 10.27

1. Brito-Zerón P; Acar-Denizli N; Ng WF; Horváth IF; Rasmussen A; Seror R; Li X; Baldini C; Gottenberg JE; Danda D; Quartuccio L; Priori R; Hernandez-Molina G; Armagan B; Kruize AA; Kwok SK; Kvarnstrom M; Praprotnik S; Sene D; Gerli R; Solans R; Rischmueller M; Mandl T; Suzuki Y; Isenberg D; Valim V; Wiland P; Nordmark G; Fraile G; Bootsma H; Nakamura H; Giacomelli R; Devauchelle-Pensec V; Hofauer B; Bombardieri M; Trevisani VFM; Hammenfors D; Pasoto SG; Retamozo S; Gheita TA; Atzeni F; Morel J; Vollenweider C; Zeher M; Sivils K; Xu B; Bombardieri S; Sandhya P; De Vita S; Minniti A; Sánchez-Guerrero J; Kilic L; van der Heijden E; Park SH; Wahren-Herlenius M; Mariette X; Ramos-Casals M; Sjögren Big Data Consortium. **Epidemiological profile and north-south gradient driving baseline systemic involvement of primary Sjögren's syndrome.** *Rheumatology.* 59(9):2350-2359. I.F.: 5.606

2. Paz-Graniel I, Babio N, Becerra-Tomás N, Toledo E, Camacho-Barcia L, Corella D, Castañer-Niño O, Romaguera D, Vioque J, Alonso-Gómez ÁM, Wärnberg J, Martínez JA, Serra-Majem L, Estruch R, Tinahones FJ, Fernandez-Aranda F, Lapetra J, Pintó X, Tur JA, García-Rios A, Bueno-Cavanillas A, Gaforio JJ, Matía-Martín P, Daimiel L, Sánchez VM, Vidal J, Prieto-Sanchez L, Ros E, Razquin C, Mestres C, Sorli JV, Cuenca-Royo AM, Rios A, Torres-Collado L, Vaquero-Luna J, Pérez-Farinós N, Zulet MA, Sanchez-Villegas A, Casas R, Bernal-Lopez MR, Santos-Lozano JM, Corbella X, Mateos D, Buil-Cosiales P, Jiménez-Murcia S, Fernandez-Carrion R, Forcano-Gamazo L, López M, Sempere-Pascual MÁ, Moreno-Rodriguez A, Gea A, de la Torre-Fornell R, Salas-Salvadó J, PREDIMED-Plus Investigators. **Association between coffee consumption and total dietary caffeine intake with cognitive functioning: cross-sectional assessment in an elderly Mediterranean population**. *European Journal of Nutrition.* I.F.: 4.664

GRANTS FOR RESEARCH IN PROGRESS

González de Paz L. **Programa de Rehabilitación Cardíaca Centrada en el paciente post infarto agudo de miocardio: Ensayo Clínico Aleatorizado en la Atención Primaria de Salud**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI19
Duration: 01/01/2020-31/12/2022

T.3 Research in nursing

LOCATION
HCB building

KEYWORDS
1. **Older people**
2. **Chronic-care/Long-term care**
3. **Dementia**
4. **Best practice**
5. **Advance nursing practice**

RELATED DISEASES
1. **Dementia**
2. **Chronic diseases and ageing**

GROUP INVOLVED IN
AGAUR_SGR17: 01114

Original publications

TOTAL	14
IF	33,15
Mean IF	2,37
Q1	43%
D1	7%
MA	36%

IF = Impact Factor
MA = Main authorship (last or corresponding author)



GROUP LEADER
Adelaida Zabalegui (HCB)
T. 93 227 54 00 (Ext.: 3055)
azabaleg@clinic.cat

POST-DOCTORAL RESEARCHERS
Marta Farré (HCB)
Teresa Faura (HCB)
Ester Risco (HCB)
Sonia Sevilla (HCB)

PRE-DOCTORAL RESEARCHERS
Claudia Casafont (HCB)
Cindy Esther Frías (HCB)
Miguel Ángel Giménez Lajara (HCB)
Mercedes Montoro (HCB)
Sara Pedregosa (HCB)

NURSING STAFF
Mercè Piazuelo (HCB)

ADMINISTRATIVE STAFF
Paula Rivera (HCB)

PROBLEM

The complexity and demands of caring for patients and their families require increased nursing research, to improve the medical care provided and solve problems.

APPROACH

The group's research is aimed at improving the quality of care for patients and their families at Hospital Clínic de Barcelona. The research lines are: quality/safety, prevention, pain management, therapeutic education, training of carers and the empowerment of patients and their families. The above lines also include physical exercise and rehabilitation, maternity, mental health, care of cancer patients, transitions, chronic illness, and the care of elderly patients.

IMPACT

Thanks to the application of daily practice with scientific evidence to research, clinical nursing research brings improvements in quality of patient care, the health of the population, the experience of patients and their family carers, and professional satisfaction to staff.
The group has published national and international articles in prestigious journals and is cooperating in projects funded by the European Union and the Spanish Ministry of Economy and Competitiveness.

RESEARCH LINES

- Best practices
- Cronicity
- Dementia
- Empowerment
- Management (advanced practice)
- Safety

PUBLICATIONS

Originals / I.F.: 33.152

1. Parrotta I; De Mauleon A; Abdeljalil AB; De Souto Barreto P; Lethin C; Veerbek H; Stephan A; Saks K; Zabalegui A; Soto Martin ME. **Depression in People With Dementia and Caregiver Outcomes: Results From the European Right Time Place Care Study.** *Journal of the American Medical Directors Association.* 21(6):872-878.e1. I.F.: 4.367

2. Casafont C, Risco E, Piazuelo M, Ancín-Pagoto M, Cobo-Sánchez JL, Solís-Muñoz M, Zabalegui A. **Care of older people with Cognitive Impairment or Dementia Hospitalized in Traumatology Units (CAREXDEM): A quasi-experiment.** *Bmc Geriatrics.* 20(1):246. I.F.: 3.077

3. Afonso-Argilés FJ, Meyer G, Stephan A, Comas M, Wübker A, Leino-Kilpi H, Lethin C, Saks K, Soto-Martin M, Sutcliffe C, Verbeek H, Zabalegui A, Renom-Guiteras A, RightTimePlaceCare Consortium. **Emergency department and hospital admissions among people with dementia living at home or in nursing homes: results of the European RightTimePlaceCare project on their frequency, associated factors and costs.** *Bmc Geriatrics.* 20(1):453. I.F.: 3.077

4. Frias CE, Cabrera E, Zabalegui A. **Informal Caregivers' Roles in Dementia: The Impact on Their Quality of Life**. *Life-Basel.* 10(11):251. I.F.: 2.991

5. Risco E; Sauch G; Albero A; Acar-Denizli N; Zabalegui A; Kostov B; Amil P; Alonso A; Rios A; Martín J; Fabrellas N. **Spanish validation of the "user reported measure of care coordination" questionnaire for older people with complex, chronic conditions.** *International Journal of Environmental Research and Public Health.* 17(18):1-13. I.F.: 2.849

6. Manzanares I; Sevilla Guerra S; Lombraña M; Gil-López F; Conde-Blanco E; Zabalegui A; Pfäfflin M; May T; Kostov B; Moreno-Poyato A; Donaire A; Guio L; Beltran O; Cuzco C; Carreño M. **Spanish version of the Satisfaction with Epilepsy Care questionnaire: Adaptation and psychometric properties.** *Epilepsy & Behavior.* 102:106812. I.F.: 2.508

7. Holmstrand C; Rahm Hallberg I; Saks K; Leino-Kilpi H; Renom Guiteras A; Verbeek H; Zabalegui A; Sutcliffe C; Lethin C. **Associated factors of suicidal ideation among older persons with dementia living at home in eight European countries.** *Aging & Mental Health.* I.F.: 2.478

8. Juvé-Udina ME, González-Samartino M, López-Jiménez MM, Planas-Canals M, Rodríguez-Fernández H, Batuecas Duelt IJ, Tapia-Pérez M, Pons Prats M, Jiménez-Martínez E, Barberà Llorca MÀ, Asensio-Flores S, Berbis-Morelló C, Zuriguel-Pérez E, Delgado-Hito P, Rey Luque Ó, Zabalegui A, Fabrellas N, Adamuz J. **Acuity, nurse staffing and workforce, missed care and patient outcomes.** *Journal of Nursing Management.* 28(8):2216-2229. I.F.: 2.243

9. Leino-Kilpi H, Inkeroinen S, Cabrera E, Charalambous A, Fatkulina N, Katajisto J, Sigurðardóttir ÁK, Sourtzi P, Suhonen R, Zabalegui A, Valkeapää K. **Instruments for Patient Education: Psychometric Evaluation of the Expected Knowledge (EKhp) and the Received Knowledge of Hospital Patients (RKhp).** *Journal of Multidisciplinary Healthcare.* 13:1481-1505. I.F.: 1.913

10. Lethin C; Leino-Kilpi H; Bleijlevens MHC; Stephan A; Martin MS; Nilsson K; Nilsson C; Zabalegui A; Karlsson S. **Predicting caregiver burden in informal caregivers caring for persons with dementia living at home – A follow-up cohort study.** *Dementia-International Journal of Social Research and Practice.* 19(3):640-660. I.F.: 1.874

11. Frias CE; Risco E; Zabalegui A. **Psychoeducational intervention on burden and emotional well-being addressed to informal caregivers of people with dementia.** *Psychogeriatrics.* 20(6):900-909. I.F.: 1.750

12. Montoro-Lorite M, Risco E, Canalias-Reverter M, Rodríguez-Murillo JA, García-Pascual M, Zabalegui A. **Integrated Management of Pain in Advanced Dementia.** *Pain Management Nursing.* 21(4):331-338. I.F.: 1.595

13. Sillero-Sillero A; Zabalegui A. **Analysis of the work environment and intention of perioperative nurses to quit work.** *Revista Latino-Americana de Enfermagem.* 28:e3256. I.F.: 1.297

14. Alvira C; Cabrera E; Kostov B; Risco E; Farré M; Miguel S; Zabalegui A. **Validity and reliability of the Spanish caregiver reaction assessment scale for caregivers of people with dementia.** *International Journal of Nursing Practice.* e12848. I.F.: 1.133

Review / I.F.: 5.051

1. Frias CE, Garcia-Pascual M, Montoro M, Ribas N, Risco E, Zabalegui A. **Effectiveness of a psychoeducational intervention for caregivers of People With Dementia with regard to burden, anxiety and depression: A systematic review.** *Journal of Advanced Nursing.* 76(3):787-802. I.F.: 2.561

2. Pedregosa S, Fabrellas N, Risco E, Pereira M, Dmoch-Gajzlerska E, Şenuzun F, Martin S, Zabalegui A. **Effective academic-practice partnership models in nursing students' clinical placement: A systematic literature review.** *Nurse Education Today.* 95:104582. I.F.: 2.490

Editorial / I.F.: 1.614

1. Cabrera, Esther; Zabalegui, Adelaida. Nurses workforce and competencies. **A challenge for health systems more than ever.** *Nurse Education in Practice.* 48:102858. I.F.: 1.614

GRANTS FOR RESEARCH IN PROGRESS

Risco E. **La coordinació de l'atenció social i sanitària en persones grans amb comorbiditat.**
Sponsored by: Fundació Infermeria i Societat. COIB_PR-289/18
Duration: 01/01/2019-31/12/2020

Zabalegui A. **Cuidado de personas mayores con alteración cognitiva o demencia hospitalizadas en unidades de traumatología.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS_PI17/01049
Duration: 01/01/2018-30/06/2022

Group leaders index

A
Alfredo Adán 60
Neus Agell 372
Alvar Agustí 108
Jordi Alberch 282
Antonio Alcaraz 112
Virginia Amador 374
Francesc Artigas 285

B
Joan Albert Barberà 116
Miquel Bernardo 287
Bart Bijnens 122
Joan Bladé 376
Isabel Blanco 124
Josep Brugada 127
Jordi Bruix 190

C
Gonzalo Calvo 444
Elías Campo 380
Antoni Castells 193
Sergi Castellví-Bel 200
Josefina Castro-Fornieles 292
Francisco Cervantes 384
Ricard Cervera 63
Ángel Chamorro 298
Maria Cinta Cid 69
Marc Claret 204
Joan Clària 206
Daniel Closa 73
Dolors Colomer 388
Albert Compte 303
Miriam Cuatrecasas 391

D
Josep Dalmau 305
Jaime de la Rocha 310
Fritz Diekmann 131

E
Gustavo Egea 137
Carles Enrich 395
Ginés Escolar 397
Ramon Estruch 139

F
Ramon Farré 146
José Carlos Fernández-Checa 211
Carlos Fernández de Larrea 400
Mercedes Fernández-Lobato 209
Cristina Fillat 214
Constantino Fondevila 216
Xavier Forns 221

G
Juan Carlos García-Pagán 225
Xavier Gasull 312
Pere Ginès 230
Jordi Gracia-Sancho 235
Eduard Gratacós 237
Josep Maria Grau 314
Antoni Gual 319
Núria Guañabens 243
Eduard Guasch 149

H
Felicia Hanzu 245

I
Alejandro Iranzo 322

J
Wladimiro Jiménez 247
Manel Juan 75
Carme Junqué 325

L
Josep Maria Llovet 249
Sara Llufriu 329
Armando López-Guillermo 402
Francisco Lozano 78

M
Josep Mallolas 80
Maria Josep Martí 331
José Ignacio Martín-Subero 406
María Ángeles Martínez-Zamora 252
Guadalupe Mengod 336
Josep Maria Miró 86
Òscar Miró 88
Lluis Mont 152
Josep Maria Montserrat 156
Albert Morales 255
Asunción Moreno 94
Joaquim Mullol 158

N
Anna Novials 257

O
Rafael Oliva 408

P
Julià Panés 259
Albert Parés 264
Carmen Peralta 266
Patricia Pérez-Galán 410
Albert Pol 412
Francesca Pons 414
Antonio Postigo 419
Aleix Prat 421
Susana Puig 430

R
Joaquim Raduà 338
Ignacio Revuelta 165
Antonia Ribes 268

S
Manel Sabaté 167
Itziar Salaverria 436
Raquel Sánchez-Valle 343
Maria Victoria Sanchez-Vives 347
Pau Sancho-Bru 270
Coral Sanfeliu 349
Raimon Sanmartí 97
Pere Santamaria 272
Josep Saura 351
Antoni Sisó 448
Marta Sitges 176
Alex Soriano 100
Gisela Sugranyes 353

T
Antoni Torres 180
Ramon Trullàs 355

U
Álvaro Urbano-Ispizua 438

V
Josep Vidal 274
Eduard Vieta 357
Pablo Villoslada 367

Z
Adelaida Zabalegui 451


IDIBAPS


FUNDACIÓ
CLÍNIC
BARCELONA



CLÍNIC
BARCELONA
Hospital Universitari

UNIVERSITAT DE BARCELONA

CSIC
Consejo Superior de Investigaciones Científicas

Generalitat de Catalunya

Rosselló, 149-153
08036 Barcelona

www.idibaps.org
info@idibaps.org
www.facebook.com/idibaps
@idibaps

IDIBAPS

FUNDACIÓ CLÍNIC BARCELONA