ANNUAL SCIENTIFIC REPORT 2012

IDIBAPS

Institut
D'Investigacions
Biomèdiques
August Pi i Sunyer

Annual Scientific Report 2012

The mission of IDIBAPS is to combine high-quality clinical research with high-level basic research in order to achieve a more effective transfer of scientific results in the prevention and treatment of the most common health issues in our country.

ANNUAL SCIENTIFIC REPORT

IDIBAPS
Institut D'Investigacions Biomèdiques August Pi i Sunyer

Rosselló, 149-153
08036 Barcelona
www.idibaps.org

Hospital Clínic – Fundació Clínic

University of Barcelona – Faculty of Medicine

CSIC – Institut d'Investigacions Biomèdiques de Barcelona (IIBB)
(Spanish National Scientific Research Council – Barcelona Institute of Biomedical Research)

Generalitat de Catalunya – Departament d'Economia i Coneixement
(Catalan Autonomous Government – Ministry for the Economy and Knowledge)

Published by:
IDIBAPS
Rosselló, 149-153 – 08036 Barcelona

Editorial Board:
Dr Ramon Gomis, IDIBAPS Director
Dr Pastora Martínez, IDIBAPS Managing Director
Mrs Teresa Peña, Fundació Clínic Research Management Office
Mrs Gemma Pedrola, IDIBAPS Director's Assistant
Mr Àlex Argemí, IDIBAPS Communication Officer

Production and design:
BPMO Edigrup
C/ Guitard, 43, 1ª planta
08014 Barcelona
Tel.: 933 637 840
www.bpmoedigrup.com

Legal Deposit: B-47.798-2005

© IDIBAPS 2013
http://creativecommons.org/licenses/by-nc-sa/3.0/

Centres de recerca de Catalunya

This centre has been cofinanced by the European Union through the European Regional Development Fund (ERDF)

IDIBAPS is accredited as a Health Care Research Institute by the Carlos III Health Institute

INDEX

Foreword IDIBAPS

- INTRODUCTION 7
- IDIBAPS RESEARCH AND INNOVATION 15
- SCIENTIFIC CORE FACILITIES 34
- NETWORKING 42
- TRAINING 55
- IDIBAPS AND SOCIETY 61

1 **AREA 1** BIOLOGICAL AGGRESSION AND RESPONSE MECHANISM **62**

2 **AREA 2** RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING **100**

3 **AREA 3** LIVER, DIGESTIVE SYSTEM AND METABOLISM **154**

4 **AREA 4** CLINICAL AND EXPERIMENTAL NEUROSCIENCE **216**

5 **AREA 5** ONCOLOGY AND HAEMATOLOGY **272**

Transversal research groups 326

Index

- TEAM AND GROUP LEADERS INDEX 336

INTRODUCTION

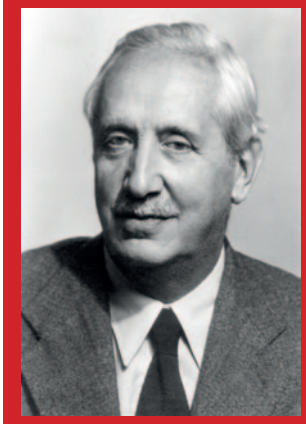
About IDIBAPS

The Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS) is a public research centre dedicated to translational research in the field of biomedicine. It aims to **integrate state-of-the-art basic research and quality clinical research in order to acquire and transfer knowledge** regarding the main health problems present in our society, with the final purpose of improving their prevention and treatment. Therefore, innovation and technological progress are essential lines of activity at IDIBAPS. The IDIBAPS task force combines more than 460 researchers, making IDIBAPS probably one of the most powerful translational research centres in Spain.

IDIBAPS is situated in a melting pot location for biomedical research, the Clínic Campus. In the area you can find the School of Medicine from the University of Barcelona, the Hospital Clínic of Barcelona and the Barcelona Institute of Biomedical Research (IIBB-CSIC). This institutional combination is ideal for creating powerful synergies and ensuring that the IDIBAPS research is efficiently transferred to the patient and included in the training of new health professionals.

The research activities of the Institute are divided into five different areas, which group almost 60 top-level research teams. IDIBAPS' researchers are distributed into five fields of activity: Biological aggression and response mechanisms (Area 1), Respiratory, cardiovascular and renal pathobiology and bioengineering (Area 2), Liver, digestive system and metabolism (Area 3), Clinical and experimental neuroscience (Area 4), and Oncology and haematology (Area 5). Additionally, several transversal groups develop their research in Primary Care, Nursing, Pharmacology and Clinical Trials.

Scientific breakthroughs are never the result of chance. They are long-term commitments that involve not only researchers, but also society as a whole. IDIBAPS is a consortium that assumes one of these commitments: 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.



August Pi i Sunyer
(Barcelona 1879 - Mexico 1965)

IDIBAPS is named after Dr. August Pi i Sunyer, eminent doctor and politician who changed the entire course of biomedicine and politics in Catalonia. His pioneering spirit and his will to achieve excellence are present at the very essence of this Institute.

KEEPING OUR FOCUS ON TRANSLATIONAL RESEARCH

The data presented in this Annual Scientific Report details the ever growing scientific activity led by IDIBAPS' investigators, and their capacity for attracting public and private funding. This enormous potential for capturing resources and their conversion into results applicable to clinical practice constitute the best guarantee for securing the future of the Institute. With 9 new patents in 2012, and a growing number of transfer agreements, the research undergone at IDIBAPS has a direct impact on society and industry.

In 2012 they reached 1,026 original articles published in high Impact Factor scientific magazines. As detailed in other sections of this Report, the progression of the yearly IF figures show a growing trend, achieving 5,334 IF points in 2012. With around 60% of the original papers published in journals pertaining to the upper quartile of impact in their field, the volume of the scientific production at IDIBAPS grows in volume as well as in quality. The number of reviews (113), editorials (65) and clinical guidelines (23) led or participated by the Institute's researchers in 2012 is another indicator of their influence among the scientific community.

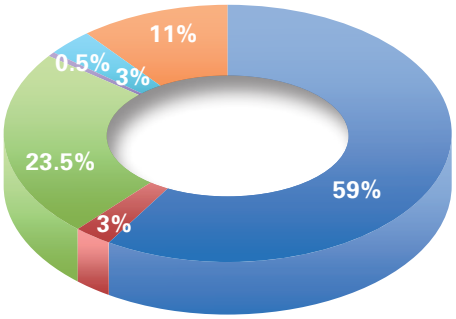
The economic figures of the Institute are another example of its high levels of competitiveness. The funding of IDIBAPS, coming from multiple public sources but mainly from competitive research calls, ensures the sustainability and the leading capacity of the researchers and their scientific projects.

Here we present some key figures about IDIBAPS funding:

1. **Funding of IDIBAPS.** The funding of IDIBAPS during 2012 totalled more than 21 million Euros. Almost twenty four percent of this amount corresponds to the contribution of the Department of Economy and Knowledge (Departament d'Economia i Coneixement) and the Department of Health (Departament de Salut) of the Catalan Government (Generalitat de Catalunya). The rest of the funding executed by IDIBAPS during 2012 corresponds to calls for research funding (59%), as well as contracts and cooperation agreements with private entities (11%), IDIBAPS core facilities services (3%), and financial income sources.

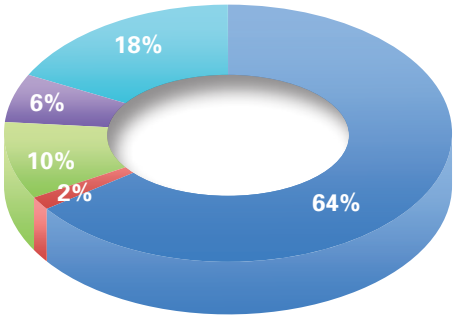
2. **Resource volume generated by the IDIBAPS researchers.** A significant aspect is the resource volume generated by the IDIBAPS research groups. In this context, the resources executed by researchers of the IDIBAPS during the financial year corresponding to 2012 totalled more than 39 million Euros. These resources have been managed by different institutions: IDIBAPS itself (13,3 M€) and the Fundació Clínic per a la Recerca Biomèdica (24,8 M€). It is important to mention that 65% of the resources executed by investigators of IDIBAPS during 2012 (more than 24 M€) correspond to competitive research projects and grant basis (calls for funding). The remaining 35% is distributed as follows: 18% contracts with private entities, 6% clinical trials managed by the Fundació Clínic, 10% donations, and 2% teaching contracts.

IDIBAPS FUNDING 2012



- COMPETITIVE PROJECTS (CALLS FOR FUNDING) **12,495 k€**
- M. ECONOMY AND KNOWLEDGE CONTRIBUTION **5,028 k€**
- CORE FACILITIES **709 k€**
- M. HEALTH CONTRIBUTION **579 k€**
- FINANCIAL INCOME **102 k€**
- PRIVATE FUNDING **2,305 k€**

RESOURCES EXECUTED IN 2012 MANAGED BY IDIBAPS AND FUNDACIÓ CLÍNIC



- COMPETITIVE PROJECTS **24,801 k€**
- TEACHING **576 k€**
- DONATIONS **3,726 k€**
- CLINICAL TRIALS **2,297 k€**
- PRIVATE FUNDING **6,724 k€**

SCIENTIFIC FACILITIES AND NEW LABORATORIES

The task developed by IDIBAPS and its researchers is only possible thanks to tough work, enthusiasm and also research infrastructures such as the Esther Koplowitz Center or the CELLEX Research Center. In recent years the IDIBAPS has been able to increase the space available for research with two new facilities born from a public-private joint effort.

Traditionally, IDIBAPS researchers were distributed in spaces within the three scientific institutions forming the consortium, Hospital Clínic of Barcelona, Faculty of Medicine of the University of Barcelona and CSIC's Barcelona Biomedical Research Institute. Some of the research lines summarized in this Report are still developed in these institutions, but today the IDIBAPS investigators have two new reference facilities were all the research areas interact and grow together.

Esther Koplowitz Research Center (CEK)

The Esther Koplowitz Research Center (CEK) building is a wonderful example of public and private co-responsibility, since it benefits from the participation of the Generalitat de Catalunya, the Ministerio de Economía y Competitividad, the Instituto de Salud Carlos III and the Universitat de Barcelona, as well as from the support of other patrons such as the Fundación Esther Koplowitz, Fundació Privada Cellex, Acció Sardà Farriol para la Investigación en Diabetes and Laboratorios Esteve.

Founded with a capital contribution of 15 million Euros from the Fundación Esther Koplowitz to the Fundació Clínic, the CEK building's investment exceeds 50 million Euros. Inaugurated by the end of 2010 and with space for more than 350 researchers, the CEK building receives international scientists and PhD students, thus fostering the exchange of experience and professional synergies. The building includes a ground floor, mezzanine and five plants with a total area of 6,500 m^2 on the ground. In the basement three underground floors offer a total area of 2,485 m^2, including space for scientific core facilities and a parking. In 2011 it reached its full operating capacity.

The CEK building homes some of the IDIBAPS teams, including an enormous range of research lines.

CELLEX Biomedical Research Center

The CELLEX Biomedical Research Center is a new space with five floors equipped for last generation biomedical research located in the south wing of the Faculty of Medicine of the University of Barcelona. Thanks to the collaboration between the public and private sectors 5,150 m^2 of laboratories, scientific and technological services and other spaces have been reformed and equipped to support the research developed at IDIBAPS and the University of Barcelona. The new facilities were finished by the end of 2012 and presented in January 2013.

The renovation and adaptation of these areas is mainly the result of a donation of nearly 9 million Euros from the CELLEX Foundation to the University of Barcelona, which offers to IDIBAPS four floors with laboratories for biomedical research. IDIBAPS added around one million euros to complete the purchase of scientific equipment. Part of the contribution of the IDIBAPS has been financed with FEDER funds from the Catalan Government (Generalitat de Catalunya) and the rest comes from a specific call for Health Research Institutes accredited by the Instituto de Salud Carlos III.

The new facilities of IDIBAPS home over 200 researchers from 22 different research groups. It is a space equipped with the latest technology and comforts, and it respects the original external centenary architecture of the UB School of Medicine. It accommodates teams from all the IDIBAPS research areas, such as: oncology, cardiology, autoimmune diseases, infectious diseases, respiratory diseases, neuroscience and neurodegenerative diseases, nephrology and urology.

TEAMS IN THE CEK BUILDING

Theoretical neurobiology of cortical circuits
Dr. Albert Compte. P.261
Immune receptors of the innate and adaptive system
Dr. Francisco Lozano. P.86
Human and experimental functional oncomorphology
Dr. Elías Campo. P.276
Physiopathology and molecular bases in hematology
Dr. Dolors Colomer. P.310
Gastrointestinal and pancreatic oncology
Dr. Cristina Fillat. P.199
Molecular and translational oncology
Dr. Pere Gascón. P.318
Melanoma: imaging, genetics and immunology
Dr. Susana Puig. P.293
Hematopoietic progenitor cell transplantation
Dr. Álvaro Urbano. P.298
Pathophysiology and treatment of ascites and altered renal function in liver cirrhosis
Dr. Vicente Arroyo. P.170
Hepatic oncology
Dr. Jordi Bruix. P.174
Translational research in liver oncology
Dr. Josep M. Llovet. P.175
Protective strategies against experimental
Dr. Carmen Peralta. P.195
Liver transplantation and graft viability
Dr. Antoni Rimola. P.194
Liver hemodynamics and portal hypertension. Digestive bleeding secondary to ruptured esophageal varicose veins
Dr. Jaume Bosch. P.178
Gastrointestinal and pancreatic oncology
Dr. Antoni Castells. P.199
Mitochondrial regulation of cell death and steatohepatitis
Dr. José Carlos Fernández-Checa. P.190
Viral hepatitis in the immune competent host and in liver transplant patients
Dr. Xavier Forns. P.166
Inflammatory bowel disease
Dr. Julián Panés. P.183
Genomic Programming of Beta Cells and Diabetes
Dr. Jorge Ferrer. P.208
Pancreatic islets: biomarkers and function
Dr. Ramon Gomis. P.211
Molecular and metabolic alterations in diabetes
Dr. Anna Novials. P.211
Pathogenesis and Treatment of Autoimmunity
Dr. Pere Santamaria. P.211

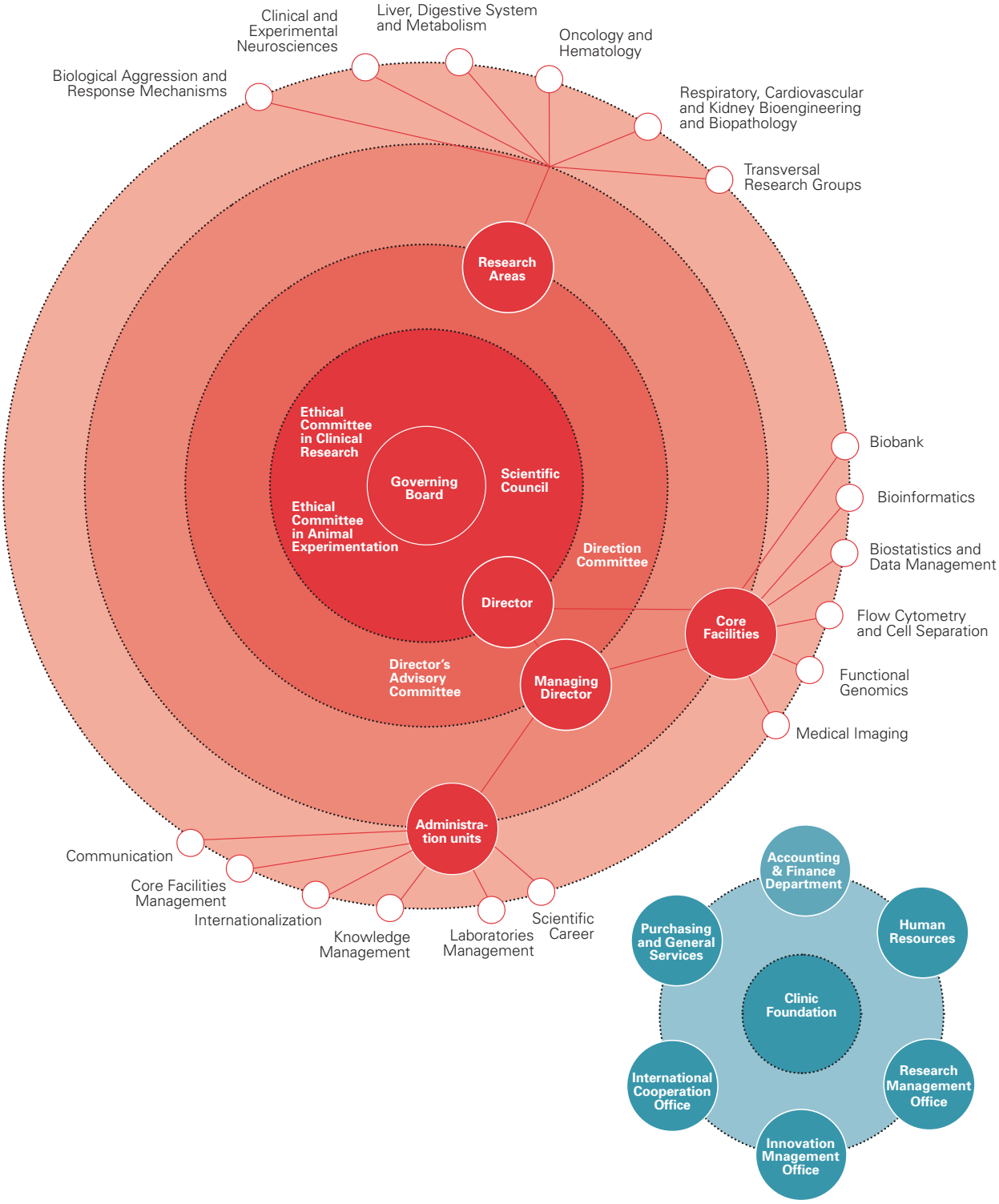
TEAMS IN THE CELLEX BUILDING

Molecular and translational oncology
Dr. Pere Gascón. P.318
Cell proliferation and signaling
Dr. Oriol Bachs. P.323
Transcriptional regulation of gene expression
Dr. Antonio Postigo. P.277
Inflammation and repair in respiratory illnesses
Dr. Àlvar Agustí. P.148
Physiopathological mechanisms of respiratory illnesses
Dr. Joan Albert Barberà. P.137
Clinical and Experimental Respiratory Immunoallergy (IRCE)
Dr. Joaquim Mullol. P.141
Applied research in infectious respiratory diseases, critically ill patients and lung cancer
Dr. Antoni Torres. P.130
Arrhythmias, resynchronization and cardiac imaging
Dr. Josep Brugada. P.108
Atherosclerosis, coronary disease and heart failure
Dr. Manel Sabaté. P.102
Nephro-urological diseases and kidney transplantation
Dr. Josep M. Campistol. P.116
Genetic and urological tumours
Dr. Antonio Alcaraz. P.151
Clinical and experimental neuroimmunology
Dr. Francesc Graus. P.264
Pathogenesis of autoimmune neuronal disorders
Dr. Josep Dalmau. P.265
Pathogenesis and new treatments in multiple sclerosis
Dr. Pablo Villoslada. P.265
Neurodegenerative diseases: Clinical and experimental research
Dr. Eduardo Tolosa. P.226
Brain ischemia: Clinical and experimental studies
Dr. Ángel Chamorro. P.223
Cellular biology of pathological processes
Dr. Jordi Alberch. P.239
Infectious diseases and AIDS
Dr. Josep M. Gatell. P.76
Systemic autoimmune diseases
Dr. Ricard Cervera. P.67
Systemic vasculitis
Dra. M. Cinta Cid. P.68
Muscle research and mitochondrial function
Dr. Josep M. Grau. P.236
Cholestasis and bone pathology
Dr. Albert Parés / Dra. Núria Guanyabens. P.187

ORGANISATIONAL CHART

Organogram

IDIBAPS requires a solid administrative infrastructure to support the state-of-the-art research developed by its researchers. That is the reason why, in addition to developing its own scientific management and administrative units, it works together with the Fundació Clínic to ensure efficiency and quality in the services offered to the research staff. IDIBAPS research project management and administration is carried out by the Fundació Clínic per a la Recerca Biomèdica.



Board of Governors

The Board of Governors' main responsibilities are to supervise IDIBAPS actions, budget and accomplishments, to take the main scientific decisions with the assessment of the Scientific Advisory Board, and to control the development of the strategic plan.

CHAIRMAN
Josep Maria Martorell
Director General of Research, Catalan Government (Generalitat de Catalunya)

VICE-CHAIRMAN
Cristina Suñol
Director of Barcelona Biomedical Research Institute (IIBB-CSIC)

BOARD MEMBERS
Jordi Alberch
Research Vice-Dean of University of Barcelona
Joan Bigorra
Innovation Director of Hospital Clínic of Barcelona
Lluís Calvo i Calvo
Institutional Coordinator of the CSIC in Catalonia
Francesc Cardellach
Dean of the University of Barcelona School of Medicine
Carles Constante
Director General de Regulació, Planificació i Recursos Sanitaris - Catalan Government (Generalitat de Catalunya)
Ramon Gomis
Director of IDIBAPS
Josep Maria Piqué
General Manager of Hospital Clínic of Barcelona

SECRETARY
Pastora Martínez
Managing Director of IDIBAPS

Scientific Advisory Board

External scientific leaders, some of them working abroad, assess IDIBAPS in scientific and politic issues.

Jesús Ávila
Severo Ochoa Molecular Biology Centre, Madrid
José A. Berciano
Neurology Department, Hospital Universitario Marqués de Valdecilla, Santander
María Blasco
Spanish National CANCER Research Center (CNIO), Madrid
Lisardo Bosca
Biochemical Institute, Universidad Complutense, Madrid
Bartolomé Celli
Pulmonary and Critical Care Division, Harvard University, Cambridge
Francisco Fernández Avilés
Servicio de Cardiología, Hospital Gregorio Marañón, Madrid
Roberto Gallego
Neuroscience Institute, Universidad Miguel Hernández, Alicante
Francisco Javier García-Sancho
Biology and Molecular Genetics Institute, School of Medicine, Valladolid
Guadalupe García-Tsao
Clinical and Translational Core, Yale Liver Center, New Haven
Roberto Groszmann
Hepatic Hemodinamic Lab. Yale University School of Medicine, West Haven
José López Barneo
Department of Medical Physiology and Biophysics, School of Medicine, Seville
Carlos López Otín
Department of Biochemistry and Molecular Biology, University of Oviedo
Carlos Macaya
Servicio de Cardiología, Hospital Clínico San Carlos, Madrid
Óscar Marín
Instituto de Neurociencias CSIC, Universidad Miguel Hernández, Elche
José M. Mato
Cooperative Bioscience Research Centre (CIC bioGUNE), Biscay
Federico Mayor
Severo Ochoa Molecular Biology Centre, Madrid
Ginés Morata
Severo Ochoa Molecular Biology Centre, Madrid
Miguel Ángel del Pozo
Integrin Signalling Laboratory, National Cardiovascular Research Centre (CNIC), Madrid
Ciril Rozman
Haematology Department, Hospital Clínic de Barcelona, University of Barcelona
Jesús San Miguel
Haematology Department, Hospital Clínico de Salamanca
Francisco Sánchez-Madrid
Immunology Department, Hospital La Princesa, Madrid
Eugenio Santos
Cancer Research Centre, Salamanca
Antonio Vidal-Puig
Department of Clinical Biochemistry, School of Clinical Medicine, University of Cambridge

Direction Committee

The Direction Committee is responsible for the supervision of the progress of IDIBAPS research areas, the recruitment of new scientists under different schemes, and the control of IDIBAPS' training programmes.

Ramon Gomis
Director of IDIBAPS and of the Fundació Clínic for Biomedical Research
Dr. Elías Campo
Hospital Clínic Research Director
Dr. Josep Maria Llovet
Head of the IDIBAPS Group Translational research in hepatic oncology
Dr. Pastora Martínez
Manag Director of IDIBAPS
Dr. Anna Planas
Member of the IDIBAPS Team Brain ischemia: Clinical and experimental studies

Director's Advisory Committee

On a daily basis, IDIBAPS' director is assessed by an internal advisory committee formed by IDIBAPS researchers. This committee helps the director to implement the strategic decisions taken by the Board.

PERSONS REPRESENTING THE INSTITUTIONS
Manel Ramos
Hospital Clínic de Barcelona Doctors' Representatives
Guadalupe Mengod
Researcher at IIBB-CSIC
Cristina Suñol
Director of Barcelona Biomedical Research Institute (IIBB-CSIC)
Francesc Cardellach
Dean of the UB School of Medicine

PERSONS REPRESENTING THE AREAS
Area 1
Josep Maria Miró, Coordinator
Maria Cinta Cid, Representative

Area 2
Ramón Farré, Coordinator
Joan Albert Barberà, Representative

Area 3
Julià Panés, Coordinator
Jorge Ferrer, Representative

Area 4
Anna Planas, Coordinator
Pablo Villoslada, Representative

Area 5
Dolors Colomer, Coordinator
Cristina Nadal, Representative

TEACHING COORDINATOR
Neus Agell
School of Medicine (UB)

GUEST MEMBERS
Joan Rodés
Member of the IDIBAPS Scientific Council
Antonio Sisó
CAPSE-GESCLINIC Research Coordinator
Joan Bigorra
Hospital Clínic Innovation Director
Jaume Bosch
CIBERehd Scientific Director
Josep M. Gatell
National Coordinator of the RETIC on AIDS
Dr. Àlvar Agustí
CIBERes Scientific Director

IDIBAPS RESEARCH AND INNOVATION

Since its creation in 1996, IDIBAPS has shown constant growth of the principal quality indicators of a research centre: The number of scientific publications, the total impact factor, the economic resources, and the contracting of qualified personnel.

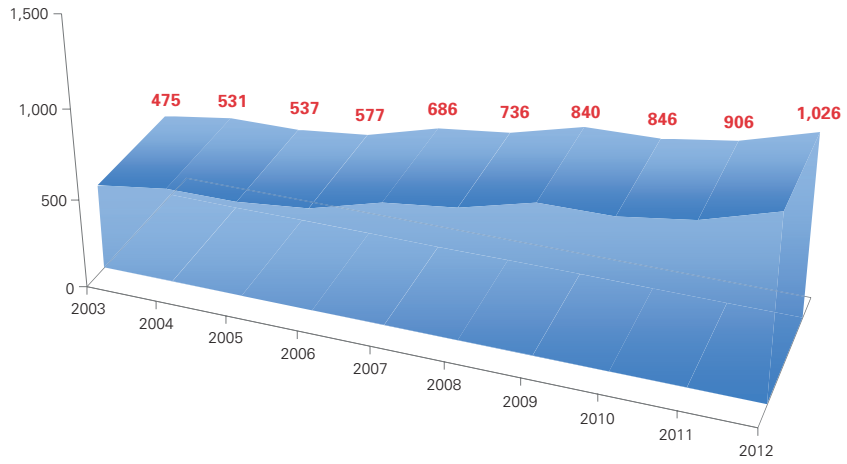
Here is shown the evolution of these indicators and other success factors over time, in a graphic and comprehensible manner.

SCIENTIFIC PRODUCTION

The number of publications and their impact factor represent one of the most extended indicators of the competitiveness of a research centre. Both parameters show a clear rising trend in IDIBAPS, and in the year 2012 there have been **1,026 original publications in scientific journals with an important impact factor**. It means an increase of over 100 original publications when compared with 2011 figures.

An original paper is taken to be an article contributing new knowledge as a result of experiments performed by investigators of the Institute. In order to be counted as such, the article must have among its signing authors at least one member of the IDIBAPS pertaining to one of the research teams reflected in this Report, with specific mention of IDIBAPS or of the entities with which agreements have been signed.

ORIGINAL ARTICLES 2003-2012



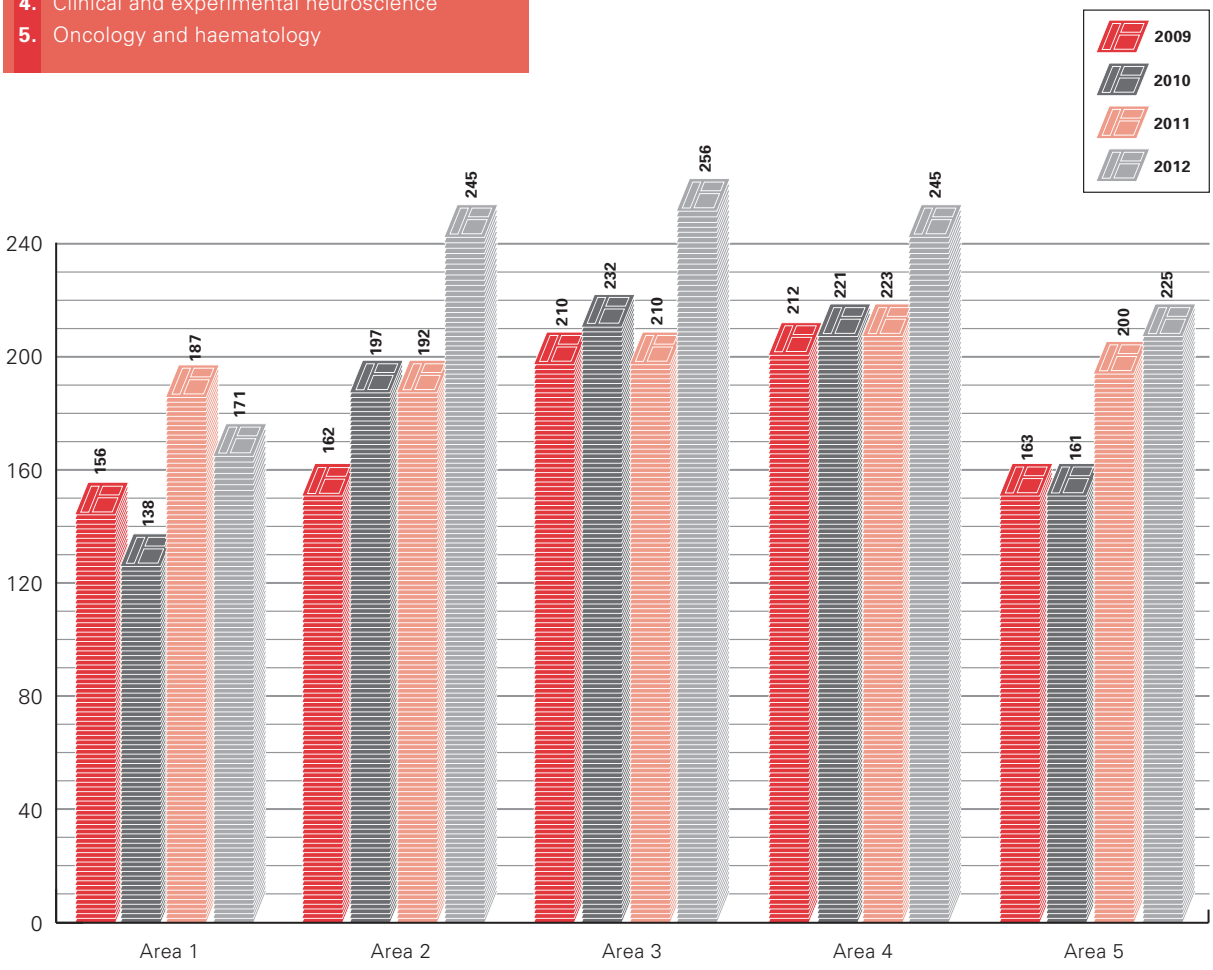
As already mentioned, IDIBAPS researchers are distributed into **5 fields of activity**. Each area is divided into different teams that combine in-house research conducted with their own lines of research or in cooperation with other teams. It should be commented that in this Report, and apart from the 5 areas of the IDIBAPS, there is a specific section dedicated to Transversal groups doing research in **Primary Care, Nursing, Pharmacology and Clinical Trials**, which also play a very important role in translational research.

Below is a list of the reported areas, with a graphic representation of the scientific production of each of them - once again considering only the number of original papers.

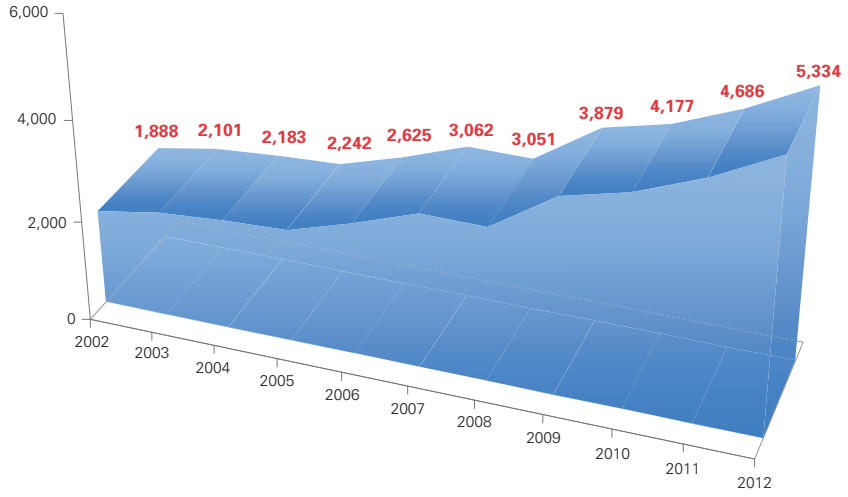
It should be mentioned that the sum of the articles per area is higher than the institutional total. This is because publications resulting from collaboration between teams in two different areas have been counted once for each area. The representation shows that production in all the areas has been of a very high level, and collaboration among areas is notorious.

ORIGINAL ARTICLES 2009-2012

1. Biological aggression and response mechanisms
2. Respiratory, cardiovascular and renal pathobiology and bioengineering
3. Liver, digestive system and metabolism
4. Clinical and experimental neuroscience
5. Oncology and haematology



IMPACT FACTOR 2002-2012

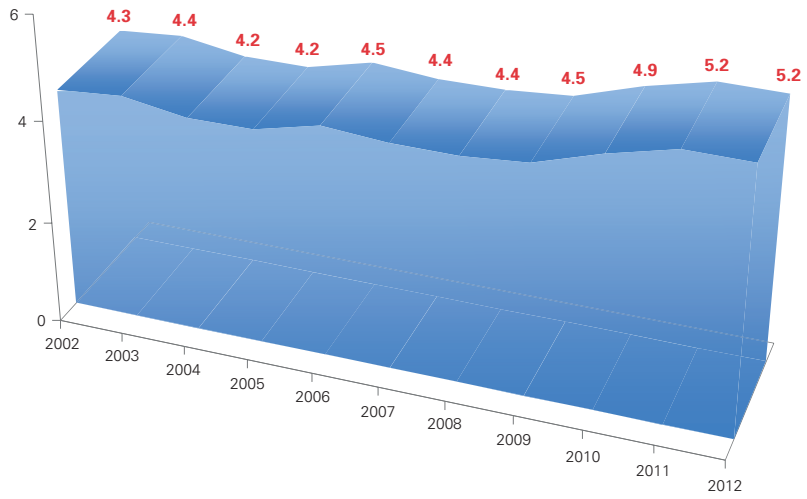


The **impact factor** (IF)[1] of the journals in which an article is published constitutes a measure or marker of the influence of the research carried out in a given centre. This comprises statistical data measured based on the number of times the articles published in a certain journal are cited. Even though there are probably many factors that are just as important or even more important for analysing the work carried out by our researchers, the IF is an objective piece of information that serves as a guide.

The progression of the total IF for IDIBAPS publications in recent years is shown in the following figure. In 2012, the 1,026 articles published by investigators of IDIBAPS have reached a **total IF of 5,333.56**. This means that the mean IF per article published by IDIBAPS during 2012 is **5.19,** showing that the excellence of published works is maintained with respect to the **5.22** recorded in 2011 despite the large increase in the number of original publications. Added to this, over 60% of these original papers have appeared in journals pertaining to the upper quartile of impact in their field. Thus, while the number of publications increases yearly, their quality does not decrease.

[1] The IF data were obtained from Journal Citation Reports® provided by THOMSON REUTERS®, Inc. (Thomson®), Philadelphia, Pennsylvania, USA: © Copyright THOMSON REUTERS® 2011. All rights reserved

MEAN IMPACT FACTOR / ORIGINAL ARTICLE



It should be commented that the number of **editorials (65)** and **reviews (113)** has also been outstanding. This reflects the role as opinion leaders of IDIBAPS' members. With **23 clinical guidelines** the members of the IDIBAPS also leave their mark upon international clinical practice. On the other hand, the present Report documents **32 multicentre studies**, in which professionals from IDIBAPS have participated actively, but without being the main signing authors of the studies. These authors are specifically mentioned in some section or annex of the article, forming part of the work group.

Another important aspect to be taken into account is the transversality of the research reflected in the works published by our investigators. Over **20%** of the original articles listed in this Report have been carried out in **collaboration between two or more IDIBAPS teams.**

1,026 originals	**Total IF: 5,333.55**	**Mean IF: 5.19**
113 reviews	678.39	6
65 editorials	410.13	6.31
23 guidelines	72.61	3.16
32 multicenter studies	297.08	9.28

JOURNALS INDEX

This list reflects the number of the original articles published in the 50 journals with the highest Impact Factor during 2012.

Journal	IF	Total Original Articles
NEW ENGLAND JOURNAL OF MEDICINE	53.30	4
LANCET	38.28	4
NATURE	36.28	2
NATURE GENETICS	35.53	3
CELL	32.40	1
JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION	30.03	4
CANCER CELL	26.57	1
NATURE IMMUNOLOGY	26.01	1
LANCET ONCOLOGY	22.59	1
JOURNAL OF CLINICAL ONCOLOGY	18.37	4
ANNALS OF INTERNAL MEDICINE	16.73	1
CIRCULATION	14.74	1
J AM COLL CARDIOL	14.16	3
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY	14.16	1
CELL METABOLISM	13.67	1
MOLECULAR PSYCHIATRY	13.67	2
GENOME RESEARCH	13.61	1
JOURNAL OF CLINICAL INVESTIGATION	13.07	3
ARCHIVES OF GENERAL PSYCHIATRY	12.02	2
GASTROENTEROLOGY	11.68	3
HEPATOLOGY	11.67	13
ANNALS OF NEUROLOGY	11.09	2
AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE	11.08	8
JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY	11.00	1
EUROPEAN HEART JOURNAL	10.48	6

Journal	IF	Total Original Articles
EMBO MOLECULAR MEDICINE	10.33	1
GUT	10.11	6
BLOOD	9.90	11
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA	9.68	1
LEUKEMIA	9.56	6
CIRCULATION RESEARCH	9.49	2
BRAIN	9.46	2
JOURNAL OF HEPATOLOGY	9.26	20
EMBO J	9.21	2
CLINICAL INFECTIOUS DISEASES	9.15	3
PLOS PATHOG	9.13	1
CELL DEATH AND DIFFERENTIATION	8.85	1
SCHIZOPHRENIA BULLETIN	8.80	1
ANNALS OF THE RHEUMATIC DISEASES	8.73	10
EUROPEAN UROLOGY	8.49	1
NATURE REVIEWS RHEUMATOLOGY	8.39	1
NEUROLOGY	8.31	6
DIABETES	8.29	1
DIABETES CARE	8.09	1
NUCLEIC ACIDS RES	8.03	1
NEUROPSYCHOPHARMACOLOGY	7.99	1
ARTHRITIS AND RHEUMATISM	7.87	3
CANCER RESEARCH	7.86	1
STEM CELLS	7.78	1
CLINICAL CANCER RESEARCH	7.74	6

TRANSLATION OF KNOWLEDGE AND INNOVATION

With the aim of improving health in our society, the IDIBAPS is firmly committed to the translation of results and innovation within the healthcare sector. Above and beyond evaluating research and protecting knowledge, IDIBAPS is concerned with promoting the use of new medical protocols and technologies that will improve patients' state of health, their quality of life and the efficiency of healthcare processes.

Taking innovation into consideration is not a complementary task in the routine work of researchers, but a philosophy that is present in all the activities they carry out. It is important for researchers, for patients and for the Institute.

Clinical Guidelines

As a general perspective of IDIBAPS' impact in society, it is worth mentioning that every year our researchers participate in the elaboration of international clinical guides. These guidelines are not only published in high impact peer-reviewed journals but also have a tremendous impact in patients' care and in society in general. Therefore, we can conclude that IDIBAPS' researchers set new trends to be followed in medical practice.

The list below reflects the participation of investigators of the IDIBAPS in 23 clinical guides published in 2012 in international journals subject to peer review. In addition to contributing new data for improving patient treatment, the influence of the investigators of the IDIBAPS places them at the head of expert committees that establish the new tendencies to be followed in medical practice.

Title	Associated Journal Short Text	Reference	IF	Authors
2012 EHRA/HRS expert consensus statement on cardiac resynchronization therapy in heart failure: implant andfollow-up recommendations and management	HEART RHYTHM	9(9):1524-76	4.10	European Heart Rhythm Association; European Society of Cardiology; Heart Rhythm Society; Heart Failure Society of America; American Society of Echocardiography; American Heart Association; European Association of Echocardiography; Heart Failure Association, Daubert JC, Saxon L, Adamson PB,Auricchio A, Berger RD, Beshai JF, Breithard O, Brignole M, Cleland J, Delurgio DB, Dickstein K, Exner DV, Gold M, Grimm RA, Hayes DL, Israel C, Leclercq C,Linde C, Lindenfeld J, Merkely B, Mont L, Murgatroyd F, Prinzen F, Saba SF, Shinbane JS, Singh J, Tang AS, Vardas PE, Wilkoff BL, Zamorano JL.
2012 EHRA/HRS expert consensus statement on cardiac resynchronization therapy in heart failure: implant andfollow-up recommendations and management	EUROPACE	14(9):1236-86	1.98	European Heart Rhythm Association (EHRA); European Society of Cardiology (ESC); Heart Rhythm Society; Heart Failure Society of America (HFSA); American Society of Echocardiography (ASE); American Heart Association (AHA); European Association of Echocardiography (EAE) of ESC; Heart Failure Association of ESC (HFA), Daubert JC, Saxon L, Adamson PB, Auricchio A, Berger RD, Beshai JF, Breithard O, Brignole M, Cleland J, DeLurgio DB, Dickstein K, Exner DV,Gold M, Grimm RA, Hayes DL, Israel C, Leclercq C, Linde C, Lindenfeld J, Merkely B, Mont L, Murgatroyd F, Prinzen F, Saba SF, Shinbane JS, Singh J, Tang AS,Vardas PE, Wilkoff BL, Zamorano JL, Anand I, Blomström-Lundqvist C, Boehmer JP, Calkins H, Cazeau S, Delgado V, Estes NA, Haines D, Kusumoto F, Leyva P, Ruschitzka F, Stevenson LW, Torp-Pedersen CT.

Title	Associated Journal Short Text	Reference	IF	Authors
2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESC Guidelines for the management of atrial fibrillation–developed with the special contribution of the European Heart Rhythm Association	EUROPACE	14(10):1385-413	1.98	Camm AJ; Lip GY; De Caterina R; Savelieva I; Atar D; Hohnloser SH; Hindricks G; Kirchhof P; ESC Committee for Practice Guidelines-CPG; Document Reviewers
2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESCGuidelines for the management of atrial fibrillation. Developed with the special contribution of the European Heart Rhythm Association	EUROPEAN HEART JOURNAL	33(21):2719-47	10.48	Camm AJ; Lip GY; De Caterina R; Savelieva I; Atar D; Hohnloser SH; Hindricks G; Kirchhof P; ESC Committee for Practice Guidelines (CPG); Bax JJ; Baumgartner H; Ceconi C; Dean V; Deaton C; Fagard R; Funck-Brentano C; Hasdai D; Hoes A; Kirchhof P; Knuuti J; Kolh P; McDonagh T; Moulin C; Popescu BA; Reiner Z; Sechtem U; Sirnes PA; Tendera M; Torbicki A; Vahanian A; Windecker S; Document Reviewers; Vardas P; Al-Attar N; Alfieri O; Angelini A; Blömstrom-Lundqvist C; Colonna P; De Sutter J; Ernst S; Goette A; Gorenek B; Hatala R; Heidbüchel H; Heldal M; Kristensen SD; Kolh P; Le Heuzey JY; Mavrakis H; Mont L; Filardi PP; Ponikowski P; Prendergast B; Rutten FH; Schotten U; Van Gelder IC; Verheugt FW
A practical guide for the use of boceprevir and telaprevir for the treatment of hepatitis C	J VIRAL HEPATITIS	19 Suppl 2:1-26	4.09	Jacobson IM; Pawlotsky JM; Afdhal NH; Dusheiko GM; Forns X; Jensen DM; Poordad F; Schulz J
Actualización de las guías de la Sociedad Europea de Cardiología (ESC) para el manejo de la fibrilación auricularde 2010 Elaborada en colaboración con la Asociación Europea del Ritmo Cardiaco	REVISTA ESPANOLA DE CARDIOLOGIA	66(1):54.e1-54	2.53	Autores/miembros del Grupo de Trabajo; Camm AJ; Lip GY; Caterina RD; Savelieva I; Atar D; Hohnloser SH; Hindricks G; Kirchhof P; Comité de la ESC de Guías para la Práctica Clínica (CGPC); Bax JJ; Baumgartner H; Ceconi C; Dean V; Deaton C; Fagard R, Funck-Brentano C; Hasdai D; Hoes A; Kirchhof P; Knuuti J; Kolh P; McDonagh T; Moulin C; Popescu BA; Reiner Z; Sechtem U; Anton Sirnes P; Tendera M; Torbicki A; Vahanian A, Windecker S; Revisores del documento, Vardas P; Al-Attar N; Alfieri O; Angelini A; Blömstrom-Lundqvist C; Colonna P, De Sutter J; Ernst S; Goette A; Gorenek B; Hatala R; Heidbüchel H; Heldal M; Dalby Kristensen S; Kolh P; Le Heuzey JY; Mavrakis H; Mont L; Perrone Filardi P; Ponikowski P; Prendergast B; Rutten FH; Schotten U; Van Gelder IC; Verheugt FW
Clinical neuropathology practice guide 5-2012: Updated guideline for the diagnosis of anti-neuronal antibodies	CLINICAL NEUROPATHOLOGY	31: 337-341	1.04	Hoeftberger R; Dalmau J; Graus F

Title	Associated Journal Short Text	Reference	IF	Authors
Clinical practice guidelines: quality of colonoscopy in colorectal cancer screening	ENDOSCOPY	44(4):444-51	5.21	Jover R; Herráiz M; Alarcón O; Brullet E; Bujanda L; Bustamante M; Campo R; Carreño R; Castells A; Cubiella J; García-Iglesias P; Hervás AJ; Menchén P; Ono A; Panadés A; Parra-Blanco A; Pellisé M; Ponce M; Quintero E; Reñé JM; Sánchez del Río A; Seoane A; Serradesanferm A; Soriano Izquierdo A; Vázquez Sequeiros E; Spanish Society of Gastroenterology; Spanish Society of Gastrointestinal Endoscopy Working Group
Comments on the ESC guidelines for the management of acute coronary syndromes in patients presentingwithout persistent ST-segment elevation. A report of the Task Force of the Clinical Practice Guidelines Committeeof the Spanish Society of Cardiology	REV ESP CARDIOL	65(2):125-30	2.53	Grupo de Trabajo de SEC para Guía ESC2011 de SCASEST; Fernández-Ortiz A; Pan M; Alfonso F; Arós F; Barrabés JA; Bodí V; Cequiera A; García-Moll X; Jiménez-Candil J; López-Palop R; Peña C; Worner F; Comité de Guías de Práctica Clínica de SEC; Alonso Gómez AM; Anguita M; Cequier A; Comín J; Fernández-Ortiz A; Pan M; Worner F; Alonso J; Bardají A; Barón-Esquivias G; Bover R; Angel-Ferrer J; Goicolea J; Gómez-Doblas JJ; Iñiguez A; Mainar V; Marín F; Pedreira M; Roldán I; Sabaté M; Sánchez PL; Sanchis J
Comprehensive risk reduction in patients with atrial fibrillation: emerging diagnostic and therapeutic options–areport from the 3rd Atrial Fibrillation Competence NETwork/ European Heart Rhythm Association consensusconference	EUROPACE	14(1):8-27	1.98	Kirchhof P; Lip GY; Van Gelder IC; Bax J; Hylek E; Kaab S; Schotten U; Wegscheider K; Boriani G; Brandes A; Ezekowitz M; Diener H; Haegeli L; Heidbuchel H; Lane D; Mont L; Willems S; Dorian P; Aunes-Jansson M; Blomstrom-Lundqvist C; Borentain M; Breitenstein S; Brueckmann M; Cater N; Clemens A, Dobrev D; Dubner S; Edvardsson NG; Friberg L; Goette A; Gulizia M; Hatala R; Horwood J; Szumowski L; Kappenberger L; Kautzner J; Leute A; Lobban T; Meyer R; Millerhagen J; Morgan J; Muenzel F; Nabauer M; Baertels C; Oeff M; Paar D; Polifka J; Ravens U; Rosin L; Stegink W; Steinbeck G; Vardas P; Vincent A; Walter M; Breithardt G; Camm AJ
Consensus document of the spanish association for the study of the liver on the treatment of Hepatitis B infection (2012)	GASTROENTEROLOGÍA Y HEPATOLOGÍA	35: 512-528	0.73	Buti M; Garcia-Samaniego J; Prieto M; Rodriguez M; Sanchez-Tapias JM; Suarez E; Esteban R
Diagnosis and treatment of lupus nephritis. Consensus document from the systemic auto-immune disease group(GEAS) of the Spanish Society of Internal Medicine (SEMI) and Spanish Society of Nephrology (S.E.N.)	NEFROLOGÍA	32 Suppl 1:1-35	1.00	Ruiz Irastorza G; Espinosa G; Frutos MA; Jiménez Alonso J; Praga M; Pallarés L; Rivera F; Robles Marhuenda A; Segarra A; Quereda C; Spanish Society ofInternal Medicine (SEMI); Spanish Society of Nephrology (SEN)

Title	Associated Journal Short Text	Reference	IF	Authors
EASL clinical practical guidelines: management of alcoholic liver disease	JOURNAL OF HEPATOLOGY	57(2):399-420 AUG 2012	9.26	Mathurin P; Hadengue A; Bataller R; Addolorato G; Burra P; Burt A; Caballeria J; Cortez-Pinto H; P. Day C; H. Forrest E; Gual A; A. Leon D; Lligoña A; Jepsen P; Mueller S; Pageaux GP; Roskams T; K. Seitz H; Stickel F.
EASL-EORTC clinical practice guidelines: management of hepatocellular carcinoma	EUROPEAN JOURNAL OF CANCER	48(5):599-641	5.54	European Association for Study of Liver; European Organisation for Research and Treatment of Cancer
European Position Paper on Rhinosinusitis and Nasal Polyps 2012	RHINOLOGY	(23):3 Supplement	1.32	Fokkens WJ; Lund VJ; Mullol J; Bachert C; Alobid I; Baroody F; Cohen N; Cervin A; Douglas R; Gevaert P; Georgalas C; Goossens H; Harvey R; Hellings P; Hopkins C; Jones N; Joos G; Kalogjera L; Kern B; Kowalski M; Price D; Riechelmann H; Schlosser R; Senior B; Thomas M; Toskala E; Voegels R; Wang de Y; Wormald PJ
Executive summary of European Task Force document on diagnostic tools in rhinology	RHINOLOGY	50(4):339-52	1.32	Hellings PW; Scadding G; Alobid I; Bachert C; Fokkens WJ; Gerth van Wijk R; Gevaerts P; Guilemany J; Kalogjera L; Lund VJ; Mullol J; Passalacqua G; Toskala E; van Drunen CM
Practical guide to skin prick tests in allergy to aeroallergens	ALLERGY	67(1):18-24	6.27	Bousquet J; Heinzerling L; Bachert C; Papadopoulos NG; Bousquet PJ; Burney PG; Canonica GW; Carlsen KH; Cox L; Haahtela T; Lodrup Carlsen KC; Price D; Samolinski B; Simons FE; Wickman M; Annesi-Maesano I; Baena-Cagnani CE; Bergmann KC; Bindslev-Jensen C; Casale TB; Chiriac A; Cruz AA; Dubakiene R; Durham SR; Fokkens WJ; Gerth-van-Wijk R; Kalayci O; Kowalski ML; Mari A; Mullol J; Nazamova-Baranova L; O'Hehir RE; Ohta K; Panzner P; Passalacqua G; Ring J; Rogala B; Romano A; Ryan D; Schmid-Grendelmeier P; Todo-Bom A; Valenta R; Woehrl S; Yusuf OM; Zuberbier T; Demoly P; GlobalAllergy and Asthma European Network; Allergic Rhinitis and its Impact on Asthma
RBC-transfusion guidelines update	LEUKEMIA RESEARCH	36(5):659-60	2.92	Gale RP; Barosi G; Barbui T; Cervantes F; Dohner K; Dupriez B; Gupta V; Harrison C; Hoffman R; Kiladjian JJ; Mesa R; Mc Mullin MF; Passamonti F; Ribrag V; Roboz G; Saglio G; Vannucchi A; Verstovsek S

Title	Associated Journal Short Text	Reference	IF	Authors
Recommendations from the Spanish Oncology Genitourinary Group for the treatment of patients with metastatic castration-resistant prostate cancer	CRITICAL REVIEWS IN ONCOLOGY HEMATOLOGY	83(3):341-52	4.41	Climent MA; Piulats JM; Sanchez-Hernandez A; Arranz JA; Cassinello J; Garcia-Donas J; Gonzalez del Alba A; Leon-Mateos L; Mellado B; Mendez-Vidal JM; Perez-Valderrama B
Saudi guidelines for the diagnosis and management of hepatocellular carcinoma: technical review and practice guidelines	ANN SAUDI MED	32(2):174-99	1.07	Abdo AA; Hassanain M; AlJumah A; Al Olayan A; Sanai FM; Alsuhaibani HA; Abdulkareem H; Abdallah K; AlMuaikeel M; Al Saghier M; Babatin M; Kabbani M; Bazarbashi S; Metrakos P; Bruix J; Saudi Association for the Study of Liver Diseases and Transplantation; Saudi Oncology Society
SEOM clinical guidelines for myeloid growth factors	CLINICAL & TRANSLATIONAL ONCOLOGY	14 (7): 491-498 JUL 2012	1.33	Munoz Langa J; Gascon P; De Castro J
Spanish consensus on the use of natalizumab (Tysabri (R))-2011	NEUROLOGÍA	27: 432-441	0.79	Fernandez O; Garcia-Merino J A; Arroyo R; Alvarez-Cermeno JC; Arbizu T; Izquierdo G; Saiz A; Olascoaga J; Rodriguez-Antigueedad A; Prieto JM; Oreja-Guevarak C; Hernandez M A; Montalban X
Position paper of the Catalan Society of Gastroenterology: treatment of Genotype 1 Chronic Hepatitis C Virus with Triple Therapy	GASTROENTEROLOGÍA Y HEPATOLOGÍA	35: 667-674	0.73	Bruguera M; Esteban R; Forns X; Planas R; Quer JC; Sola R; Vergara M

Clinical Trials

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

The table below summarizes the number of clinical trials approved by the Clinical Research Ethics Committee (CREC) in the past years. Of note is the increasing number of clinical trials designed and promoted by the investigators of the IDIBAPS setting themselves:

Approved clinical trials

Year	Clinical Trials presented to the CREC	Clinical trials promoted by IDIBAPS investigators
2010	219	12
2011	232	26
2012	293	33

Clinical trial type	Approved in 2012
Single-centre trial	21
Multicentre (reference ethics committee)	69
Multicentre (concerned ethics committee)	150
Observational/non-comparative phase IV study	32
Medical devices	19
Other	2
Total	**293**

Patents

A list is provided below of the patents that have evolved during 2012:

Patents applied for:

Number	Inventors	Owners	Title	Type
EP12382048.2	M. Batlle, P. García de Frutos	IDIBAPS, CSIC	Ús de la proteïna soluble AXL com a biomarcador d'insuficiència cardíaca	Diagnostic
EP 12380048.4	J. Dalmau	IDIBAPS, ICREA	Diagnostic Method for Detecting a New Form of Autoimmune Encephalitis	Diagnostic
P2012231023	C. Fondevila, JC García-Valdecasas	Hospital Clínic, Grífols	Dispositivo para preservar un injerto hepático	Treatment
P200803416	J. Bosch, A. de Gottardi	Hospital Clínic, Fundació Clínic, UB	Catéter percutáneo y método para medir presión en vasos sanguíneos	Treatment
ES200901738	E. Campo, V. Pajares, O. Salamero	Hospital Clínic, Fundació Clínic, IDIBAPS, UB	Pronòstic Molecular de limfomes de mantell indolent	Diagnostic
EP10382224.3	A. Sánchez-Fueyo, F. Bohne, J. Lozano, M. Mart	Hospital Clínic, CIBEREHD	Uso de hepcidina como diagnóstico y terápia de tolerancia hepática. Determinación en biopsia de hígado	Diagnostic, Treatment
P201230461	J.C. Fernández-Checa, C. García-Ruiz, A. Morales, A. Colell, M. Marí S. Núñez	CSIC, CIBEREHD	Aplicación terapéutica de Necrostatina-1 en esteatohepatitis	Treatment
PCT/ ES2010/070531	E. Campo	Hospital Clínic, Fundació Clínic, IDIBAPS, UB	Pronòstic Molecular de limfomes de mantell indolent	Treatment
PCT/ EP2010/070800	A. Urbano	Hospital Clínic, CNIC, SAS	Células mesenquimales para tratamiento de la hematopoyesis	Treatment

Patent Cooperation Treaty (PCTs):

Number	Inventors	Owners	Title	Type
PCT/ EP2012/059886	J. Panés	Hospital Clínic, Ciberehd	Teràpia cel·lular per la malatia de Chron	Treatment
PCT/ EP2012/056385	S. Sánchez	Fundació Clínic, IDIBAPS, ISCIII	Nou vector per vacuna contra HIV	Treatment
PCT/ EP2012/059966	F. Lozano	Hospital Clínic, Fundació Clínic, UB	Uso de CD5 soluble como coadyuvante para terapias oncológicas	Treatment
PCT/ EP2012/060852	S. Puig	ISDIN, IDIBAPS, Hospital Clínic	Pomada per prevenció i millora del camp de cancerització	Treatment
PCT/ ES2012/070555	R. Sanmartí	CSIC, Fundació Clínic	Péptidos quiméricos derivados de la proteína vimentina con utilidad para el diagnóstico de la artritis reumatoide	Diagnostic

Spin-off companies

The knowledge dealt with from the IDIBAPS usually completes its cycle when transferred to the industry. In other cases the link with the centre is maintained through the creation of spin-off companies. Spin-off companies created by IDIBAPS researchers are:

IMMUNNOVATIVE DEVELOPMENTS S.L. (2010)
This spin-off company promoted by Dr. Francisco Lozano was created in February 2010, based on the transference of two patents pertaining to the University of Barcelona, the Hospital Clínic de Barcelona, and the Fundació Clínic per a la Recerca Biomèdica. The activity of IND focuses on the development of new biological therapies for the prevention and treatment of inflammatory disorders with an immune basis.
For further information: www.immunnovative.com

BIONURE (2009)
Spin-off of Hospital Clínic/IDIBAPS and CSIC for the development of new neuroprotective drugs for the treatment of multiple sclerosis and other neurological diseases. Bionure was promoted by Dr. Pablo Villoslada.
For further information: www.bionure.com

TRANSMURAL BIOTECH (2009)
Spin-off of the Hospital Clínic and the UB, created by Dr. Eduard Gratacós, for the development and commercialization of different diagnostic devices in the gynecology field.
For further information: www.transmuralbiotech.com

LINKCARE (2009)
Linkcare HS administers a Patient-Centric, Case Management oriented Open Health Care model that has been designed as a joined effort of several leading medical care research centers in Europe leaded by Hospital Clínic. It was promoted by Dr. Josep Roca. Linkcare's Open Source platform links clinical data from different systems such as Primary Care Information (PCIS), Hospital Information (HIS), Electronic Health Record (EHR) and Enterprise Resource Programming (ERP) Systems with a library of customized patient profile protocols. Linkcare application main areas are: Chronicity, Fragility, End of life care, Reproduction and perinatology, Wellness and Clinical Research.
For further information: info@linkcare.es

NEUROTEC PHARMA (2006)
This R&D company founded by Dr. Nicole Mahy centres its activity on the development of new diagnostic and therapeutic tools for acute and chronic central nervous system diseases that occur with inflammation and/or neurodegeneration such as Stroke, Multiple Sclerosis (MS), Amyotrophic Lateral Sclerosis (ALS), Parkinson (PD) and Alzheimer disease (AD), among others.
For further information: www.neurotec-pharma.com

RESEARCH FUNDING

The funding obtained from public and private institutions is one of the main driving forces of research. The table below shows the large number of new projects granted in 2012 by different entities that make the excellence of the IDIBAPS possible:

Public funding	
Spanish institutions	**Number of Projects**
Instituto de Salut Carlos III (MINECO)	59
Ministerio de Economia y Competitividad (MINECO) - Plan Nacional I+D+i	16
Ministerio de Sanidad, Política Social e Igualdad	10
CCAA, Generalitat de Catalunya - ACC10 i AGAUR	3
International institutions	
European Comission	12
National Institute of Health (NIH)	1

Private funding	
Funding Institutions	**Number of Projects**
Fundació Marató TV3	4
Fundación Mutua Madrileña	3
COIB - Col·legi Oficial Infermeria de Barcelona	3
Michael J. Fox Foundation for Parkinson	3
European Foundation for the Study of Diabetes	2
Fundació Agrupació Mutua	2
Fundación Areces	2
Fundació Santiago Dexeus	2
Asociación Española Contra el Cáncer (AECC)	1
Association for International Cancer Research	1
Caja Navarra	1
CHDI Foundation	1
Europea Hematology Association	1
Fondation Jerome Lejeune	1
Fundación Alicia Koplowitz	1
International Organization For the Study of Inflammatory Bowel	1
La Caixa "Obra Social"	1
MAPFRE	1
Ministry of Health and Social Affairs Government Offices of Sweden	1
Sdad. Española de Radiología Médica	1

IDIBAPS RESEARCHERS AND TECHNICAL PERSONNEL

IDIBAPS is firm in its belief that by investing in quality researchers, the benefits for the institute are multiple; from increased research capacity, to increased scientific impact and increased international recognition, thus helping towards its overall goal of becoming a European Centre of Excellence.

The following table shows the distribution of IDIBAPS researchers. It is worth to mention that more than 400 IDIBAPS researchers come from Hospital Clínic de Barcelona, University of Barcelona, IIBB-CSIC, and institutions other than IDIBAPS. The table below shows the origin of the 463 accredited investigators:

IDIBAPS researchers	
Hospital Clínic and University of Barcelona	141
Hospital Clínic	191
CSIC - IIBB	34
University of Barcelona	33
IDIBAPS	54
Fundació Clínic	5
ICREA	5
TOTAL	**463**

New grants started in 2012 for hiring researchers and technical personnel may come from different funding agencies:

Funding agency or organisation	Category	# grantees
ISCIII - MINECO	Predoc (FI)	1
	Posdoc Sara Borrell	1
	Miguel Servet	1
	ISIS - Invest.Senior	1
	PostMir (Rio Hortega)	4
	Support Technician	4
	BAE	4
MINECO	Predoc (FPI)	8
	Predoc (FPU)	7
	Posdoc (Juan Cierva)	5
	Ramon y Cajal	2
	Support Technician	1
	Short Stays	5
CCAA - GenCat	Predoc (FI)	3
	Posdoc (BP)	3
	Stays	2
Fundació Catalana de Trasplantament	Predoc	1
IDIBAPS' calls	50/50	2
	Post-doctorate BIOTRACK	4

INSTITUCIÓ CATALANA DE RECERCA I ESTUDIS AVANÇATS (ICREA)

The Catalan Institute for Research and Advanced Studies (Institució Catalana de Recerca i Estudis Avançats, ICREA) is a foundation supported by the Catalan Government through the Catalan Ministry of Economy and Knowledge (Departament d'Economia I Coneixement) that aims to recruit top scientists for the Catalan R&D system. IDIBAPS has five ICREA investigators that contribute knowledge, experience and leadership for the teams to which they have been incorporated:

Dr. Josep M. Llovet

Translational research group in liver oncology

Dr. Josep Dalmau

Autoimmunity against synaptic antigens

The *Translational research group in liver oncology* was created in 2006 by Dr. Josep M. Llovet, ICREA Research Professor of the IDIBAPS and Professor of Medicine of the *Mount Sinai School of Medicine*. The group is composed of 10 people from the IDIBAPS and leads an international consortium on genomic research in liver cancer, the *HCC Genomic Consortium,* with about 30 investigators. In 2009 it received the *AACR-Landon International Innovator Award*, and was acknowledged as a Singular Research Group by the Catalan Government. In 2010 the group started the coordination of a European FP7-HEALTH project, the HEPTROMIC consortium, involving the coordination of 6 academic centres and 2 companies, with the purpose of identifying new oncogenes and treatment targets. In 2011, the group was awarded with the grant of the Spanish Association againt Cancer (Asociación Española contra el Cancer, AECC). Finally, during this year Dr. Llovet has been nominated as President of the International Liver Cancer Association (ILCA), and afterwards he received the Hans Popper International award (2012) and the Josep Trueta award (2013).
The fundamental contributions of the group during the last 5 years have been the following:

- Definition of a molecular classification of hepatocellular carcinoma (Hoshida, *New England Journal of Medicine* 2008); Chang, Can Res, 2008; Hoshida, *Cancer Res* 2009; Villanueva, *Gastroenterology* 2011; Minguez, *J Hep* 2011, Hoshida, *Gastroenterology* 2013) and cholangiocarcinoma (Sia, Gastroenterology 2013).
- Identification of key oncogenes in hepatocarcinogenesis, such as miRNA Let-7 (Viswanathan, *Nature Genetics* 2009; Toffanin, *Gastroenterology* 2011), EGF and c-MET (Keng, *Nature Biotech* 2009), AEG-1 (Yoo, *J Clin Invest*, 2009) and the signalling pathway of IGFR1 (Tovar, *J Hepatol* 2010), Wnt (Lachenmayer, *Clin Can Res* 2012) and Notch (Villanueva, *Gastroenterology* 2012).
- Leadership of EASL-EORTC Guidelines: Dr Llovet has been working as Chair of the Clinical Practice Guidelines on Management of HCC endorsed by EASL and EORTC and published in *J Hepatology* 2012 and *European Journal of Cancer* 2012, and guidelines of design of clinical trials (Llovet, *J Nat Can Inst* 2008).

The Autoimmunity Against Synaptic Antigens team is led by Dr. Josep Dalmau i Obrador, ICREA Research Professor of the IDIBAPS and Professor of Neurology at the University of Pennsylvania in Philadelphia. Dr. Dalmau is a clinical neuro-oncologist trained and working as Associate Professor of Neurology in the *Memorial Sloan-Kettering Cancer Center* in New York. His research focuses on a group of diseases located at the intercrossing of autoimmunity, cancer and synaptic proteins. This includes the description of new syndromes, the associated immune mechanisms, isolation of the target antigens, and the development of diagnostic tests and treatment strategies. These studies have identified 17 autoantigens and have led to diagnostic tests - some of which are used all over the world.
In the last 5 years Dr. Dalmau has discovered a new category of autoimmune processes resulting in alterations of memory, behaviour and cognition, and which may cause psychosis. These processes are associated with autoimmune responses characterized by antibodies targeted to synaptic proteins and receptors such as for example the glutamate receptors (NMDA, AMPA) or the GABA(B) receptors, or to synaptic proteins related with epilepsy (LGI1, Caspr2), among others. Once the antigens have been identified, Dr. Dalmau's group studies focus on the cellular and molecular mechanisms whereby the antibodies alter the function of the synaptic proteins and receptors and produce the symptoms. The results of these studies have had an impact on many medical disciplines and on neuroscience, since they offer a link between immune processes and synaptic activity related to memory, behaviour, psychosis, epilepsy and neuron degeneration.

icrea
Institució Catalana de Recerca i Estudis Avançats

Dr. Albert Pol

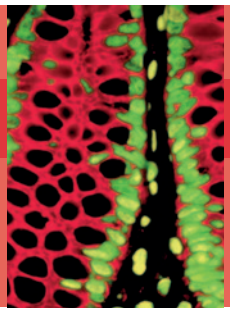
Cell proliferation and signalling

The aim of Dr. Pol's group is to characterize - in health and in illness - the cellular processes that are regulated or altered due to lipid accumulation within the cells. All prokaryote and eukaryote cells maintain the evolutive competence of accumulating lipids in organelles known as intracellular lipid droplets. In healthy cells, a small population of lipid droplets is present at all times, though these organelles become abundant in response to different physiopathological conditions such as obesity, diabetes, fatty liver disease (steatosis), liver cirrhosis, viral hepatitis, arteriosclerosis and even cancer. Globally, these disorders affect over half of the population in western countries.
Recent advances in the cellular biology of lipid droplets have shown the latter to be multifunctional organelles that are metabolically very active and thus constitute key elements in the complex exchange of lipids and proteins in constant movement within the cells. In this scenario, the group is especially focused in the cellular cost of the accumulation of cholesterol in organelles and the role of the caveolin protein in the regulation of these fluxes.

Dr. Maria V. Sánchez-Vives

Cortical networks and EVENT Lab (Virtual Environments in Neuroscience and Technology)

Dr. Sánchez-Vives joined the IDIBAPS in 2008 and is the head of the Systems Neurosciences Group of the IDIBABS, acknowledged by the AGAUR as a Consolidated Research Group.
Understanding how the brain processes information and how brain activity is generated and modulated in neuronal networks is crucial for intervening in cerebral function when the latter has been altered.
Neuron connectivity and the cellular and synaptic properties conform brain activity, and the latter at the same time has effects upon the network. The objective of the Dr. Sánchez-Vives' group is to determine how these processes take place, particularly as regards the generation of brain rhythms: how information is generated, synchronized or encoded. These activity patterns are altered under pathological conditions, and their restoration may contribute to recover function. The models of diseases in genetically modified mice allow us to carry out such studies.
Another line of research of the group is referred to the integration of information in the brain cortex, resulting in body representation. They use virtual reality and brain-computer interfaces with a view to understanding and acting upon these processes. At present, and within the setting of a project integrated in the European Union, the group is studying the usefulness of body representation in virtual reality for the treatment of pain and the restoration of motor function.



Dr. Antonio Postigo

Group of Regulation of Gene Expression in Cell Differentiation and Cancer

Dr. Postigo's group investigates the molecular mechanisms involved in the regulation of gene expression during normal cell differentiation and in cancer, focusing on the ZEB family of transcription factors. ZEB1 and ZEB2 modulate cell differentiation, maintain stemness in normal and cancer stem cells and participate in several stages of tumor initiation and progression. Thus, ZEB factors are essential effectors of the pro-oncogenic effects of several pathways involved in cancer, namely, Wnt, TGFbeta, Notch and Ras. ZEB1 and ZEB1 cooperate with gain-of-function mutations of these pathways in oncogenic transformation, induction of epithelial-mesenchymal transition (EMT) and tumor invasiveness and metastasis.
The group uses a wide number of vitro techniques and in vivo models to address two main research lines:

- Study the role of ZEB1 and ZEB2 in the regulation of normal differentiation in epithelial, skeletal muscle and hematopoietic cells.
- Study of the mechanisms by which ZEB1 and ZEB2 regulate tumorigenesis, cancer cell stemness and EMT during cancer progression in colorectal and breast carcinomas.

Research of the group at IDIBAPS has been funded by public (Spanish Ministry of Economy and Competitiveness, the European Union, Catalan Agency for Universities and Research) and private (Spanish Association Against Cancer-AECC, O. Torres Foundation, AVON Cosmetics SAU, La Caixa Foundation, and the Academy of Medical Sciences of Catalonia and the Balearic Islands) grants.

ISIs

IDIBAPS is a research Institute accredited through the Spanish Government's Health Research Institutes Accreditation Programme. This initiative includes the ISIS contracts to attract Senior researchers with a proven experience leading research teams.

Dr. Cristina Fillat

Gene Therapy and Cancer Group

The Gene Therapy and Cancer Group led by Cristina Fillat started at the IDIBAPS in September 2011, with the support of the ISIS Programme from the Instituto de Salud Carlos III and acknowledged by the Catalan Government as a Singular Research Group.Dr. Fillat's group research focuses on the study of the molecular and cellular basis of pancreatic ductal adenocarcinoma and the development of novel experimental therapies based on gene transfer and virotherapy. The main research lines are:

- Identify specific cellular pathways and molecular determinants altered in pancreatic tumors.
- Development of antitumoral therapies based on oncolytic adenovirus. Main interest is devoted to the search for sensitizers of adenoviral oncolysis and to study their mechanisms of synergie. Special emphasis is also applied to engineer tumor-selective oncolytic adenoviruses.
- Explore novel non-viral experimental therapies for pancreatic tumors.

Major Research achievements during this year have been: a) demonstration of the feasibility of irreversible electroporation as a novel approach to treat pancreatic tumors with minimal toxicity in mouse models of pancreatic carcinogenesis(Jose et al. Cancer Lett. 2012); b) in collaboration with Dr. Hans Clevers' group in Netherlands, our expertise in vector engineering and mouse models have been fundamental to decipher the role of TCF4 in the control of glucose metabolism (Boj et al. Cell 2012); c) also a significant contribution has emerged from the collaboration with Dr. Mark Isalan, at the Center for Genomic Regulation in Barcelona and showed the effectiveness of a gene therapy approach based on synthetic zinc fingers to selectively repress a mutant disease protein (Garriga-Canut et al. Proc. Natl. Acad. Sci. 2012).

Dr. Pere Santamaria

Pathogenesis and Treatment of Autoimmunity

Dr. Santamaria's laboratory has two distinct components: one for purely basic biomedical research which studies the role of particular genes and molecules in the development and functioning of the immune system; and another, more applied, based on the study of the immunological effects of a new therapeutic platform they have developed for the treatment of autoimmune diseases, which include type 1 diabetes, lupus and autoimmune diseases of the central nervous system. This treatment, based on nanotechnology, works by way of an immunological mechanism for protection against autoimmunity designed by mother nature, which they have learned to manipulate by using a new type of drug, also discovered by Santamaria's group. One of the main objectives is to start using this therapeutic platform with patients through the conducting of clinical trials.

IDIBAPS 50/50 PROGRAM

With the final mission to strengthen translational clinical research, IDIBAPS and Hospital Clinic of Barcelona have just started 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. This junior group leaders are called to be the future clinical research group leaders that this institution will need.

Dr. Felicia Alexandra Hanzu (ICMDM / IDIBAPS)

Endocrine disorders: crosstalk between molecular and metabolic determinants

Dr. Ignacio Revuelta (ICNU / IDIBAPS)

Translational research in posttransplant neoplasia

Dr. Hanzu´s group studies the crosstalk between molecular and metabolic determinants in endocrine pathologies, respectively the molecular determinants underlying physiopathological mechanisms of endocrine tumors. The aim is to translate knowledge from the basic research, in endocrine tumors, into the clinical practice by focusing on the development of new treatment strategies. Adrenal hormones secreted in an autonomous manner, as in endocrine tumors, determine disruption of the endocrine circadian rhythms inducing aberrant systemic tissue responses. Visceral adipose tissue, one of the targets of cortical and medulla adrenal hormones, has a primordial role in the development of cardiometabolic diseases. The endocrine tumors group is studying the impact of adrenal hormone secreting tumours on the visceral adipose tissue plasticity, on the secreted adipokines and their effect on the endothelium. Patients with endogenous hypercortisolism present an increased risk of cardiovascular disease even after cure. The understanding of the epigenetic mechanisms, underlying the altered cardiometabolic memory, is a further goal of this group. The group started up in 2012, after Dr. Hanzu was incorporated to IDIBAPS and Hospital Clinic. Milestones of her scientific formation are the Rio Hortega fellowship and her trainings in translational research at the Free University of Brussels and the University of Medicine Munich.

The Translational Research group in Posttransplant Neoplasia led by Ignacio Revuelta started up at the IDIBAPS in Jannuary 2012. Dr. Revuelta after his stay at Harvard Medical School in Boston was incorporated to IDIBAPS and Hospital Clínic in Jannuary 2012 within the clinical / research programme called "50/50".
Cancer is the second leading cause of mortality in general and transplant population, and cancer rates are higher after kidney transplantation compared with the general population. Several pathogenic factors have been implicated in oncogenesis and metastasis development in transplant patients, such as the direct secondary effects of exposure to immunosuppressive drugs. The use of mTOR inhibitors as immunosuppressive therapy with antioncogenic, antiproliferative and antiangiogenic properties plays a crucial role in the development of posttransplant neoplasms, tumoral progression, and the potential for metastasis. The group has been studying and characterizing the different behavior of posttransplant neoplasia. However, knowledge about the understanding of oncogenesis and metastasis development in this particular population is still unresolved, and information on long-distance communication between a tumor and the host organs is unknown.

SCIENTIFIC CORE FACILITIES

Excellent biomedical research requires the use of high-cost techniques and equipment. In addition, the high complexity of many of these techniques requires the dedication of specialised personnel. In many cases a given technique is applied by different research teams without any of them requiring exclusive and permanent use of the methodology.

IDIBAPS promotes the setting up of common service core facilities to support research for use by all researchers, with the purpose of improving the performance and profitability of investments and efficiency in the use of available resources.

IDIBAPS has **6 scientific core facilities** of its own, mostly located in the CEK building:

- Biobank of Hospital Clínic – IDIBAPS (Page 34)
- Bioinformatics (Page 37)
- Biostatistics and Data Management (Page 38)
- Cytometry and Cell Sorting (Page 39)
- Functional Genomics (Page 40)
- Medical Imaging (Page 41)

BIOBANK OF HOSPITAL CLÍNIC - IDIBAPS

INTRODUCTION

The Biobank is a centralised institutional support core facility for coordinating the collection, processing, storage and transfer of human biological samples to promote biomedical research of the highest standard.

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 collected by the research groups.

All the procedures performed at the Biobank are carried out under ISO9001 certification.

When it was first set up, the Biobank had a dual mission:

- To provide the scientific community with standard, well-characterised biological samples with high added value, in order to promote, foster and develop biomedical research in accordance with current legislation.
- To standardise all the Institute's research sample collections (in accordance with article 67 of Law 14/2007 and Royal Decree RD1716/2011 related to Biomedical Research with human samples).

The 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 and which are available for scientific purposes for the consolidation of personalised medicine:

1. Neurological Tissue Bank

A nervous tissue repository (brain and spinal cord) created from donations from cadavers with or without neurological conditions, helping to facilitate research into neurological illnesses in order to improve diagnoses and enhance patient care.

2. Tumour Bank and Anatomical Pathology Collections

A Repository of tumour and non-tumour tissue samples from patients affected by a neoplasia, as well as tissue samples from other diseases, all surplus to diagnostic requirements from the Department of Anatomical Pathology in Hospital Clínic. This material is essential to providing current large-scale tissue research projects with the samples they require.

3. Blood and Fluid Bank

This repository contains samples of, among others, metabolic, inflammatory bowel, oncological, digestive, psychiatric and maternal and foetal diseases. It houses a large range of samples of scientific interest, primarily DNA, serum and plasma, which are provided by doctors' surgeries and laboratories where blood and fluid are taken for lab tests and blood and fluid donation.

Visit the web: **www.clinicbiobanc.org**

SERVICES

The Biobank of Hospital Clínic – IDIBAPS offers a wide variety of human biological samples along with services. The scientific community may make full use of the bank's equipment and professional staff to achieve their most ambitious goals. The work of the biobank goes beyond simply providing samples; they offer support to researchers during the various stages of projects requiring the use of biological samples.

HUMAN BIOLOGICAL SAMPLE PROVISION

- Nerve tissue from cadaveric donors affected by neurologic diseases.
- Frozen and paraffin-embedded tissues representing the most common neoplasms.
- DNA, serum, plasma and PBMCs from different diseases as well as from control donors.

TECHNICAL AND SCIENTIFIC ADVICE

- Creation and management of new collections.
- Methodology (technical guidance).
- Experimental design with human and animal tissue samples.
- Design and interpretation of immunohistochemical studies.
- Quality management programmes.
- Harmonization of quality procedures for the handling of DNA samples.
- Technical assessment for the handling of the Biobank equipment (laser microdissector, multiobserver microscope with software for morphometric analysis and a histological slide scanner with analysis software).

PRIVATE COLLECTIONS MANAGEMENT

- Collection management for multicentre studies.
- Storage of pre-existing collections.

HISTOLOGICAL TECHNIQUES

- Processing of frozen and paraffin-embedded tissues (macroscopy, cryopreservation, paraffin blocks, histological sections).
- Lasser microdissection.
- Tissue microarray construction (TMA).
- Histological staining.
- Definitive neuropathological diagnosis of neurological diseases.
- Slide scan and morphometric analysis.

CELLULAR TECHNIQUES

- Purification and cryopreservation of mononuclear cells.
- Immortalization of B lymphocytes.
- Erythrocyte isolation from whole blood.
- Cell counting.

MOLECULAR TECHNIQUES

- DNA extraction from peripheral blood.
- DNA/RNA/protein extraction from tissue (frozen and paraffin-embedded).
- WGA.
- Serum and plasma isolation.
- Immunohistochemistry.

EQUIPMENT

- -20ºC, -80ºC and -150ºC freezers with safety systems.
- Vapour phase liquid nitrogen tanks.

NEUROLOGICAL TISSUE BANK

- Cubicles for obtaining the material under sterile conditions.
- Instruments for preparing samples for the microscope.
- Filing cabinets for collecting paraffined samples.
- Gas filtration cabinet.
- Automated immunostaining appliance.
- Combination refrigerator and -40ºC freezer for preserving fungibles.
- Autoclave for sterilising surgical material.

TUMOUR BANK

- Equipment for preparing tissue microarrays (TMAs): TMA Master (3Dhistech) (UB Faculty of Medicine / FEDER).
- LaserTissue microdissection microscope with laser LMD7000 (Leica Microsystems).
- Microtomes and cryostat (Leica Microsystems).
- Tissue processor (Leica Microsystems).
- Bond Max III for automated immunohistochemistry (Leica Microsystems).
- Digital slide scanner Pannoramic Desk (3Dhistech).
- Multiobserver microscope BX43 with a 12Mpx photographic camera and the morphometric analysis software CellSens Dimension (Olympus).

BLOOD AND FLUID BIOBANK

- Programmable freezer with a controlled freezing ramp.
- "Chemagic MSM1®" automated device for obtaining DNA from large volumes of blood.
- "Tecan EVO150®" automated station for the aliquoting of samples.
- "CoulterZ1®" cells and particles counter.
- TC Automated Cell Counter (Bio Rad).
- Cabinets for isolating cells under sterile conditions.
- Cell immortalisation platform.
- Computer systems for managing samples and related data.
- ABF500 Automated Blood Fractionation system (RTS).

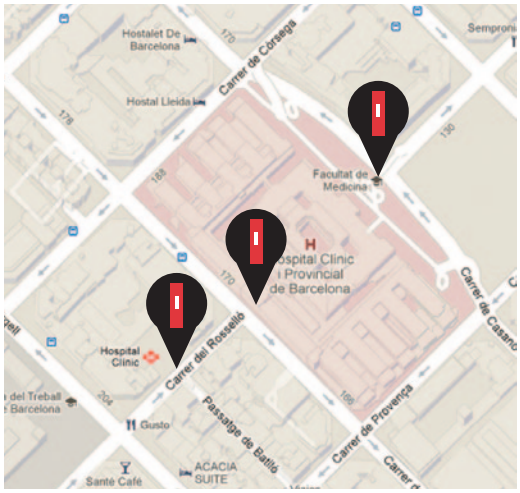
LOCATION

Neurological Tissue Bank
Faculty of Medicine UB
South wing, floor 0

Tumour Bank
CEK building
c/ Rosselló, 149-153, planta -1
Servei d'Anatomia Patològica (Hospital Clínic)
c/ Villarroel, 170. Escala 3, planta 5

Blood and Fluid Bank
CEK building
c/ Rosselló, 149-153, planta -1

Contact: **biobanc@idibaps.org**



PEOPLE

SCIENTIFIC COORDINATOR

Anna Bosch Comas, PhD (IDIBAPS)

STAFF

- **Joan Albert Barberà**, MD, PhD (Hospital Clínic)
  Director
- **Meritxell Rufet** (Fundació Clínic)
  Assistant Manager
- **Ángela Martín** (Fundació Clínic)
  Informed Consent Manager
- **Esther Barnadas** (IDIBAPS)
  Lab Manager

Neurological Tissue Bank

Manager: **Ellen Gelpí**, MD, PhD (IDIBAPS)

- **Maria Jesús Rey**, MD, PhD (UB)
  Neuropathologist. Senior Technician
- **Carina Antiga** (IDIBAPS)
  Secretary
- **Sara Charif** (IDIBAPS)
  Laboratory Technician
- **Rosa Rivera** (UB)
  Specialised Technician
- **Abel Muñoz** (Fundació Clínic)
  Autopsy Assistant
- **Leire Etxarri** (Fundació Clínic)
  Autopsy Assistant

Tumour Bank

Manager: **Miriam Cuatrecasas**, MD, PhD (Hospital Clínic)

- **Laura Gelabert** (Fundació Clínic)
  Laboratory Technician
- **Mónica Marín** (Hospital Clínic)
  Laboratory Technician
- **Raquel Bermudo Gascón**, PhD (Fundació Clínic)
  Tumour Bank Manager
- **Blanca Noemí Luján**, MD,
  PhD (Hospital Clìnic - IDIBAPS)
  Pathologist and Website Manager
  for the Catalan Tumour Bank Network
  (*Xarxa de Bancs de Tumors de Catalunya*)

Blood and Fluid Bank

Manager: **Verónica Fernandez Pascual**, PhD (IDIBAPS)

- **Anna Morales** (IDIBAPS)
  Laboratory Technician
- **Regina Cañaveras** (Fundació Clínic)
  Laboratory Technician

BIOINFORMATICS

INTRODUCTION

The Bioinformatics Unit is mainly devoted to analysis and support in the interpretation of data coming from OMICS disciplines (genomics, proteomics and metabolomics). The integration of data from these fields requires huge efforts in the development of common languages, tools, and specific databases. Differential expression or classification studies in every OMICS field usually face two big challenges: the high dimensionality and the small number of samples. Furthermore, biomedical research is frequently aimed at understanding very complex biological problems for the discovery of specific biological markers. It is then necessary to use sophisticated tools with complex statistical methodologies to derive information from the usual conditions of high-throughput experiments. At present, the emerging field of Systems Biology is aimed at analysing and integrating data from the entire OMICS field to ultimately create working models of entire biological systems.
Visit the web: bioinformatics.fcrb.es

SERVICES

Bioinformatics support different areas of biomedical research, particularly in OMICS technologies; development of new tools and diffusion:

- **Consultancy and Analysis:** counselling in experimental design; low-level and quality-control analyses; orientation on biostatistical resources; assistance in tools utilisation; intensive analysis of OMICS technology data in collaborative settings; interpretation of results.
- **Administration of Bioinformatic resources and development of new tools:** access to proprietary computer resources on Linux servers (especially in NGS projects); software management; development of customized tools and databases, particularly in web settings.
- **Dissemination:** course and seminar organisation.

EQUIPMENT

- 2 rack Servers HP ProLiant DL580 G7 4P Intel® Xeon® E7-4870 10-cores, 2,40GHz, Hyper-Threading Technology (80 threads per node), 30 MB CPU cache, 192 GB RAM. Internal Hard disk: 2 x 300GB 6G SAS 10K SFF. O.S.: 64b Suse Linux Enterprise Server configured with SGE System (Sun Grid Engine).
- Rack Server HP ProLiant DL580 G7 4P Intel® Xeon® E7-4850 10-cores, 2,00GHz, Hyper-Threading Technology (80 threads per node), 24 MB CPU cache, 128 GB RAM. Internal Hard disk: 2 x 300GB 6G SAS 10K SFF. O.S.: 64b Suse Linux Enterprise Server configured with SGE System (Sun Grid Engine).
- Rack Server HP ProLiant DL580 G7 2P Intel® Xeon® E7-4830 8-cores, 2,13GHz, Hyper-Threading Technology (32 threads per node), 24 MB CPU cache, 64 GB RAM. Internal Hard disk: 2 x 300GB 6G SAS 10K SFF. O.S.: 64b Suse Linux Enterprise Server.
- IBM eServer BladeCenter HS21 Server. 1P Intel® Xeon® E5-345 4-cores, 2,33 GHz. 8 MB CPU cache, 16GB RAM. Attached Hard Disk DAS: 500 GB (Raid 5). O.S.: 64b Suse Linux Enterprise Server.
- Rack Server HP ProLiant DL580 G5 4P Intel® Xeon® X7350 4-cores, 2,93GHz, 8 MB CPU cache, 32 GB RAM. Internal Hard disk: 2 x 146GB 6G SAS 10K SFF. O.S.: 64b Red Hat Enterprise Linux Server.
- High Performance Storage System (HPSS) for High Performance Computing (HPC) EMC-Isilon, 3 nodes X200, 24 TB (72 Tb, Raid 5), 12GB CPU cache, with internal infiniband connection. Scalability up to 15PB. O.S.: OneFS configured with Parallel NFS.
- External SAS storage HP MSA60, 8 TB 2U Serial Attach SCSI.
- Back up rack-mount tape autoloader - HP LTO-5 Ultrium. Capable up to 24TB of compressed capacity with hp p212/256 smart array controller.

LOCATION

CEK building
C/ Rosselló 149-153, -1 Floor.
Bioinformatics Core Facility CEK
bioinformatica@idibaps.org

PEOPLE

SCIENTIFIC COORDINATOR
Susana Kalko, PhD (IDIBAPS)

BIOSTATISTICS AND DATA MANAGEMENT

INTRODUCTION

The Biostatistics and Data Management Platform provides methodological and statistical support for research projects carried out by IDIBAPS and allied institutions. Depending on projects and availability, the platform may provide support to external public and private entities.

The platform's main objective is to promote cutting edge clinical research and to facilitate the necessary resources to carry it out.

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.

SERVICES

CONSULTING SERVICES

Short-term consulting services in methodology and statistics. Specific consultations are free to departments and institutes of Hospital Clínic and similar institutions. They include, but are not limited to: (a) statistical study design; (b) sample size calculation; (c) consulting on information collection methods for analysis; (d) methodological and statistical consulting for research projects.

A maximum duration of 2 hours is established for each session and service may be provided for a maximum of 2 sessions. Consultations requiring additional attention shall receive the same consideration as a project.

PROJECTS

Any services required by the client above and beyond those specified in the section on consulting services shall be rendered upon formal acceptance of the estimate and timetable provided.

Sample projects:

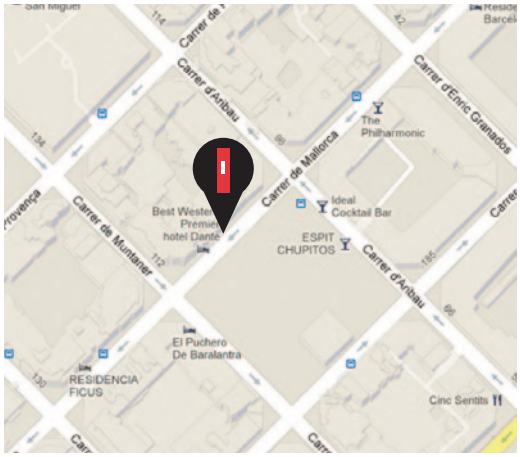
- Creation and maintenance of a clinical trial data base: (a) creation of the eCRF (electronic case report form); (b) creation and consensus of Data Management and Validation Plans with the research team; (c) traceable data export to analysis systems.
- Statistical analysis of clinical trials or other projects: (a) creation and consensus of the most appropriate Statistical Analysis Plan depending on data type and study objective; (b) creation of the most appropriate statistical program according to the objective of the study, with emphasis on the traceability of results; (c) creation of a statistical report and collaboration in writing and supervising subsequent follow-up articles.

EQUIPMENT

- Equipment includes a personal computer and statistics and data management programmes: nQuery, SAS, SPSS, EAST, JMP, MACRO.

LOCATION

Biostatistics and Data Management Core Facility
IDIBAPS (Institut d'investigacions Biomèdiques August Pi i Sunyer)
Hospital Clinic Barcelona
183, Mallorca Street, floor -1, 08036 Barcelona
ferran.torres@idibaps.org

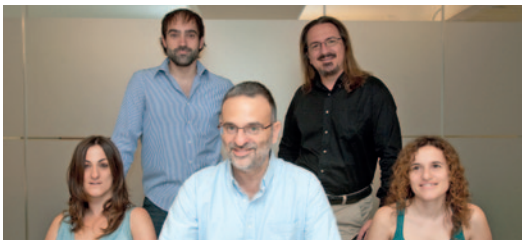


PEOPLE

SCIENTIFIC DIRECTOR:
Ferran Torres MD, PhD (IDIBAPS)
Scientific Director

STAFF

- **José Ríos** (IDIBAPS)
  Scientific Coordinator
  Training and Consultancy Manager
- **Abiguei Torrents** (Fundació Clínic – CAIBER)
  Junior Statistician
- **José Fernández Sardiña**
  (Fundació Clínic – CAIBER)
  Data Management Manager
- **Sandra Serrano** (Fundació Clínic – CAIBER)
  Data Management



CYTOMETRY AND CELL SORTING

INTRODUCTION

Flow cytometry is a technique for multiparametric analysis of particles, such as cells , by suspending them in a stream of fluid and passing them through a LASER. It allows for the simultaneous multiparametric analysis of the physical and/or chemical characteristics of up to thousands of particles per second. Each suspended particle passing through the beam scatters the LASER, and fluorescent chemicals found in the particle or attached to the particle may be excited into emitting light at a longer wavelength than the light source.

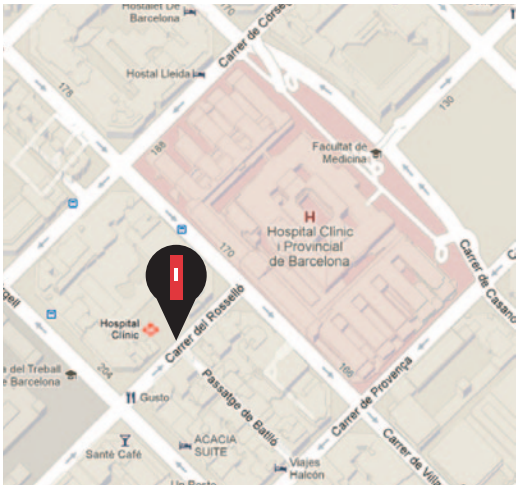
Fluorescence-activated cell sorting is a specialised type of flow cytometry. It provides a method for sorting a heterogeneous mixture of biological cells, one cell at a time, based on the specific light-scattering and fluorescent characteristics of each cell. It provides fast, objective and quantitative recording of fluorescent signals from individual cells as well as physical separation of cells of particular interest.

This technology has applications in molecular biology, pathology, immunology, plant biology and marine biology. It has broad application in medicine (especially in transplantation, haematology, tumour immunology and chemotherapy, prenatal diagnosis, genetics, etc.).

The Facility is subdivided into three rooms: FACS analysis and high-resolution images in flow room; data analysis room; and cell sorting room.

LOCATION

CEK building
C/ Rosselló 149-153, -1 Floor.
citometria@idibaps.org



SERVICES

- Analysis of population of interest.
- Apoptosis.
- Cell cycle, proliferation.
- Functional analysis.
- Stem cells.
- Viability.
- Analysis of microorganisms.
- Multiparameter quantitative trials on soluble molecules and phosphoproteins (CBA and CBA Flex Set), cell signalling.
- Cell sorting.
- Microparticles.
- High resolution microscopy in flow (cell signalling and molecular translocation, internalization, co-localization, cell-cell Interaction, morphology analysis, cell death and autophagy, cell cycle and mitosis, DNA damage and repair).
- User training.

EQUIPMENT

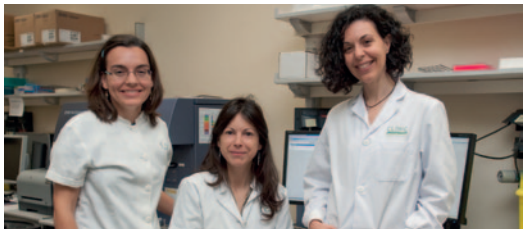
- BD FACSCalibur: 2 LASER, Up to 4 fluorescence.
- BD FACSCantol : 2 LASER, Up to 6 fluorescence.
- BD FACSCantoII: 3 LASER, Up to 8 fluorescence.
- BD LSRFortessa SORP + HTS: 4 LASER, Up to 16 fluorescence.
- BD LSRFortessa SORP: 5 LASER, Up to 18 fluorescence.
- AMNIS ISX: 2 digital cameras, Up to 12 fluorescence channels.
- BD FACSAriaII: 3 LASER, Up to 9 fluorescence.
- BD FACSAria SORP: 5 LASER, Up to 18 fluorescence.
- Magnetic cell sorter autoMACSPro.
- Data analysis: DIVA v6.1.3, CellQuestPro v6.0.3, ModFit LT v3.2, FlowJo v7.6.1, FCAPArray v1.0.1.

PEOPLE

SCIENTIFIC COORDINATOR AND HEAD OF FACILITY:
Isabel Crespo (IDIBAPS)

STAFF

- **Cristina López** (IDIBAPS)
  Specialist Technician
- **Laia Llinàs** (IDIBAPS)
  Specialist Technician



FUNCTIONAL GENOMICS

INTRODUCTION

The IDIBAPS Genomic Unit provides access to different genome-wide protocols.
The platform manages samples for genomic projects starting from quantitative and qualitative analysis of nucleic acids up to genome-wide gene expression, genotyping and gene-dose analysis using different platforms including real-time PCR and microarrays.

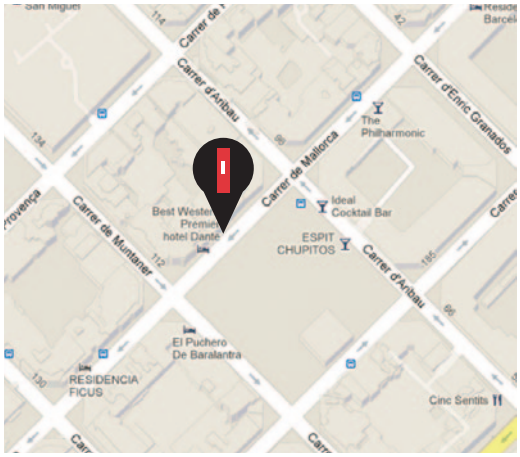
SERVICES

- Quantification of nucleic acids.
- Qualitative analysis of nucleic acids.
- Expression analysis by Real-time PCR.
- Genotyping analysis by Real-time PCR.
- Digital PCR (Fluidigm).
- Genome-wide expression analysis (Affymetrix microarrays).
- Genome-wide genotyping analysis (Affymetrix microarrays).
- High-throughput expression analysis (GeneTitan Affymetrix).
- High-throughput genotyping analysis (GeneTitan Affymetrix).
- CGH-Arrays (Agilent).
- Scanner Axon 4000B.
- Pyrosequencing.
- Next-generation sequencing (Illumina).

In addition to these services, the Core Facility offers advice on experimental design for transcriptomic studies, on extracting RNA and on analysis of microarray data.

LOCATION

CEK building
C/ Rosselló 149-153, -1 Floor.
genomica@idibaps.org



EQUIPMENT

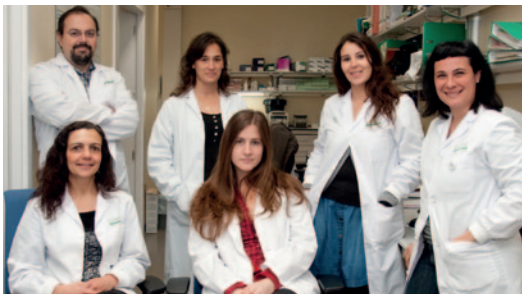
- NanoDrop.
- Sinergy2.
- Bioanalyzer 2100 (Agilent).
- Viia7 (Applied Biosystems).
- Fluidigim (BioMark).
- GeneChip Affymetrix genetic analysis system.
- GeneTitan Affymetrix genetic analysis system.
- Agilent platform.
- Axon 4000B scanner.
- PyroMark Q96 ID.
- GenomeAnalyzer IIx (Illumina).

PEOPLE

SCIENTIFIC COORDINATOR:
Pedro Jares, PhD (HC-UB)

STAFF

- **Elías Campo**, MD, PhD (HC-UB)
  Scientific Director
- **Magda Pinyol**, PhD (IDIBAPS)
  Unit Manager
- **Montse Sánchez** (IDIBAPS)
  Technician
- **Laura Plà** (IDIBAPS)
  Technician
- **Helena Suárez**, PhD (IDIBAPS)
  Specialist Technician
- **Anna Enjuanes**, PhD (IDIBAPS)
  Specialist Technician



MEDICAL IMAGING

INTRODUCTION

The main objectives of this Core Facility are:

- To provide services related to medical imaging techniques for researchers from IDIBAPS and other institutions, and to industries connected with health.
- To perform 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.
- Researcher training in techniques and basic research to enable them to conduct experimental and clinical studies, thereby allowing them to explore the advantages of translational research.

SERVICES

- Clinical Imaging Research (3T MRI Unit).
- Experimental Imaging Research (7T MRI Unit).
- Imaging Processing Lab.

EQUIPMENT

- Clinical Imaging Research (3T MRI Unit):
  - RM 3T- Siemens 3T TRIO, B17 software
  - 32 phased-array head coil
  - 8 phased-array head coil
  - Body coil
  - Others phase array coil
- Experimental Imaging Research (7T MRI Unit):
  - Bruker BioSpec 70/30 (gradient system of 400 mT/m)
  - Imaging volume coils for mice, rat and small cats or rabbits
  - Surface coil for rat and mouse brain imaging
  - Surface coil for rat heart imaging (with CINE acquisition sequence)
  - Volume coils for 1H/13C, 1H/31P and 1H/19F spectroscopy
  - Surface coil for 1H/13C spectroscopy
  - Electric stimulator for fMRI
  - Inhalation anaesthetic system including animal monitoring
  - 4 PC for image processing and analysis
- Image Processing Lab:
  - 3 dedicated workstations (1 Mac, 2 linux) and 7 high performance
  - PC (5 dual windows-linux, 2 windows) for image post-processing
  - 10 standard PC
  - Software licences: 10 Matlab, 2 LcModel, 1 AnalyzeDirect

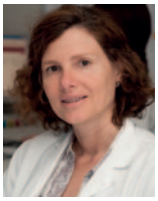
LOCATION

3T MRI Unit 7T MRI Unit:
Hospital Clinic de Barcelona, floor 0, 3a stairs
imatge@idibaps.org

Image Processing Lab:
CEK building
C/ Rosselló 149-153, -1 Floor.

PEOPLE

SCIENTIFIC COORDINATOR
Clinical Imaging Research
(3T MRI Unit):
Núria Bargalló Alabart, MD, PhD
(Hospital Clínic)



STAFF
Experimental Imaging Research (7T MRI Unit)

- **Guadalupe Soria Rodríguez**, PhD (IDIBAPS)

Image Analysis Advisor

- **Raúl Tudela**, PhD (CIBER-BBN, GIB-UB) CIBER-BBN, GIB-UB

Image Processing Lab

- **Carles Falcón Falcón**, PhD (IDIBAPS)

NETWORKING

The IDIBAPS collaboration network is wide reaching, spanning the five continents and more than 40 countries. IDIBAPS' researchers participate in hundreds of national and international consortiums:

- **IDIBAPS participates in all nine Spanish Biomedical Research Centres from the Instituto de Salud Carlos III (ISCIII).** A total number of 27 research groups from IDIBAPS participate in these national networks, and 3 of them are coordinated by an IDIBAPS researcher: CIBER of Diabetes and Metabolic Diseases, CIBER of Hepatic and Gastrointestinal Diseases, and CIBER of Respiratory Diseases.

- **IDIBAPS' researchers also participate in 11 National Networks from ISCIII**, and 2 of them are coordinated by IDIBAPS: AIDS and Multiple Sclerosis National Networks.

- IDIBAPS participates in the Networked Biomedical Research Support Consortium - Spanish Clinical Trials Platform (Consorcio de Apoyo a la Investigación Biomédica en Red – Plataforma Española de Ensayos Clínicos, CAIBER).

- In the **7th Framework Programme and Executive Agency for Health and Consumers Protection Programme**, IDIBAPS participates in 56 projects and coordinates 14 of them.

- IDIBAPS' researchers also participate in **many international consortiums** such as: Colorectal Cancer Genetics (COGENT), International Cancer Genome Consortium (ICGC), International Consortium for inflammatory bowel disease genetics, European Clinical Research Infrastructures Network (ECRIN) and Hepatoellular Carcinoma International (HCC) Genomic Consortium.

SPANISH BIOMEDICAL NETWORKS

In the last few years much of the economical effort from the Instituto de Salud Carlos III (Spanish Ministry of Economy and Competitiveness) has been focused in the consolidation of the Spanish National Research Networks, an initiative that includes the Networked Biomedical Research Centres (Centros de Investigación Biomédica en Red, CIBERs) and the Cooperative Research Topic Networks (Redes Temáticas de Investigación Cooperativa en Salud, RETICs). Another remarkable initiative is CAIBER, designed to facilitate the development of clinical research programs.
These structures represent a modern and cooperative way of understanding biomedical research and have achieved excellent results. IDIBAPS participates in most of these virtual research structures and leads some of them. Investigators of the IDIBAPS direct the following networks:

- Networked Biomedical Research Centre for Hepatic and Digestive Diseases (Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas, CIBERehd).
- Spanish Biomedical Research Centre in Diabetes and Associated Metabolic Disorders (Centro de Investigación Biomédica en Red de Diabetes y Enfermedades Metabólicas Asociadas, CIBERDEM).
- Networked Biomedical Research Centre for Respiratory Diseases (CIBERES).
- AIDS Research Network (RIS).
- Spanish Multiple Sclerosis Network (REEM).

NETWORKED BIOMEDICAL RESEARCH CENTRE FOR HEPATIC AND DIGESTIVE DISEASES

(Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas, CIBERehd)

Director: Dr. Jaume Bosch

www.ciberehd.org

CIBERehd was created on 29 November 2006, and is presently composed of 45 groups (and six other on ad honorem basis), corresponding to 31 centres in 10 Autonomous Communities throughout Spain. Its Scientific Director is Prof **Jaume Bosch**, and its activities are supervised by an External Advisory Board and Scientific Committee. Its central facilities are located in calle Còrsega 180, in Barcelona.

The **objectives** of the CIBER for Liver and Digestive Diseases are:

- To promote **top level research** in liver and digestive diseases, in an international context, fostering interaction among the best Spanish groups.
- Focused on **translation research**, in order to facilitate a rapid transferral of the results that to clinical practice and biotechnological applications.

The scientific activity of the CIBERehd fundamentally focused on its research programs and strategic actions, and is complemented by the training programme, the scientific and technological platforms and common resources. The CIBERehd has its own platforms in genomics, transcriptomics, proteomics, metabolomics, gene silencing and bioinformatics, as well as a biobank (integrated within the IDIBAPS biobank), a bank of steatotic livers and telemedicine platforms for diagnostic and therapeutic support in liver cancer, genetic counselling in colorectal cancer; a database of chronic hepatitis B patients and a national Registry of patients with Vascular Liver Diseases.

The CIBERehd has 6 major research programs:

- Portal hypertension and mechanisms of transition to cirrhosis.
- Hepatitis viruses.
- Cholestasis and metabolic disorders.
- Liver immunology, cell therapy and transplantation.
- Liver and digestive cancer.
- Gastrointestinal inflammation and motility.

Its budget, totalling 4.6 million Euros in 2012, covers the salaries of the investigators integrated in its different groups, scientific infrastructure, training programmes and strategies actions - involving the implementation of large research projects that can only be addressed through firm cooperative action.

The activity of the CIBERehd is reflected in its annual report, which includes the publication of over 200 articles per year in top journals (first upper quartile of the SCI), and clinical guidelines, as well as the conduction of over 50 clinical trials. Seventy-two cooperative studies are ongoing at present.

SPANISH BIOMEDICAL RESEARCH CENTRE IN DIABETES AND ASSOCIATED METABOLIC DISORDERS

(Centro de Investigación Biomédica en Red de Diabetes y Enfermedades Metabólicas Asociadas, CIBERDEM)

Director: Dr. Ramon Gomis

ciberdem

Centro de Investigación Biomédica en Red de
Diabetes y Enfermedades Metabólicas Asociadas

www.ciberdem.org

The CIBER in Diabetes and Associated Metabolic Disorders is constituted by 31 elite research groups in 19 associate institutions; it represents the biggest network of scientific diabetes research in Spain. Its objectives are to achieve the highest standards of research practice and to accelerate the translation of scientific results into clinical applications. With the aim of achieving pioneering biomedical advances, Ciberdem fosters the development of projects in collaboration with other national and international institutes, and it has its own two technological platforms: the Biobank and the Metabolomics Platform.

The consortium seeks to involve not only the scientific community, but also the business sector in R&D investment. It offers companies the possibility of working together on research projects, scientific consultancy, organization of scientific events and socially responsible corporate actions. Furthermore, it disseminates and divulges its scientific work through multiple actions such as the periodic organization of scientific seminars and its annual Science Open Day, always with the active collaboration of patients' associations.

In its effort to continue supporting the work of its research groups, Ciberdem has implemented a strategic fundraising plan (investigaladiabetes.org) to generate active participation from the business world and society in general with the objective of collecting funds which will enable us to continue to promote and finance scientific activity to find new means of preventing, diagnosing, treating and curing diabetes. Worthy of special note in 2012, was the launch of the Pilchardus project (in collaboration with Idibaps) and diabetesalacarta.org (in collaboration with the Alícia Foundation).

Ciberdem has made significant advances which are of great importance to our health system, such as the Di@bet.es Study and Telemed-diabetes Study, which provides us with accurate information about the diabetes in Spain, and also about the cost-effectiveness of telematic systems applied to the treatment of Type 1 diabetes mellitus. They are collective achievements, a general effort on the part of all our researchers.

CIBER FOR RESPIRATORY DISEASES

(Centro de Investigación Biomédica en Red de Enfermedades Respiratorias, CIBERES)

Director: Dr. Àlvar Agustí

www.ciberes.org

The CIBER for respiratory diseases (CIBERES) is a networked, multidisciplinary and multicentre research institution integrating basic, clinical and populational research in respiratory illnesses. CIBERES is composed of 34 research groups, of which 60% belong to hospitals and 40% to universities and research centres. The Scientific director of CIBERES is Dr. Alvar Agustí (Chest Institute, Hospital Clinic). The administrative centre of CIBERES is in the FundacióCaubet-Cimera in Mallorca.

The research activity of CIBERES is structured upon the basis of Corporate Research Programmes (Programes Corporatius de Investigació - PCI). Each PCI comprises a series of projects that in a cooperative and integrated manner address a relevant healthcare problem in the field of respiratory disease. At present, CIBERES has 10 active PCIs:

- Asthma
- Pulmonary fibrosis
- Chronic obstructive pulmonary disease (COPD)
- Lung Cancer – Thoracic Neoplasms
- Acute lung injuries
- Sleep Apnea Hypopnea Syndrome
- Tuberculosis
- Pneumonia and sepsis of respiratory origin
- Pathogen-Host Interactions
- H1N1 influenza

In parallel to these PCIs, CIBERES has organized a series of research support platforms, such as: (1) Pulmonary biobank; (2) Technological development and transference; (3) Training program; and (4) Communications Department. CIBERES organizes annual scientific sessions and different monographic research seminars.

AIDS RESEARCH NETWORK

(Red de Investigación en SIDA, RIS)

Director:
Dr. Josep Maria Gatell

www.retic-ris.net

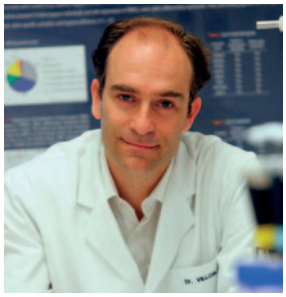
The AIDS Research Network (Red de Investigación en SIDA - RIS) was created in 2003, and established the bases for driving original and innovative research in the field of AIDS. In its second call, the Network has become consolidated and has focused its activity on the creation of common platforms (Cohorts, Biobank, Laboratories and Resistance) that generate data and biological samples on which the research strategies are founded (clinico-epidemiological, clinico-therapeutic, immunopathogenesis and vaccines). The priority are those projects that require a network in order to be implemented, and those issues that are relatively specific to our country, or in which we are able to make high-level original contributions.

The AIDS network aims to address original problems through novel technological approaches. A series of large scale projects have been defined. The strategies used to reach the established objectives are based on references which can only be addressed through network-based effort and the creation of different platforms. A large cohort has been defined, corresponding to different groups of patients of homogeneous characteristics which allows us to evaluate the efficacy of new treatment protocols and intervention strategies, and to carry out studies on toxicity, resistance and pathogenesis. The particular characteristics of the HIV epidemic in our country allows the study of certain pathologies associated to HIV infection, such as hepatitis C coinfection.

The AIDS network is composed by 19 core research groups, 17 associate clinical groups and includes groups with different experience in virology, immunology, and cellular and molecular biology that contribute complementary points of view and techniques to globally address complex problems in relation to the pathogenesis of HIV infection, such as immune reconstitution, virus-host interactions and the mechanisms underlying cell damage.

SPANISH MULTIPLE SCLEROSIS NETWORK

(Red Española de Esclerosis Múltiple, REEM)



Director:
Dr. Pablo Villoslada

www.reem.es

The Spanish Multiple Sclerosis Network (Red Española de Esclerosis Múltiple, REEM) was created in 2008. REEM is composed of basic and clinical investigators at national level, interested in the aetiopathogenesis of multiple sclerosis and in the development of new diagnostic and treatment methods with which to combat the disease. The Director of the network is Dr. Pablo Villoslada, Head of the IDIBAPS *Neuroimmunology* team.

The REEM has three objectives:

- Development of a **cooperative research programme** on the aetiology, diagnosis and treatment of multiple sclerosis.
- Promotion of the **creation of shared resources** among the different centres participating in the REEM, such as biobanks or clinical databases.
- **Training of young investigators** in the knowledge of multiple sclerosis, based on courses, conferences and stays in other laboratories.

Multiple sclerosis presently affects over two million people throughout the world, and our greatest challenge is to improve the quality of life of the affected patients.

CIBERs and RETICs in which IDIBAPS takes part

The IDIBAPS also actively participates in the rest of CIBER and RETIC research networks, through its research teams:

Networked Biomedical Research Centres (CIBERs)

CIBER	IDIBAPS Team	Principal investigator
CIBERdem - Diabetes y enfermedades metabolicas	Diabetes: metabolic and molecular networks	Anna Maria Novials Sardà
CIBERdem - Diabetes y enfermedades metabólicas	Genomic Programming of Beta Cells and Diabetes	Jorge Pedro Ferrer Marrades
CIBERdem - Diabetes y enfermedades metabólicas	Diabetes: metabolic and molecular networks	Ramon Gomis Barbarà
CIBERehd - Enfermedades hepáticas y digestivas	Physiopathology and treatment of ascites and altered renal function in liver cirrhosis	Vicente Arroyo Pérez
CIBERehd - Enfermedades hepáticas y digestivas	Liver hemodynamics and portal hypertension. Digestive bleeding secondary to ruptured esophageal varicose veins	Jaime Bosch Genover
CIBERehd - Enfermedades hepáticas y digestivas	Hepatic oncology	Jordi Bruix Tudó
CIBERehd - Enfermedades hepáticas y digestivas	Gastrointestinal and pancreatic oncology	Antoni Castells Garangou
CIBERehd - Enfermedades hepáticas y digestivas	Viral hepatitis in the immune competent host and in liver transplant patients	Xavier Forns Bernhardt
CIBERehd - Enfermedades hepáticas y digestivas	Inflammatory bowel disease (IBD)	Julián Panés Díaz
CIBERehd - Enfermedades hepáticas y digestivas	Cholestasis and bone pathology	Albert Parés Darnaculleta
CIBERehd - Enfermedades hepáticas y digestivas	Liver transplantation and graft viability	Antonio Rimola Castellà
CIBERehd - Enfermedades hepáticas y digestivas	Mitochondrial regulation of cell death and steatohepatitis	José Carlos Fernández-Checa
CIBERned - Enfermedades neurodegenerativas	Neurodegenerative diseases: Clinical and experimental research	Eduard Tolosa Sarró
CIBERned - Enfermedades neurodegenerativas	Neuropharmacology and experimental neuropathology	Guadalupe Mengod
CIBERned - Enfermedades neurodegenerativas	Cellular biology of pathological processes	Jordi Alberch
CIBERned - Enfermedades neurodegenerativas	Neurobiology Unit	Ramon Trullas Oliva
CIBERned - Enfermedades neurodegenerativas	Neuropharmacology and experimental neuropathology	Eduard Rodríguez Farré
CIBERer - Enfermedades raras	Secondary lesions due to chronic alcohol ingestion, muscle pathology	Francesc Cardellach López
CIBERer - Enfermedades raras	Fetal and perinatal medicine	Eduard Gratacós Solsona
CIBERer - Enfermedades raras	Genetics	Montserrat Milà Recasens
CIBERer - Enfermedades raras	Hereditary metabolic diseases	Maria Antònia Ribes Rubio
CIBERer - Enfermedades raras	Gene Therapy and Cancer	Cristina Fillat
CIBERes - Enfermedades respiratorias	Physiopathological mechanisms of respiratory illnesses	Joan Albert Barberà Mir
CIBERes - Enfermedades respiratorias	Applied research in infectious respiratory diseases, critically ill patients and lung cancer	José María Montserrat Canal

CIBER	IDIBAPS Team	Principal investigator
CIBERes - Enfermedades respiratorias	Clinical and Experimental Respiratory Immunoallergy (IRCE)	César Picado Vallés
CIBERes - Enfermedades respiratorias	Applied research in infectious respiratory diseases, critically ill patients and lung cancer	Antoni Torres Martí
CIBERes - Enfermedades respiratorias	Respiratory biophysics and bioengineering	Ramón Farré
CIBEResp - Epidemiología y Salud Pública	Neuropharmacology and experimental neupathology	Eduard Rodríguez Farré
CIBERobn - Fisiopatología de la obesidad y nutrición	Hypertension, lipids and cardiovascular risk	Emili Ros Rahola
CIBERobn - Fisiotatología de la obesidad y nutrición	Secondary lesions due to chronic alcohol ingestion, muscle pathology	Ramon Estruch Riba
CIBERsam - Salud Mental	Biological bases of psychiatric disorders and nuclear psychiatry	Miguel Bernardo Arroyo
CIBERsam - Salud Mental	Biological bases of psychiatric disorders and nuclear psychiatry	Eduard Vieta Pascual
CIBERsam - Salud Mental	Neuropharmacology and experimental neuropathology	Francesc Artigas
CIBER-BBN - Bioingeniería, Biomateriales y Nanomedicina (Grupo Asociado)	Respiratory biophysics and bioengineering	Ramón Farré
CIBER-BBN - Bioingeniería, Biomateriales y Nanomedicina	Respiratory biophysics and bioengineering	Javer Pavia

Cooperative Health Research Thematic Networks (RETICs)

RETIC	IDIBAPS Team	Principal investigator
REDINSCOR - Red de Investigación en Insuficiencia Cardíaca en España	Arrhythmias, resynchronization and cardiac imaging	Josep Brugada Terradellas
RIS - Red Española de Investigación en SIDA	Infectious diseases and AIDS	Josep Maria Gatell Artigas
REIPI - Red española de investigación en patología infecciosa (REIPI)	Immune receptors of the innate and adaptive system	Francisco Lozano Soto
HERACLES - Determinantes Genéticos y Ambientales de la Disfunción Vascular en la Hipertensión y Cardiopatía Isquémica	Atherosclerosis and coronary disease	Maria Magdalena Heras Fortuny
HERACLES - Determinantes genéticos y ambientales de la disfunción vascular	Hemotherapy - hemostasis	Ginés Escolar Albaladejo
Red de Terapia Celular	Cellular biology of pathological processes	Josep Mª Canals Coll
RETICEF - Red temática de investigación cooperativa en envejecimiento y fragilidad	Neuropharmacology and experimental neuropathology	Coral Sanfeliu Pujol
RECAVA - Factores de Riesgo, Evolución y Tratamiento de las Enfermedades Cardiovasculares y sus Mecanismos	Diagnosis and therapy in oncology	Maria Àfrica Muxí Pradas
REDINREN - Red de Investigación en Enfermedades Renales	Nephro-urological diseases and kidney transplantation	Esteban Poch López de Briñas
REDINREN - Red de Investigación en Enfermedades Renales	Nephro-urological diseases and kidney transplantation	Josep Maria Campistol Plana

RETIC	IDIBAPS Team	Principal investigator
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Hematological oncology	Francisco Cervantes Requena
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Hematological oncology	Juan Bladé Creixenti
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Cell proliferation and signaling	Oriol Bachs Valldeneu
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Hematopoietic progenitor cell transplantation	Álvaro Urbano Ispizúa
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Physiopathology and molecular bases in hematology	Dolors Colomer Pujol
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Diagnosis and therapy in oncology	Francisca Eugenia Pons Pons
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Human and experimental functional oncomorphology	Elias Campo Guerri
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Hematological oncology	Emili Montserrat Costa
RED DE CANCER - Red temática de investigación cooperativa de cáncer.	Molecular and translational oncology	Pedro Gascón Vilaplana
RED DE CANCER - Red temática de investigación cooperativa de cáncer	Cell proliferation and signaling	Carles Enrich
REEM - Red Española de Esclerosis Múltiple	Clinical and experimental neuroimmunology	Pablo Villoslada Díaz
REEM - Red Española de Esclerosis Múltiple	Clinical and experimental neuroimmunology	Francesc Graus Ribas
RIRAAF - Red de Investigación de Reacciones Adversas a Alérgenos y Fármacos	Clinical and Experimental Respiratory Immunoallergy (IRCE)	Joan Bartra Tomàs
RIER - Red de investigación en inflamación y enfermedades reumáticas	Inflammatory joint diseases (IJDs)	Juan de Dios Cañete Crespillo
RETIC de Biobancos	Biobank	Joan Albert Barberà Mir / Anna Bosch
RETICS INNOVACIÓN - RETICS de Innovación en Tecnologías Médicas y Sanitarias	Direction of Innovation, Hospital Clínic of Barcelona	Juan Bigorra Llosas
OFTARED - RETIC en Oftalmología	Neurophysiology and functional studies of the nervous system	Arcadi Gual

Consortium to Support Network Biomedical Research - Spanish Clinical Trials Platform (CAIBER)

CAIBER aims to empower the development of clinical research programs and clinical trials, both internal and in a network. It focuses especially on those who have no commercial interest or oriented to prevention, diagnose, treatment and services, in the thematic areas reflected in the Strategic Action in Health as relevant social and public health interest groups. The objective is to facilitate and promote multi-center clinical trials which are safe, rigorous, controlled and guaranteed to preserve the quality of the study, patient safety and reliability of the data.

IDIBAPS, through the Clínic Foundation, is one of the nodes in the CAIBER consortium. The node is led by Dr. Antoni Trilla and Dr. Xavier Carné.

EUROPEAN PROJECTION

International projection is one of the strategic objectives of IDIBAPS, with a view both to establishing collaborative ties with reference entities in other countries and to gain access to international calls for research funding. The presence of investigators of this Institute in major international projects is a growing reality.

A good example is offered by the increasing presence of investigators of the IDIBAPS in research projects financed by the European Commission. At present we are participating in 62 projects financed by the European Commission (FPVII and EAHC). Of these projects we coordinate a total of 11; in 46 we participate as partners; and we have 5 monocontract Marie Curie projects.

Another significant achievement is the leadership of IDIBAPS in initiatives such as The Health Connect-EU Group, a network designed to improve the recognition of the Catalan research and development in the international environment, or the The Chronic Lymphocytic Leukemia (CLL) Genome Project, aimed to generating a comprehensive catalogue of genomic alterations involved in the development and progression of the disease.

PROJECTS COORDINATED BY IDIBAPS RESEARCHERS

The 11 European projects coordinated by IDIBAPS researchers are presented below:

COOPERATION

NEXES - Supporting healthier and independent living for chronic patients and eldery
Dr. Josep Roca
2008 - 2012
Call: CE-CIP-ICTPSP2007-1
Official code: 225025

HEPTROMIC - Genomic predictors and oncogenic drivers in hepatocellular carcinoma
Dr. Josep M. Llovet
2010 - 2013
Call: CE-FP7-HEALTH-2ST-10
Official code: 259744

AMPHORA - Alcohol Measures for Public Health Research Alliance
Dr. Antoni Gual
2009 - 2012
Call: CE_FP7_Health_B_07
Official code: 223059

ODHIN - Optimizing delivery of health care interventions
Dr. Antoni Gual
2011 - 2014
Call: CE-FP7-HEALTH-2ST-10
Official code: 259268

ALICE RAP - Addictions and Lifestyles In Contemporary Europe - Reframing Addictions Project
Dr. Antoni Gual
2011 - 2016
Call: CE_FP7-SSH-2010-1
Official code: 266813

PROJECTS COORDINATED BY IDIBAPS RESEARCHERS

PEOPLE (Networks)

uVOLUMES - Novel Ultrasound-based Tridimensional Tools for Structural and Functional Evaluation of Volumes of Interest in Human Organs
Dr. Eduard Gratacós
2008 - 2012
Call: CE_FP7_07_3_1_IAPP
Official code: 217911

ADIBET - The role of adipose tissue in obesity: beta cell crosstalk
Dr. Ramon Gomis
2008 - 2012
Call: CE_FP7_07_3_1_IAPP
Official code: PIAP-GA-2008-218130

ENDO-VV - EndoVascularVision: new endoscopic tools for real time vascular assisted vision
Dr. Eduard Gratacós
2010 - 2014
Call: CE_FP7_PPOLE_09_IAPP
Official code: 251356

REPROTRAIN - Reproductive Biology Early Research Training
Dr. Rafael Oliva
2012 - 2015
Call: CE-FP7-PEOPLE-ITN-11
Official code: 289880

SANCO - EAHC

ELIPSY - European Living Donor Psychosocial Follow-up
Dr. Martí Manyalich
2009 - 2013
Call: CE_SANCO08
Official code: 20081104

ENERCA III - European reference network of expert centres in rare anaemias
Dr. Juan Luis Vives-Corrons
2009 - 2013
Call: CE_SANCO08
Official code: 20081210

Coordinated international initiatives

CHRONIC LYMPHOCYTIC LEUKEMIA (CLL) GENOME PROJECT

www.cllgenome.es

Scientific Directors: Dr. Elías Campo and Dr. Carlos López-Otín

The Chronic Lymphocytic Leukemia (CLL) Genome Project aims to generate a comprehensive catalogue of genomic alterations involved in the development and progression of the disease. This information will improve our ability to diagnose and categorize the patients and will promote the advance in new therapeutic approaches.

The CLL Genome Project, as a contributing member of the International Cancer Genome Consortium (ICGC), has the purposes of creating diagnostic tools, discovering therapeutic targets and developing new strategies that will allow a customized therapy for CLL in order to make it more precise and effective.

The overall objective of the CLL Genome Project is to generate a comprehensive catalogue of genomic alterations in 500 independent tumors, including clinical, biological, and epidemiological information. The ultimate goal is to decipher the enormous diversity and complexity of the changes in the human cancer genome, mostly still unknown, which are responsible for the development and progression of the different types of the disease with the aim of improving its prevention, diagnosis and treatment.

HEALTH CONNECT-EU GROUP

www.connecteusalut.org

Coordinator: Gemma Pascual, IDIBAPS International Unit

The Health Connect-EU Group is a network led by IDIBAPS and made up of nearly sixty organisations that focus their activity on health in Catalonia. They are compromised to join their efforts to improve the recognition of the Catalan research and development in the international environment.

The members of this network belong to different sectors, both academia and industry. These are universities, hospitals, research centres, technological centres, foundations, companies, associations of companies between others. The promoters of the Health Connect-EU Group are: ANAXOMICS, CATALONIABIO, CRG, FARMAINDUSTRIA, FENIN, Fundació ACE, Fundació IMIM - PARC DE SALUT MAR, ICO, IDIBAPS - HOSPITAL CLINIC DE BARCELONA, IDIBELL - HOSPITAL UNIVERSITARI DE BELLVITGE and IRSICAIXA.

This initiative is supported by ACC10 and AGAUR, agencies from the Generalitat de Catalunya (Catalan Government), in the framework of the Connect-EU Programme. This scheme promotes the participation and influence of Catalonia in the European panorama. The Health Connect-EU Group is one of the fifteen networks that have been constituted with the objective of representing internationally the cutting-edge scientific and technological areas in Catalonia.

The Health Connect-EU Group seeks to constitute and strengthen synergies between its members and with other foreign organisations. Doing so, it expects to identify the research areas with more potential within the biomedical field. The objectives of the network are:

- Elaborate and disseminate the Health Strategic Research Agenda of Catalonia for the following years.
- Forge strategic alliances between both sectors in Catalonia, academia and industry.
- Facilitate and promote the participation and inclusion of the members in the 7th Framework Programme of the European Commission (2007-2013).
- Promote the adaptation and preparation of the members to Horizon 2020 (2014-2020).
- Disseminate the existence of the Health Connect-EU Group especially in the health field.

Most of the Catalan organisations that belong to the network are already participating in European or other international programmes. As a result of their collaboration they can obtain better success rates or more opportunities of participation. On the other side, some of the collaborators have not previous experience in European projects. For them, the group is an opportunity to be guided through their first contact with this kind of international initiatives.

In 2012, most of the activities performed have been directed to be more known and identify the Catalan health priorities to be included in the Health Strategic Research Agenda. Moreover, the network has also organized several activities, collaborated with the National Contact Points trying to influence the research priorities in Europe, dynamized the communication between the members and so on.

The Health Connect-EU Group has established some priorities for 2013: take advantage of the last calls of the 7th Framework Programme; be prepared by the Horizon 2020; and influence with the Health Strategic Research Agenda of Catalonia the priorities that the European Commission will fund during the following years.

TRAINING

BIOTRACK - PROFESSIONAL TRAINING AND CAREER DEVELOPMENT IN BIOMEDICINE

IDIBAPS' institutional mobility action
www.idibaps.org/biotrack

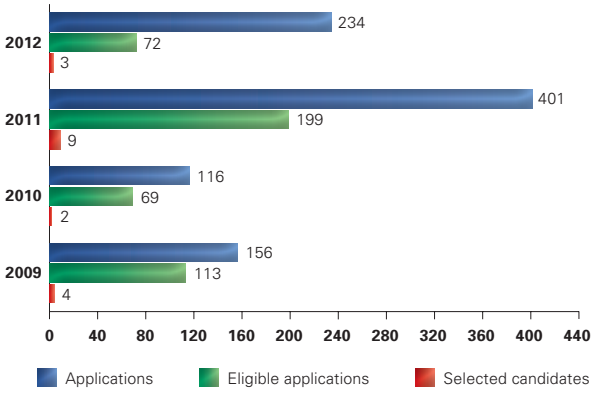
BIOTRACK, Professional Training and Career Development in Biomedicine, is an IDIBAPS initiative co-funded by the Marie Curie Actions of the European Commission, 7th Framework Program. It is composed by two schemes, a Post-Doctoral In-coming mobility action and a Reintegration Programme. The objective of BIOTRACK is improving the scientific production and quality of IDIBAPS by strengthening its existing research programmes.

The BIOTRACK in-coming mobility scheme - Post-doctoral programme wants to recruit excellent young researchers with a good track record in scientific publications that have acquired experience in other countries.

2012 facts and figures:

- 4 researchers have started their contract in IDIBAPS.
- 7 candidates have been selected because of their excellence.
- 323 applications have been evaluated, coming from one call opened at the end of 2011 and two calls in 2012.

In Figure 1, there are available the yearly distributions of applications, eligible candidatures and selected fellows considering the calls opened per year:



In 2012 the number of applications has been lower than in 2011. The possible cause of this difference is that a new application criteria, a scientific abstract, has been requested. This has contributed to the evaluation process, making easier to find out the matching of the candidate with the programme and the centre. In addition, it is important to point out that the whole amount of applications is higher than in 2009 and 2010. The possible reason is that at this stage, BIOTRACK initiative is more known than in the past.

COFUNDED BY MARIE CURIE ACTIONS

In total, BIOTRACK has recruited 18 young excellent researchers selected from 453 evaluated candidatures coming from 907 total applications. The profile of the researchers who apply for the programme is slightly different than the qualities that the selected researchers have. See below:

	Applicants	Selected researchers
Gender balance	Nearly equilibrated	Higher percentage of females, approximately 61%
Previous post-doctoral experiences	2009-2010: Many candidates inexperienced or little experienced 2011-2012: Most of the candidates with one or two previous postdoctoral experiences	All of the selected researchers have one or two previous postdoctoral experiences
Range of ages	Normally from 30 to 36 years old, although several cases under 30 or over 36 years old	17 researchers: between 30 and 36 years old 1 researcher: over 36 years old
Origin	**From worldwide** Most common origins: The United States of America and India	**From worldwide** 9 researchers: coming from the United States of America 9 researchers: coming from other places such as Canada, France, Germany, Russia, Spain, Sweden, Switzerland and United Kingdom
Nationality	**From everywhere** Most common nationalities: Spanish, Italian and Indian	**Different nationalities** 14 researchers are Spanish 4 researchers have other nationalities like German, Russian, Argentinean and American

BIOTRACK also includes a Reintegration Programme that provides some Senior Researchers with start-up incentives. The Reintegrated Scientists who accomplish with some mobility requirements once they are working in the institution can access to it. It is expected that this incentive will help to enhance their excellent research.

Future of BIOTRACK

On 2012, IDIBAPS has asked to the European Commission to obtain an extension of the programme during 2 years. In this proposal some improvements and modification of the programme have been suggested. A positive reply is expected in order to be able to continue enhancing the career development in biomedicine until 2015.

DOCTORAL THESES

The training dedication of the IDIBAPS is also reflected by the large number of doctoral theses that are driven and supported by the IDIBAPS integrated members. A list is provided below of the 78 **doctoral theses** directed by investigators from this centre during 2012:

Thesis Author	Title	Thesis Directors
Virgina Ruiz-Esquide Torino	Efecto del tabaco sobre la actividad, discapacidad y daño radiológico en la artritis reumatoide y su relación con los marcadores serológicos de la enfermedad	SANMARTÍ R
Jordi Monés Carilla	In the search for an effective treatment and optimal dosing for patients with choroidal neovascularization: a 20-year journey, and the fusion regimen: a disease activity guided treatment algorithm with ranibizumab in naïve subjects with choroidal neovascu	CASAROLI R
Georgina Espígol Frigolé	Diferenciació funcional TH17 en l'expressió fenotípica i evolució clínica de l'arteritis de cèl·lules gegants. Rol de l'axis IL23/IL-17 en la inflamació vascular	CID M
Roberto Pérez Alvarez	Efectos adversos desencadenados por el uso de terapias biológicas. Clasificación, caracterización y manejo clínico	RAMOS M
Cándido Díaz Lagares	Terapia depletiva de células B en lupus eritematoso sistémico: análisis de la eficacia y seguridad en pacientes graves y/o refractarios	RAMOS M
Myriam Gandía	Papel etiopatogénico de los polimorfismos genéticos de moléculas de inmunidad innata en el síndrome de Sjögren primario: Influencia en la expresión clínica, calidad de vida y riesgo cardiovascular	RAMOS M
Miriam Akasbi	Caracterización clínico-evolutiva de la afección neurológica del síndrome de Sjögren	RAMOS M, SISÓ A
Rafael Perelló Carbonell	Estudio de la neumonía adquirida en la comunidad (NAC) en pacientes con infección por el virus de la inmunodeficiencia humana (VIH) en la era del tratamiento antirretroviral de gran actividad desde un servicio de urgencias	MORENO A
Elena Isern Tarradas	Análisis de la relevancia funcional de elementos reguladores del enhancer del promotor principal inmediatamente temprano del citomegalovirus humano en un modelo murino	ANGULO A
Antonio Guilabert Vidal	Polimorfismos del receptor fc gamma en patología cutánea inmunomediada: papel en la patogenia del penfigoide ampolloso y en la respuesta a tratamiento biológico en la psoriasis	LOZANO F
Mariona Pascal Capdevila	Allergenic protein and epitope recognition in food allergy: a new perspective for the molecular and clinical characterization of shellfish and lipid transfer protein allergy	JUAN M
Alba M. Riesgo García	Diferencias de género en el abordaje de la patología cardiovascular: una aproximación desde la perspectiva de la asistencia médica urgente	MIRO O
Emilio José Salgado Garcia	Estudio sobre los factores externos e internos que determinan el funcionamiento de un servicio de urgencias hospitalario	MIRO O
Javier Jacob Rodríguez	Factores pronósticos en la insuficiencia cardiaca aguda atendida en los servicios de urgencias hospitalarios españoles. Análisis del registro eahfe	MIRO O
Constanza Morén Núñez	Mitochondrial funtionalism in hiv-infected children receiving antiretroviral therapy	MIRO O
Bartomeu Castanyer Puig	Aportación analitica al proceso de atención al paciente intoxicado. Experiencia en la unidad de toxicologia clinica del hospital universitario Son Dureta	NOGUE S

Thesis Author	Title	Thesis Directors
Nuria Corominas Garcia	Evidència científica en l'ús dels antídots	NOGUE S
Victoria Martín Yuste	Revascularización de las arterias coronarias ocluidas crónicas. Predictores de éxito angiográfico y papel de las nuevas técnicas de imagen en la sección de los pacientes	SABATÉ M
Carles Falces Salvador	Models d'integració entre cardiologia i atenció primària per millorar la pràctica clínica en els pacients amb cardiopaties cròniques	HERAS M, BRUGADA J
Ana García Álvarez	Utilidad de las técnicas de imagen y los biomarcadores para el diagnóstico precoz de la afectación cardíaca en la enfermedad de chagas	HERAS M, SITGES M
Eduard Guasch Casany	Estudi de la Fibril·lació Auricular: de la fisiopatologia al tractament	MONT L
Laia Salcedo Sicilia	El citoesqueleto de espectrina y el complejo de golgi. Implicaciones en su arquitectura y funcionalidad en el transporte secretor	EGEA G
Susanna Prat Gonzalez	Efecto cardioprotector del metropolol en la reperfusión coronaria: analisis del miocardio isquémico en riesgo mediante resonancia magnética cardiaca	SITGES M
Adamantia Liapikou	Impact of guidelines for stratification of community acquired and hospital pneumonia severity and treatment	TORRES A
Pilar Martínez Olondris	Neumonia asociada a la ventilación mecánica por staphilococcus aureus meticilin-resistente en un modelo porcino	TORRES A
Vanessa Díaz Ravetllat	Risk factors of postoperative nosocomial pneumonia after resection of bronchogenic carcinoma	TORRES A
Yvonne Torres Atencio	Prostaglandina E2 en la activación osmótica inducida por manitol en el mastocito	MARTIN M, PICADO C
Helena Suarez Cisneros	Expressió proteica diferencial en l'endometri humà durant la finestra d'implantació	BALASCH J
Dámaris Muñoz Cano	Repercusiones psicológicas del tratamiento de Fecundación In Vitro (FIV): nivel de estrés, afrontamiento y síntomas emocionales	BALASCH J
Gonzalo Crespo Conde	Infección por el virus de la hepatitis C: estudio de los receptores de entrada en el hepatocito y utilidad de los métodos no invasivos en el diagnóstico de la fibrosis	FORN X
Núria Fabrellas Padrés	Avaluació d'un programa d'infermeria d'atenció immediata a persones amb problemes de salut aguts lleus	GINES P
Vedrana Reichenbach Marinkovic	Hepatic remodeling, serum biomarkers and prevention of fibrosis progression in liver disease	JIMENEZ W
Jordi Ribera Sabaté	Caracterización de la disfunción vascular sanguínea y linfática en la cirrosis hepática: evaluación de la inhibición del factor de crecimiento placentario y del óxido nítrico como estrategias terapéuticas	MORALES M
Annalisa Berzigotti	Nuevos métodos en el diagnóstico y evaluación no invasiva de la cirrosis hepática y la hipertensión porta	BOSCH J
Marcos Pasarín Castellanos	Resistència a la insulina i disfunció endotelial sinusoïdal a la malaltia hepàtica per dipòsit de greix	GONZÁLEZ-ABRALDES J y BOSCH J
Jordi Rimola Gibert	Resonancia magnética en la valoración de la enfermedad de crohn	PANES J
Domingo César Balderramo Barboza	Nuevos aspectos del manejo endoscópico de las complicaciones biliares asociadas al trasplante hepático	LLACH J
Núria Tarrats Font	Rellevància del TNF i l'esfingomielinasa àcida en la fibrogènesi hepàtica	MARÍ M, FERNANDEZ-CHECA JC
Núria Matias Hernando	Regulación y relevancia del glutatión mitocondrial en la progresión y tratamiento de la esteatohepatitis	GARCIA-RUIZ C, FERNANDEZ-CHECA JC
Maria Dolores Giráldez Jiménez	Caracterización clínica, patológica y molecular del cáncer colorrectal de debut precoz	CASTELLVÍ S
Oriol Sendino Garcia	Evaluación de nueva tecnología para optimizar la rentabilidad de la ecoendoscopia en el diagnóstico citohistológico de lesiones sólidas y quísticas del aparato digestivo	GINEZ MA

Thesis Author	Title	Thesis Directors
Judit Macías Vidal	Aspectes molecular de dues malalties de transport lisosòmic: la cistinosi i la malaltia de Niemann-Pick tipus C	COLL MJ, BACHS O
Aleix Navarro Sastre	Bases bioquímiques i genètiques de les deplecions de mtDNA i de les alteracions de NFU1	RIBES A
Myriam Solar Abboud	Plasticity of duct cells in the embryonic and postnatal pancreas	FERRER J
Margarita Giménez Álvarez	Sistemas de infusión subcutánea continua de insulina y de monitorización continua de la glucosa en la diabetes de tipo 1. Perfil de riesgo cardiovascular de los pacientes con control lábil por hipoglucemias recurrentes y graves	CONGET I
Miriam Ejarque Carbó	El paper del factor de transcripció MATH6 en la diferenciació pancreàtica	GASA R
Gemma Pujadas Rovira	Relació entre neurogenina 3 i la via de senyalització wnt en la formació de les cèl·lules beta del pàncreas	GASA R, GOMIS R
Mª Teresa Botta Orfila	Factors genètics i d'expressió implicats en la patogènia de la malaltia de parkinson idiopàtica i associada a la mutació G2019S a LRRK2	TOLOSA E, EZQUERRA M
Jordi Casanova Mollà	Assessment of small fiber neuropathy by nociceptive evoked potentials and skin biopsy	GRAU JM, VALLS SOLE J
Jessica Alejandra Guzmán López	Tms studies exploring the interaction betwen neuronal systems and networks in man	VALLS J
Laura Rué Cabré	Characterization of the mechanisms underlying alterations in macroautophagy and survival signalling in huntington's disease	PEREZ E
Marc Valenti Ribas	Estats mixtes, viratges i antidepressius: estudi d'una cohort de pacients bipolars	VIETA E
José Manuel Goikolea Alberdi	Propiedades reguladoras del humor de los antipsicóticos atípicos en los episodios afectivos del trastorno bipolar	VIETA E
Cleofe Peña Gomez	Effects of noninvasive brain stimulation on network connectivity, emotional processing and cognitive performance	BARTRÉS D
Gemma Escartin Martin	Disfuncions del còrtex orbitofrontal en pacients amb hemorràgia subaracnoïdal per ruptura d'aneurismes de l'artèria comunicant anterior: efecte de tractament	JUNQUÉ C
Jordi Ortiz Gil	The neural correlates of cognitive impairment in schizophrenia	JUNQUÉ C
Joana Braga Pereira	Verbal fluency in parkinson`s disease: neuroanatomical correlates and functional networks modulated by noninvasive brain stimulation	JUNQUÉ C
Anna Boronat Barado	Anticossos contra antígens de membrana neuronal en encefalitis paraneoplàsica i idiopàtica	GRAUS F
Francisco Javier Ortega González	KATP Channel blockade instructs microglia to foster brain repair and neurogenesis after stroke	RODRÍGUEZ MJ
Maria Neus Bosch Pont	Desenvolupament d'una teràpia anti-amiloide per a la malaltia d'Alzheimer en el gos amb disfunció cognitiva	MAHY N, RODRÍGUEZ MJ
Adriana Garcia Herrera	Características clínico-patológicas y moleculares de los linfomas cutáneos de células T periféricos poco frecuentes	CAMPO E, ESTRACH T
Alba Navarro López	Estudi de l'estat mutacional dels gens de les immunoglobulines i heterogeneïtat clínico biològica del linfoma de les cèl·lules del mantell	CAMPO E, SILVIA B
Anna Mozos Rocafort	Estudio de la activación de las vías de estrés dependiente de retículo endoplasmático en linfomas difusos de células grandes B: papel en la respuesta a la quimioterapia convencional y a la inhibición del proteosoma	CAMPO E, MARTINEZ A
Daniel Rodriguez Puig	Optimización del marcaje de 99MTC-ciprofloxacino como antibiótico para el diagnóstico de infecciones. Estudio de la acumulación in vitro y su aplicación clínica	PONS F
Joan Duch Renom	Utilitat de la pet-tc amb 18F-FDG en pacients amb neoplàsia de mama candidates a quimioteràpia neoadjuvant	PONS F

Thesis Author	Title	Thesis Directors
Maria Del Socorro Perez Poyato	Spectro clinico-mutacional y estudios de correlacion genotipo-fenotipo en la poblacion española afectada de lipofuscinosis neural ceroidea	PINEDA M, MILÀ M
Gabriel Esteban Salerni	Validación del seguimiento a largo plazo de pacientes de riesgo para melanoma con fotografía corporal total y dermatoscopía digital	PUIG S
Gerardo Ferrer Aguilar	El microambiente y la autoinmunidad en la leucemia linfática crónica	MONTSERRAT E
Sílvia Xargay Torrent	Identificació de noves dianes terapèutiques en neoplàsies limfoides	COLOMER D
Gabriela Hilda Gutiérrez Bassini	Evaluación externa de la calidad en citología de sangre periférica. Estudio de la competencia diagnóstica de los laboratorios españoles mediante un nuevo indicador	MERINO A
Susana Garcia Recio	Cooperación oncogénica entre la citoquina pro-inflamatoria SP y el receptor tirosina quinasa ERBB-2/HER2	ALMENDRO V
Carme Font	Malaltia tromboembòlica venosa en el pacient oncològic	REVERTER JC, GASCÓN P
Carme Font Puig	Malaltia tromboembòlica venosa en el pacient oncològic. Noves formes de presentació clínica i paper dels anticossos antifosfolípid en la seva patogènia	REVERTER JC
Alba Gomez Hierro	Caracterización funcional de la quinasa SRK1 en la respuesta a latrunculina b y de la quinasa SSP1 en el crecimiento bipolar en schizosaccharomyces pombe	ALIGUE RM
Marta Sánchez Marinas	Mecanismos moleculares de la respuesta a estrés en schizosaccharomyces pombe: papel de las mapkap quinasas CMK2 y SRK1	ALIGUE RM
Miriam Vidal Laliena	La HDAC3 regula l'estabilitat de la ciclina a	BACHS O
Sandra Vilà De Muga	Paper de l'annexina a6 en la remodelació de la membrana plasmàtica, en el tràfic i en la senyalització de l'egfr i ras	ENRICH C
Maria Pérez Luna	Anàlisi funcional de la interacció entra la proteïna P27KIP1 i l'acetilasa pcaf	PUJOL MJ

RESEARCH SEMINARS

IDIBAPS research seminars reflect clear teaching dedication, as well as being orientated towards the creation of networks. The speakers participating in the seminars organized by this Institute always offer added value that can contribute to the knowledge of our investigators. The goal is to share knowledge as it becomes available, with the consolidation of alliances all over the world in order to secure better research.

The institutional seminars organized by the management of IDIBAPS during the year 2012 were:

- *Towards a Pathophysiological Classification of Cirrhosis*
  January 23th
  Guadalupe Garcia-Tsao, MD
  Professor of Medicine at Yale University

- *Stem Cell Therapy for Cardiac Repair in Perspective. A Clinical Review*
  February 20th
  Francisco Fernández-Avilés Díaz, MD.
  Chief of Cardiology at Hospital Universitario Gregorio Marañón. Professor of Medicine at Universidad Complutense de Madrid

- *Innate signaling networks in immunoglobulin diversification and production*
  March 19th
  Andrea Cerutti, MD
  ICREA Research Professor at PRBB-IMIM, Professor at Mount Sinai School of Medicine, NYU

- *Next-generation sequencing as a research and clinical platform*
  April 10th
  John McPherson, PhD
  Genome Technologies Director at Ontario Institute for Cancer Research

- *Inflammation, liver stem cells, and cancer: a key role of interleukin-22*
  April 17th
  Bin Gao MD, PhD
  Chief of Liver Diseases Laboratory at National Institutes of Health (NIH)

- *Editorial decision in high impact science (Plenary session)*
  May 8th
  Pamela Feliciano, PhD
  Senior Editor, Nature Genetics

- *Intra-tumoral heterogeneity in Glioblastoma*
  June 4th
  Joan Seoane, PhD
  Director of Translational Research Program at VHIO

- *microRNA in vascular and metabolic disease*
  June 5th
  Carlos Fernández-Hernando, PhD
  Assistant Professor at NYU

- *Erbb4 signaling, cortical interneurons and schizophrenia*
  October 22nd
  Oscar Marín, PhD
  Professor at Instituto de Neurociencias de Alicante, CSIC-UMH
  Unidad de Neurobiología del Desarrollo

IDIBAPS AND SOCIETY

IDIBAPS understands that new biomedical discoveries must reach the citizens not only through medical and scientific benefits, but also through high quality information. It is mandatory to inform society of the advances, of the basic and healthcare novelties, and the principal research lines being pursued. The responsibility of informing society is based upon the principle that a well informed person is a healthier person.

Mass media play an important role in the communication of research results. That is why IDIBAPS investigators work together with the IDIBAPS Communication Office in press releases and press meetings to facilitate reliable and relevant data to journalists. During 2012 over 20 press releases were launched, which add to the breaking news were investigators from this Institute are interviewed as independent experts that express their opinion about other issues.

The personal implication of researchers in diffusion activities is very important. It makes possible not only the creation of institutional communication channels, but also the existence of activities oriented to society and supported by individuals and research groups. It is the case of the *Systems Neuroscience* team, led by Dr. Maria Victoria Sánchez-Vives, an ICREA investigator committed with science diffusion who has participated with her teammates in popular exhibitions and conferences. The interest to approach research to society also made possible the participation of the *Arrhythmias, resynchronization and cardiac imaging*, which participated in the 2012 science fair "Recerca en Directe", or the collaboration of Dr. Daniel Closa, head of the *Molecular and cellular bases of inflammation* team, with different communication media.

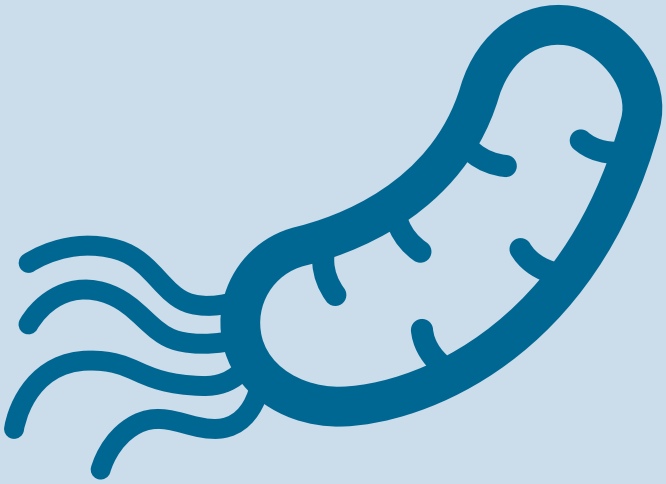
On the other hand, multimedia applications are an ideal tool to stimulate learning and explaining complex concepts. That is the reason why IDIBAPS joined efforts with Ambientech, an institution specialized in educational websites. The result is a new online activity about HIV and AIDS, designed to become an educational support in the classrooms. This activity, funded with a grant from the Generalitat de Catalunya (ACDC 2011), is now available in Spanish and Catalan at www.ambientech.org

Finally, Twitter and Facebook are the social networks where IDIBAPS focuses its efforts to reach a broader audience among society and scientific community. Follow us at:

http://www.facebook.com/idibaps

https://twitter.com/idibaps/

AREA 1



BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

INFLAMMATORY JOINT DISEASES (IJDs) 64

SYSTEMIC AUTOIMMUNE DISEASES 67

INFECTIOUS DISEASES AND AIDS 76

IMMUNE RECEPTORS OF THE INNATE AND ADAPTIVE SYSTEM . . . 86

MUSCULOSKELETAL REPAIR AND PLASTICITY 89

IMMUNOGENETICS OF THE AUTOINFLAMMATORY RESPONSE 91

EMERGENCIES: PROCESSES AND PATHOLOGIES 94

MOLECULAR AND CELLULAR BASES OF INFLAMMATION.
STRUCTURAL AND BIOLOGICAL MASS SPECTROMETRY 98

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Inflammatory joint diseases (IJDs)

GROUP MEMBERS

TEAM LEADER
Raimon Sanmartí (Hospital Clínic)
Tel.: 93 227 54 00 (Ext.: 2236/2604)
E-mail: sanmarti@clinic.cat

RESEARCHERS:
Juan D. Cañete (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Raquel Celis (Fundació Clínic)
Maria Victoria Hernández (Fundació Clínic)

PRE-DOCTORAL RESEARCH ERS:
Virginia Ruiz-Esquide (Fundació Clínic)
Julio Ramírez (Fundació Clínic)
Sónia Cabrera-Villalba (Fundacio Clinic)

COLLABORATORS:
Guadalupe Ercilla (Hospital Clínic)
Jaume Pomés (Hospital Clínic)
Xavier Tomas (Hospital Clínic)
Odette Viñas (Hospital Clínic)

TEAM INVOLVED IN:

RIER
Red de investigación en Inflamación y Enfermedades Reumáticas

STRATEGIC OBJECTIVES

Promotion of research into the most prevalent chronic forms of arthritis: rheumatoid arthritis (RA) and spondylo-arthritis, including psoriatic arthritis.

MAIN LINES OF RESEARCH

1. **Prognostic factors in earlyal arthritis:**
   - Prognostic factors (clinical and immunogenetic) in patients with recent-onset rheumatoid arthritis.
   - Production of new synthetic citrul-linated peptides for the design of immunoassays with diagnostic and prognostic value in recent-onset rheumatoid arthritis.
   - Effect of tobacco on the phenotype of recent-onset rheumatoid arthritis.
2. **Pharmacogenomics of chronic arthritis:**
   - Genetic biomarkers associated to biological therapy response in rheumatoid arthritis and psoriatic arthritis.
3. **Immunopathology of synovitis in chronic arthritis:**
   - Utility in differential diagnosis and prognosis. Immunopathological changes related to biological treat-ments. Synovial response biomark-ers.
4. **Role of autoinflammatory genes in the pathogenesis of chronic arthritis:**
   - MEFV gene mutations in the diag-nosis ant treatment of intermittent arthritis.

PUBLICATIONS

ORIGINALS
I.F.: 70.08

1 Gomez-Reino J.J.; Maneiro J.R.; Ruiz J.; Rosello R.; Sanmarti R.; Romero A.B. **Comparative effectiveness of switching to alternative tumour necrosis factor (TNF) antagonists versus switching to rituximab in patients with rheumatoid arthritis who failed previous TNF antagonists: the MIRAR Study.** ANNALS OF THE RHEUMATIC DISEASES. 71:1861-1864. **I.F.: 8.73.**

2 Gossec L.; Smolen J.S.; Gaujoux-Viala C.; Ash Z.; Marzo-Ortega H.; Van der Heijde D.; FitzGerald O.; Aletaha D.; Balint P.; Boumpas D.; Braun J.; Breedveld F.C.; Burmester G.; Canete J.D.; De Wit M.; Dagfinrud H.; De Vlam K.; Dougados M.; Helliwell P.A.; Kvien T.K.; Landewe R.; Luger T.; Maccarone M.; McGonagle D.; McHugh N.; McInnes I.B.; Ritchlin C.; Sieper J.; Tak P.P.; Valesini G.; Vencovsky J.; Winthrop K.L.; Zink A.; Emery P. **European League Against Rheumatism recommendations for the management of psoriatic arthritis with pharmacological therapies.** ANNALS OF THE RHEUMATIC DISEASES. 71 (1): 4-12. **I.F.: 8.73.**

3 Del Rey M.J.; Usategui A.; Izquierdo E.; Canete J.D.; Blanco F.J.; Criado G.; Pablos J.L. **Transcriptome analysis reveals specific changes in osteoarthritis synovial fibroblasts.** ANNALS OF THE RHEUMATIC DISEASES. 71 (2): 275-280. **I.F.: 8.73.**

4 Noordenbos T.; Yeremenko N.; Gofita I.; Van de Sande M.; Tak P.P.; Canete J.D.; Baeten D. **Interleukin-17-positive mast cells contribute to synovial inflammation in spondylarthritis.** ARTHRITIS AND RHEUMATISM. 64 (1): 99-109. **I.F.: 7.87.**

5 Julia A.; Tortosa R.; Hernanz J.M.; Canete J.D.; Fonseca E.; Ferrandiz C.; Unamuno P.; Puig Ll.; Fernandez-Sueiro J.L.; Sanmarti R.; Rodriguez J.; Gratacos J.; Dauden E.; Sanchez-Carazo J.L.; Lopez-Estebaranz J.L.; Moreno-Ramirez D.; Queiro R.; Montilla C.; Torre-Alonso J.C.; Perez-Venegas, J.J.; Vanaclocha F.; Herrera E.; Munoz-Fernandez S.; Gonzalez C.; Roig D.; Erra A.; Acosta I.; Fernandez-Nebro A.; Zarco P.; Alonso A.; Lopez-Lasanta M.; Garcia-Montero A.; Lluis Gelpi J.; Absher D.; Marsal S. **Risk variants for psoriasis vulgaris in a large case-control collection and association with clinical subphenotypes.** HUMAN MOLECULAR GENETICS. 21:4549-4557. **I.F.: 7.64.**

6 Lluch P.; Urruticoechea A.; Lluch J.; Moll M.C.; Matos M.; Benet J.M.; Ene L.; Canete J.D. **Development of Leprosy in a Patient with Rheumatoid Arthritis During Treatment with Etanercept: A Case Report.** SEMINARS IN ARTHRITIS AND RHEUMATISM. 42(2):127-30. **I.F.: 4.97.**

7 Descalzo M.A.; Carbonell J.; Gonzalez-Alvaro I.; Sanmarti R.; Balsa A.; Hernandez-Barrera V.; Roman-Ivorra J.A.; Ivorra-Cortes J.; Lisbona P.; Alperi M.; Jimenez-Garcia R.; Carmona L. **Effectiveness of a clinical practice intervention in early rheumatoid arthritis.** ARTHRITIS CARE & RESEARCH. 64 (3): 321-330. **I.F.: 4.85.**

8 Sanmarti R.; Cabrera-Villalba S.; Gomez-Puerta J.A.; Ruiz-Esquide V.; Hernandez M.V.; Salvador G.; Ramirez J.; Vinas O.; Canete J.D. **Palindromic Rheumatism with Positive Anticitrullinated Peptide/Protein Antibodies Is Not Synonymous with Rheumatoid Arthritis. A Longterm Followup Study.** JOURNAL OF RHEUMATOLOGY. 39:1929-1933. **I.F.: 3.69.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	10.06	3	2	1
2011	36.45	8	5	3
2012	70.08	13	8	3

9 Caliz R.; Del Amo J.; Balsa A.; Blanco F.; Silva L.; Sanamrti R.; Martinez F.G.; Collado M.D.; Ramirez M.D.; Tejedor D.; Artieda M.; Pascual-Salcedo D.; Oreiro N.; Andreu J.L.; Graell E.; Simon L.; Martinez A.; Mulero J. **The C677T polymorphism in the MTHFR gene is associated with the toxicity of methotrexate in a Spanish rheumatoid arthritis population.** SCANDINAVIAN JOURNAL OF RHEUMATOLOGY. 41 (1): 10-14. **I.F.: 2.47.**

10 Morales-Lara M.J.; Canete J.D.; Torres-Moreno D.; Hernandez M.V.; Pedrero F.; Celis R.; Garcia-Simon M.S.; Conesa-Zamora P. **Effects of polymorphisms in TRAILR1 and TNFR1A on the response to anti-TNF therapies in patients with rheumatoid and psoriatic arthritis.** JOINT BONE SPINE. 79(6):591-6. **I.F.: 2.27.**

11 Ruiz-Esquide V.; Gomara M.J.; Peinado V.I.; Gomez Puerta J.A.; Barbera J.A.; De Dios Canete J.; Haro I.; Sanmarti R. **Anti-citrullinated peptide antibodies in the serum of heavy smokers without rheumatoid arthritis. A differential effect of chronic obstructive pulmonary disease?** CLINICAL RHEUMATOLOGY. 31 (7): 1047-1050. **I.F.: 2.00.**

12 Ramirez J.; Fernandez-Sueiro J.L.; Lopez-Mejias R.; Montilla C.; Arias M.; Moll C.; Alsina M.; Sanmarti R.; Lozano F.; Canete J.D. **FCGR2A/CD32A and FCGR3A/CD16A Variants and EULAR Response to Tumor Necrosis Factor-alpha Blockers in Psoriatic Arthritis: A Longitudinal Study with 6 Months of Followup.** JOURNAL OF RHEUMATOLOGY. 39 (5): 1035-1041. **I.F.: 3.69.**

13 Celis R.; Planell N.; Fernández-Sueiro J.L.; Sanmartí R.; Ramírez J.; González-Álvaro I.; Pablos J.L.; Cañete J.D. **Synovial cytokine expression in psoriatic arthritis and associations with lymphoid neogenesis and clinicalfeatures.** ARTHRITIS RES THER. 14(2):R93. **I.F.: 4.44.**

EDITORIALS
I.F.: 8.73

1 Canete J.D.; Mease P. **The link between obesity and psoriatic arthritis.** ANNALS OF THE RHEUMATIC DISEASES. 71 (8): 1265-1266 AUG 2012. **I.F.: 8.73.**

GRANTS FOR RESEARCH IN PROGRESS

Cañete J. **Red de investigación en Inflamación y Enfermedades Reumáticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII), RETICS RD08/0075/0006 "RIER". Duration: 01/01/2009-31/12/2012.

Cañete J. **Caracterización ecográfica e inmunohistología de la sinovitis subclínica en pacientes con artritis reumatoide en remisión clínica: Implicaciones pronósticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII). PI11/01890. Duration 01/01/2012-31/12/2014.

DOCTORAL THESES

Sanmartí R. **Efecto del tabaco sobre la actividad, discapacidad y daño radiológico en la artritis reumatoide y su relación con los marcadores serológicos de la enfermedad.** PhD student: Virgina Ruiz-Esquide Torino.

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Systemic autoimmune diseases

GROUP MEMBERS

TEAM LEADER
Dr. Ricard Cervera Segura (Hospital Clínic)
Tel.: 93 227 57 74
E-mail: rcervera@clinic.cat

GROUP LEADERS:
Alfredo Adán (Hospital Clínic)
Maria Cinta Cid (Hospital Clínic)

RESEARCHERS:
Gerard Espinosa Garriga (Hospital Clínic)
Manuel Ramos Casals (Hospital Clínic)
Albert Bové (UB)
Ricardo P. Casaroli (Hospital Clínic)
José Hernández Rodríguez (Hospital Clínic)
Elena Millá (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Sergio Prieto (Hospital Clínic)
Georgina Espígol (IDIBAPS)
Marc Corbera (IDIBAPS)
Montserrat Butjosa (Hospital Clínic)
Miguel Angel Plasín (Hospital Clínic)
Juan Carlos Mejía (IDIBAPS)
Cándido Díaz-Lagares (Hospital Clínic)
Ester Planas (IDIBAPS)
Itziar Tavera (Hospital Clínic)
Marco Alba (IDIBAPS)
María Soledad Retamozo (IDIBAPS)

ADMINISTRATIVE STAFF:
Isabel Chaves (Hospital Clínic)

COLLABORATORS:
Xavier Bosch Aparici (Hospital Clínic)
María Teresa Sainz de la Maza (Hospital Clínic)
Antoni Sisó (GESCLINIC)
Ana García Martínez (Hospital Clínic)
Pilar Brito-Zerón (IDIBAPS)

VISITING SCIENTISTS:
Guillermo Pons-Estel (Barcelona)
Rosa Serrano (Barcelona)
Marta Pérez de Lis (Vigo)
Roberto Pérez-Alvarez (Vigo)
Rafael Belenguer (València)
Miriam Akasbi (Madrid)
Miriam Gandía (Cádiz)
Norma Nardi (Buenos Aires, Argentina)
Patrícia Patrício (Lisboa, Portugal)
Claudia Mendoza (Puebla, México)
Horacio Berman (Tucumán, Argentina)
Verônica Vilela (Río de Jainero, Brasil)
Adriana Bérez (Montevideo, Uruguai)
Marina Werner (Córdoba, Argentina)

STRATEGIC OBJECTIVES

The Systemic Autoimmune Diseases research group promotes **basic, clinical and translational research** in these diseases in a multidisciplinary manner, with the participation of members of the following Departments: Autoimmune Diseases, Ophthalmology, Internal Medicine, Nephrology, Immunology, Hemostasis, Hepatology, Obstetrics and Dermatology, among others. These activities are carried out in close collaboration with different international work groups, of which the team members are national and/or international coordinators: *European Working Party on Systemic Lupus Erythematosus* (EWPSLE), *European Forum on Antiphospholipid Antibodies* (EFAPL), *Catastrophic Antiphospholipid Syndrome* (CAPS) *Registry Project Group, International Pediatric Register of Antiphospholipid Syndrome* (Ped-APS Register), *Systemic Lupus International Collaborative Centers* (SLICC), *Sjögren's Syndrome-Hepatitis C Virus* (SS-HCV) *Study Group, HISPAMEC Study Group, Systemic Autoimmune Disease Study Group – Use of Biological Therapies* (BIOGEAS), *Spanish Sjögren's Syndrome Multicenter Study Group* (GEMESS), *European Vasculitis Study Group* (EUVAS), *European League Against Rheumatism* (EULAR) *Systemic Vasculitis Task Force, EULAR Standing Committee for International Clinical Studies Including Therapeutics, and the American College of Rheumatology* (ACR) *Work Group for Development of Classification Criteria for Rheumatic Polymyalgia*, among others.

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Systemic autoimmune diseases

MAIN LINES OF RESEARCH

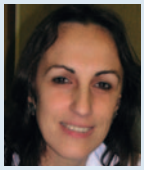
1. **Systemic lupus erythematosus, antiphospholipid syndrome and systemic sclerosis:**
   - Epidemiological multicenter studies on the clinical manifestations and long-term evolution of these diseases.
   - Clinical trials in new biological therapies.
   - Study of genetic polymorphisms as risk factors of the different clinical manifestations of these diseases.
   - Study of the cardiovascular and endothelial damage risk factors found in these diseases.
   - Basic research in animal models on the mechanism of action of antiphospholipid antibodies.
2. **Sjögren's syndrome, autoimmune manifestations of hepatitis C virus infection and biological therapies:**
   - Epidemiological multicenter studies on the clinical manifestations and long-term evolution of these diseases.
   - Study of lymphomas associated with Sjögren's syndrome.
   - Study of the cardiovascular and endothelial damage risk factors found in this syndrome.
   - Clinical and basic studies in mixed Cryoglobulinemia.
   - International registry of treatments with biological drugs for systemic autoimmune disorders (BIOGEAS).
3. **Systemic vasculitis:**
   - Investigation of the mechanisms involved and the clinical consequences of the persistence of vascular inflammation in giant cell arteritis. Identification of new therapeutic targets.
   - Study of the mechanisms involved in the development of abnormal vascular remodelling (occlusion or dilatation) and its clinical consequences.
   - Development of an organ culture model for studying the factors implicated in the perpetuation of inflammation and in vascular remodelling.
   - Study of the prevalence of large vessel inflammatory involvement at the start and during the course of giant cell arteritis.
   - Clinical trials promoted fundamentally for investigating new biological therapies in the management of systemic vasculitis.
   - Spanish systemic vasculitis registry.
   - Spanish Behçet's disease registry.
4. **Autoimmune ophthalmopathy:**
   - Clinical trials in new biological therapies.
   - Study of genetic polymorphisms in uveitis as risk factors of the different clinical manifestations of such ophthalmological disorders.
   - Treatment with anti-*Vascular Endothelial Growth Factor* (VEGF) drugs for choroid neovascularization and cystic macular edema secondary to uveitis.

RESEARCH GROUP
AUTOIMMUNE OPHTHALMOPATHY

Group Leader: Alfredo Manuel Adan (Hospital Clínic)

This group studies the clinical, diagnostic and therapeutic aspects of autoimmune ophthalmologic diseases. The scientific contribution of this line of research is very competitive and is internationally renowned. The group also studies the genetic polymorphisms of uveitis as risk factors for the different clinical manifestations of the disease, and participates in different clinical trials involving novel biological treatments.

RESEARCH GROUP
SYSTEMIC VASCULITIS



Group Leader: Maria Cinta Cid (Hospital Clínic)

This group studies the clinical, diagnostic and therapeutic aspects of systemic vasculitic disorders, as well as the mechanisms producing vascular damage in these diseases. The scientific contribution of this line of research is very competitive and is internationally renowned. Clinical studies are also made of the systemic vascular lesions characterizing giant cell arteritis, exploring the mechanisms that produce these vascular lesions in this disease, and participating in different clinical trials involving new biological treatments. The group also coordinates the Spanish registries of vasculitis associated with antineutrophil cytoplasmic antibodies (ANCA) and Behçet's disease.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	173.60	33	15	13
2011	185.01	37	19	13
2012	264.16	50	32	8

ORIGINALS
I.F.: 264.16

1 Dasgupta B.; Cimmino M.A.; Kremers H.M.; Schmidt W.A.; Schirmer M.; Salvarani C.; Bachta A.; Dejaco C.; Duftner C.; Jensen H.S.; Duhaut P.; Poor G.; Kaposi N.P.; Mandl P.; Balint P.V.; Schmidt Z.; Iagnocco A.; Nannini C.; Cantini F.; Macchioni P.; Pipitone N.; Del Amo M.; Espigol-Frigole G.; Cid M.C.; Martinez-Taboada V.M.; Nordborg E.; Direskeneli H.; Aydin S.Z.; Ahmed K.; Hazleman B.; Silverman B.; Pease C.; Wakefield R.J.; Luqmani R.; Abril A.; Michet C.J.; Marcus R.; Gonter N.J.; Maz M.; Carter R.E.; Crowson C.S.; Matteson E.L. **2012 Provisional Classification Criteria for Polymyalgia Rheumatica A European League Against Rheumatism/American College of Rheumatology Collaborative Initiative.** ARTHRITIS AND RHEUMATISM. 64 (4): 943-954. **I.F.: 7.87.**

2 Dasgupta B.; Cimmino M.A.; Maradit-Kremers H.; Schmidt W.A.; Schirmer M.; Salvarani C.; Bachta A.; Dejaco C.; Duftner C.; Jensen H.S.; Duhaut P.; Poor G.; Kaposi N.P.; Mandl P.; Balint P.V.; Schmidt Z.; Iagnocco A.; Nannini C.; Cantini F.; Macchioni P.; Pipitone N.; Del Amo M.; Espigol-Frigole G.; Cid M.C.; Martinez-Taboada V.M.; Nordborg E.; Direskeneli H.; Aydin S.Z.; Ahmed K.; Hazleman B.; Silverman B.; Pease C.; Wakefield R.J.; Luqmani R.; Abril A.; Michet C.J.; Marcus R.; Gonter N.J.; Maz M.; Carter R.E.; Crowson C.S.; Matteson E.L. **2012 provisional classification criteria for polymyalgia rheumatica: a European League Against Rheumatism/American College of Rheumatology collaborative initiative.** ANNALS OF THE RHEUMATIC DISEASES. 71 (4): 484-492. **I.F.: 8.73.**

3 Cervera R. **8th International Congress on Autoimmunity: new perspectives for refractory catastrophic antiphospholipid syndrome.** EXPERT REVIEWS OF CLINICAL IMMUNOLOGY. 8:617-619. **I.F.: 2.07.**

4 Bossini-Castillo L.; Simeon C.P.; Beretta L.; Broen J.C.; Vonk M.C.; Ríos-Fernández R.; Espinosa G.; Carreira P.; Camps M.T.; Castillo M.J.; González-Gay M.A.; Beltrán E.; Freire M.C.; Narváez J.; Tolosa C.; Witte T.; Kreuter A.; Schuerwegh A.J.; Hoffmann-Vold A.M.; Hesselstrand R.; Lunardi C.; Van Laar J.M.; Chee M.M.; Herrick A.; Koeleman B.P.; Denton C.P.; Fonseca C.; Radstake T.R.; Martin J.; Spanish Scleroderma Group. **A multicenter study confirms CD226 gene association with systemic sclerosis-related pulmonary fibrosis.** ARTHRITIS RES THER. 14(2):R85. **I.F.: 4.44.**

5 Perra D.; Marco A.A.; Callejas J.L.; Mesquida M.; Rios-Fernandez R.; Adan A.; Ortego N.; Cervera R.; Espinosa G. **Adalimumab for the treatment of Behcet's disease: experience in 19 patients.** RHEUMATOLOGY. 51:1825-1831. **I.F.: 4.06.**

6 Teruel M.; Simeon C.P.; Broen J.; Vonk M.C.; Carreira P.; Camps M.T.; García-Portales R.; Delgado-Frías E:; Gallego M.; Espinosa G.; Spanish Scleroderma Group; Beretta L.; Airó P.; Lunardi C.; Riemekasten G.; Witte T.; Krieg T.; Kreuter A.; Distler J.H.; Hunzelmann N.; Koeleman B.P.; Voskuyl A.E.; Schuerwegh A.J.; González-Gay M.A.; Radstake T.R.; Martin J. **Analysis of the association between CD40 and CD40 ligand polymorphisms and systemic sclerosis.** ARTHRITIS RES THER. 14(3):R154. **I.F.: 4.44.**

7 Blank M.; Krause I.; Dotan N.; Anafi L.; Eisenstein M.; Cervera R.; Meroni P.L.; Shoenfeld Y. **Anti-GalNAc beta: A novel anti-glycan autoantibody associated with pregnancy loss in women with antiphospholipid syndrome and in a mouse experimental model.** JOURNAL OF AUTOIMMUNITY. 39:420-427. **I.F.: 7.37.**

8 Zamora-Ustaran A.; Escarcega-Alarcon R.O.; Garcia-Carrasco M.; Faugier E.; Mendieta-Zeron S.; Mendoza-Pinto C.; Montiel-Jarquin A.; Munoz-Guarneros M.; Lopez-Colombo A.; Cervera R. **Antiphospholipid Syndrome in Mexican Children.** ISRAEL MEDICAL ASSOCIATION JOURNAL. 14 (5): 286-289. **I.F.: 1.02.**

9 Retamozo S.; Akasbi M.; Brito-Zerón P.; Bosch X.; Bove A.; Perez-de-Lis M.; Jimenez I.; Soto-Cardenas M.J.; Gandia M.; Diaz-Lagares C.; Viñas O.; Siso A.; Perez-Alvarez R.; Yague J.; Ramos-Casals M. **Anti-Ro52 antibody testing influences the classification and clinical characterisation of primary Sjögren's syndrome.** CLIN EXP RHEUMATOL. 30(5):686-92. **I.F.: 2.15.**

10 Enjuanes A.; Benavente Y.; Hernandez-Rodriguez J.; Queralt C.; Yague J.; Jares P.; De Sanjose S.; Campo E.; Cid M.C. **Association of NOS2 and potential effect of VEGF, IL6, CCL2 and IL1RN polymorphisms and haplotypes on susceptibility to GCA-a simultaneous study of 130 potentially functional SNPs in 14 candidate genes.** RHEUMATOLOGY. 51 (5): 841-851. **I.F.: 4.06.**

11 Van Vollenhoven R.F.; Petri M.A.; Cervera R.; Roth D.A.; Ji B.N.; Kleoudis C.S.; Zhong Z.J.; Freimuth W. **Belim-**

umab in the treatment of systemic lupus erythematosus: high disease activity predictors of response. ANNALS OF THE RHEUMATIC DISEASES. 71 (8): 1343-1349. **I.F.: 8.73.**

12 Cervera R. **CAPS Registry.** LUPUS. 21 (7): 755-757 JUN 2012. **I.F.: 2.34.**

13 Erdozain J.G.; Ruiz-Irastorza G.; Segura M.I.; Amigo M.C.; Espinosa G.; Pomar J.L.; Perez-Valero I.; Ateka-Barrutia O.; Khamashta M.A. **Cardiac Valve Replacement in Patients With Antiphospholipid Syndrome.** ARTHRITIS CARE & RESEARCH. 64:1256-1260. **I.F.: 4.85.**

14 Catoggio C.; Alvarez-Uria A.; Fernandez P.I.; Cervera R.; Espinosa G. **Catastrophic antiphospholipid syndrome triggered by fulminant disseminated herpes simplex infection in a patient with systemic lupus erythematosus.** LUPUS. 21:1359-1361. **I.F.: 2.34.**

15 Martinez-Conesa E.M.; Espel E.; Reina M.; Casaroli-Marano R.P. **Characterization of Ocular Surface Epithelial and Progenitor Cell Markers in Human Adipose Stromal Cells Derived from Lipoaspirates.** INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE. 53 (1): 513-520. **I.F.: 3.60.**

16 Cervera R.; Espinosa G. **Connective tissue diseases. Classification criteria for SLE: the latest-but not least-attempt.** NATURE REVIEWS RHEUMATOLOGY. 8:506-507. **I.F.: 8.39.**

17 Diaz-Lagares C.; Croca S.; Sangle S.; Vital E.M.; Catapano F.; Martinez-Berriotxoa A.; Garcia-Hernandez F.; Callejas-Rubio J.L.; Rascon J.; D'Cruz D.; Jayne D.; Ruiz-Irastorza G.; Emery P.; Isenberg D.; Ramos-Casals M.; Khamashta M.A. **Efficacy of rituximab in 164 patients with biopsy-proven lupus nephritis: Pooled data from European cohorts.** AUTOIMMUNITY REVIEWS. 11 (5): 357-364. **I.F.: 6.62.**

18 Cervera R. **European Forum On Antiphospholipid Antibodies: brief history report and governance document.** LUPUS. 21 (7): 699-703. **I.F.: 2.34.**

19 Urowitz M.B.; Gladman D.D.; Ibañez D.; Fortin P.R.; Bae S.C.; Gordon C.; Clarke A.; Bernatsky S.; Hanly J.G.; Isenberg D.; Rahman A.; Sanchez-Guerrero J.; Wallace D.J.;Ginzler E.; Alarcón G.S.; Merrill J.T.; Bruce I.N.; Sturfelt G.; Nived O.; Steinsson K.; Khamashta M.; Petri M.; Manzi S.; Ramsey-Goldman R.; Dooley M.A.; Van Vollenhoven R.F.; Ramos M.; Stoll T.; Zoma A.; Kalunian K.; Aranow C. **Evolution of disease burden over five years in a multicenter inception systemic lupus erythematosus cohort.** ARTHRIT CARE RES. 64(1):132-7. **I.F.: 4.85.**

20 Snowden J.A.; Saccardi R.; Allez M.; Ardizzone S.; Arnold R.; Cervera R.; Denton C.; Hawkey C.; Labopin M.; Mancardi G.; Martin R.; Moore J.J.; Passweg J.; Peters C.; Rabusin M.; Rovira M.; Van Laar J.M.; Farge D. **Haematopoietic SCT in severe autoimmune diseases: updated guidelines of the European Group for Blood and Marrow Transplantation.** BONE MARROW TRANSPLANTATION. 47 (6): 770-790 JUN 2012. **I.F.: 3.75.**

21 Cenit M.C.; Simeon C.P.; Vonk M.C.; Callejas-Rubio J.L.; Espinosa G.; Carreira P.; Blanco F.J.; Narvaez J.; Tolosa C.; Roman-Ivorra J.A.; Gomez-Garcia I.; Garcia-Hernandez F.J.; Gallego M.; Garcia-Portales R.; Egurbide M.V.; Fonollosa V.; Garcia de la Pena P.; Lopez-Longo F.J.; Gonzalez-Gay M.A.; Hesselstrand R.; Riemekasten G.; Witte T.; Voskuyl A.E.; Schuerwegh A.J.; Madhok R.; Fonseca C.; Denton C.; Nordin A.; Palm O.; Van Laar J.M.; Hunzelmann N.; Distler J.H.W.; Kreuter A.; Herrick A.; Worthington J.; Koeleman B.P.; Radstake T.R.D.J.; Martin J. **Influence of the IL6 Gene in Susceptibility to Systemic Sclerosis.** JOURNAL OF RHEUMATOLOGY. 39:2294-2302. **I.F.: 3.69.**

22 Bertsias G.K.; Tektonidou M.; Amoura Z.; Aringer M.; Bajema I.; Berden J.H.M.; Boletis J.; Cervera R.; Doerner T.; Doria A.; Ferrario F.; Floege J.; Houssiau F.A.; Ioannidis J.P.A.; Isenberg D.A.; Kallenberg C.G.M.; Lightstone L.; Marks S.D.; Martini A.; Moroni G.; Neumann I.; Praga M.; Schneider M.; Starra A.; Tesar V.; Vasconcelos C.; Van Vollenhoven R.F.; Zakharova H.; Haubitz M.; Gordon C.; Jayne D.; Boumpas D.T. **Joint European League Against Rheumatism and European Renal Association-European Dialysis and Transplant Association (EULAR/ERA-EDTA) recommendations for the management of adult and paediatric lupus nephritis.** ANNALS OF THE RHEUMATIC DISEASES. 71:1771-1782. **I.F.: 8.73.**

23 Prieto-Gonzalez S.; Arguis P.; Garcia-Martinez A.; Espigol-Frigole G.; Tavera-Bahillo I.; Butjosa M.; Sanchez M.; Hernandez-Rodriguez J.; Grau J.M.; Cid M.C. **Large vessel involvement in biopsy-proven giant cell arteritis: prospective study in 40 newly diagnosed patients using CT angiography.** ANNALS OF THE RHEUMATIC DISEASES. 71 (7): 1170-1176. **I.F.: 8.73.**

24 Perez N.S.; Garcia-Herrera A.; Rosinol L.; Palos L.; Santiago E.; Esinosa G.; Sole M.; Campistol J.M.; Quintana L.F. **Lymphoplasmacytic lymphoma causing light chain cast nephropathy.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (1): 450-453. **I.F.: 3.40.**

25 Brito-Zerón P.; Retamozo S.; Gandía M.; Akasbi M.; Pérez-De-Lis M.; Diaz-Lagares C.; Bosch X.; Bové A.; Pérez-Alvarez R.; Soto-Cárdenas M.J.; Sisó A.; Ramos-Casals M. **Monoclonal gammopathy related to Sjögren syndrome: a key marker of disease prognosis and outcomes.** J AUTOIMMUN. 39(1-2):43-8. **I.F.: 7.37.**

26 Anton J.M.; Castro P.; Espinosa G.; Marcos M.; Gandia M.; Merchan R.; Cervera R.; Nicolas J.M. **Mortality and long-term survival prognostic factors of patients with systemic autoimmune diseases admitted to an intensive care unit: a retrospective study.** CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 30 (3): 338-344. **I.F.: 2.15.**

27 Cenit M.C.; Simeon C.P.; Fonollosa V.; Espinosa G.; Beltran E.; Saez-Comet L.; Vicente-Rabaneda E.; Garcia-Hernandez F.J.; Martinez-Estupinan L.; Rodriguez-Carballeira M.; Hernandez V.; De la Pena P.G.; Fernandez-Castro M.; Narvaez F.J.; Pros A.; Gallego M.; Rios-Fernandez R.; Camps M.T.; Fernandez-Nebro A.; Egurbide M.V.; Carreira P.; Gonzalez-Gay M.A.; Martin J. **No evidence of association between functional polymorphisms located within IL6R and IL6ST genes and systemic sclerosis.** TISSUE ANTIGENS. 80: 254-258. **I.F.: 2.59.**

28 Matteson E.L.; Maradit-Kremers H.; Cimmino M.A.; Schmidt W.A.; Schirmer M.; Salvarani C.; Bachta A.; Dejaco C.; Duftner C.; Jensen H.S.; Poor G.; Kaposi N.P.; Mandl P.; Balint P.V.; Schmidt Z.; Iagnocco A.; Cantini F.; Nannini C.; Macchioni P.; Pipitone N.; Del Amo M.; Espigol-Frigole G.; Cid M.C.; Martinez-Taboada V.M.; Nordborg E.; Direskeneli H.; Aydin S.Z.; Ahmed K.; Hazelman B.; Pease C.; Wakefield R.J.; Luqmani R.; Abril A.; Marcus R.; Gonter N.J.; Maz M.; Crowson C.S.; Dasgupta B. **Patient-reported Outcomes in Polymyalgia Rheumatica.** JOURNAL OF RHEUMATOLOGY. 39 (4): 795-803. **I.F.: 3.69.**

29 Garcia-Arumi J.; Amselem L.; Gunduz K.; Badal J.; Adan A.; Zapata M.A.; Valldeperas X.; Huste F.; Corcostegui B. **Photodynamic therapy for symptomatic subretinal fluid related to choroidal nevus.** RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES. 32 (5): 936-941. **I.F.: 2.81.**

30 Simeon-Aznar C.P.; Fonollosa-Pla V.; Tolosa-Vilella C.; Espinosa-Garriga G.; Ramos-Casals M.; Campillo-Grau M.; Garcia-Hernandez F.J.; Castillo-Palma M.J.; Sanchez-Roman J.; Callejas-Rubio J.L.; Ortego-Centeno N.; Egurbide-Arberas M.V.; Trapiellla-Martinez L.; Gallego-Villalobos M.; Saez-Comet L.; Velilla-Marco J.; Camps-Garcia M.T.; De Ramon-Garrido E.; Esteban Marcos E.M.; Pallares-Ferreres L.; Hidalgo-Tenorio C.; Sabio-Sanchez J.M.; Gomez-de la Torre R.; Salvador-Cervello G.; Rios-Blanco J.J.; Gil-Aguado A.; Vilardell-Tarres M. **Registry of the Spanish Network for Systemic Sclerosis: Clinical Pattern According to Cutaneous Subsets and Immunological Status.** SEMINARS IN ARTHRITIS AND RHEUMATISM. 41 (6): 789-800. **I.F.: 4.97.**

31 Stoenoiu M.S.; Aydin S.; Tektonidou M.; Ravelingien I.; Le Guern V.; Fiehn C.; Remy P.; Delahousse M.; Petera P.; Quemeneur T.; Vasconcelos C.; D'Cruz D.; Gilboe I.M.; Jadoul M.; Karras A.; Depresseux G.; Guillevin L.; Cervera R.; Cosyns J.P.; Houssiau F.A. **Repeat kidney biopsies fail to detect differences between azathioprine and mycophenolate mofetil maintenance therapy for lupus nephritis: data from the MAINTAIN Nephritis Trial.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (5): 1924-1930. **I.F.: 3.40.**

32 Martinez-Zamora M.A.; Peralta S.; Creus M.; Tassies D.; Reverter J.C.; Esinosa G.; Cervera R.; Carmona F.; Balasch J. **Risk of thromboembolic events after recurrent spontaneous abortion in antiphospholipid syndrome: a case-control study.** ANNALS OF THE RHEUMATIC DISEASES. 71 (1): 61-66. **I.F.: 8.73.**

33 Hanly J.G.; Urowitz M.B.; Su L.; Gordon C.; Bae S.C.; Sanchez-Guerrero J.; Romero-Diaz J.; Wallace D.J.; Clarke A.E.; Ginzler E.M.; Merrill J.T.; Isenberg D.A.; Rahman A.; Petri M.; Fortin P.R.; Gladman D.D.; Bruce I.N.; Steinsson K.; Dooley M.A.; Khamashta M.A.; Alarcon G.S.; Fessler B.J.; Ramsey-Goldman R.; Manzi S.; Zoma A.A.; Sturfelt G.K.; Nived O.; Aranow C.; Mackay M.; Ramos-Casals M.; Van Vollenhoven R.F.; Kalunian K.C.; Ruiz-Irastorza G.; Lim S.; Kamen D.L.; Peschken C.A.; Inanc M.; Theriault C.; Thompson K.; Farewell V. **Seizure disorders in systemic lupus erythematosus results from an international, prospective, inception cohort study.** ANNALS OF THE RHEUMATIC DISEASES. 71: 1502-1509. **I.F.: 8.73.**

34 Baldini M.; Maugeri N.; Ramirez G.A.; Giacomassi C.; Castiglioni A.; Prieto-Gonzalez S.; Corbera-Bellalta M.; Di Comite G.; Papa I.; Dell'Antonio G.; Ammirati E.; Cuccovillo I.; Vecchio V.; Mantovani A.; Rovere-Querini P.; Sabbadini M.G.; Cid M.C.; Manfredi A.A. **Selective up-regulation of the soluble pattern-recognition receptor pentraxin 3 and of vascular endothelial growth factor in giant cell arteritis: Relevance for recent optic nerve ischemia.** ARTHRITIS AND RHEUMATISM. 64 (3): 854-865. **I.F.: 7.87.**

35 Giralt J.; Rey A.; Villanueva R.; Alforja S.; Casaroli-Marano R.P. **Severe visual loss in a breast cancer patient on chemotherapy.** MEDICAL ONCOLOGY. 29: 2567-2569. **I.F.: 2.14.**

36 Lema Gontad J.M.; Espinosa Garriga G. **Sjogren's syndrome and vasculitis associated with antineutrophil cytoplasmic antibodies.** MEDICINA CLINICA. 139: 554-555. **I.F.: 1.38.**

37 Milla E.; Stirbu O.; Rey A.; Duch S.; Buchacra O.; Robles A.; Navarro C.; Gil R.; Cordero J.M. **Spanish multicenter tafluprost tolerability study.** BRITISH JOURNAL OF OPHTHALMOLOGY. 96 (6): 826-831. **I.F.: 2.90.**

38 Hernandez-Rodriguez J.; Tan C.D.; Koening C.L.; Khasnis A.; Rodriguez E.R.; Hoffman G.S. **Testicular Vasculitis Findings Differentiating Isolated Disease From Systemic Disease in 72 Patients.** MEDICINE. 91 (2): 75-85. **I.F.: 4.35.**

39 Martin J.E.; Carmona F.D.; Broen J.C.A.; Simeon C.P.; Vonk M.C.; Carreira P.; Rios-Fernandez R.; Espinosa G.; Vicente-Rabaneda E.; Tolosa C.; Garcia-Hernandez F.J.; Castellvi I.; Fonollosa V.; Gonzalez-Gay M.A.; Saez-Comet L.; Portales R.G.; De la Pena P.G.; Fernandez-Castro M.; Diaz B.; Martinez-Estupinan L.; Coenen M.; Voskuyl A.E.; Schuerwegh A.J.; Vanthuyne M.; Houssiau F.; Smith V.; De Keyser F.; De Langhe E.; Riemekasten G.; Witte T.; Hunzelmann N.; Kreuter A.; Palm O.; Chee M.M.; Van Laar J.M.; Denton C.; Herrick A.; Worthington J.; Koeleman B.P.C.; Radstake T.R.D.J.; Fonseca C.; Martin J. **The autoimmune disease-associated IL2RA locus is involved in the clinical manifestations of systemic sclerosis.** GENES AND IMMUNITY. 13 (2): 191-196. **I.F.: 3.87.**

40 Ramos-Casals M.; Stone J.H.; Cid M.C.; Bosch X. **The cryoglobulinaemias.** LANCET. 379 (9813): 348-360. **I.F.: 38.28.**

41 Fuchs M.; Briel M.; Daikeler T.; Walker U.A.; Rasch H.; Berg S.; Ng QKT; Raatz H.; Jayne D.; Kotter I.; Blockmans D.; Cid M.C.; Prieto-Gonzalez S.; Lamprecht P.; Salvarani C.; Karageorgaki Z.; Watts R.; Luqmani R.; Mueller-Brand J.; Tyndall A.; Walter M.A. **The impact of F-18-FDG PET on the management of patients with suspected large vessel vasculitis.** EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 39 (2): 344-353. **I.F.: 4.99.**

42 Anaya J.M.; Castiblanco J.; Rojas-Villarraga A.; Pineda-Tamayo R.; Levy R.A.; Gomez-Puerta J.; Dias C.; Mantilla R.D.; Esteban Gallo J.; Cervera R.; Shoenfeld Y.; Arcos-Burgos M. **The Multiple Autoimmune Syndromes. A Clue for the Autoimmune Tautology.** CLINICAL REVIEWS IN ALLERGY & IMMUNOLOGY. 43:256-264. **I.F.: 3.68.**

43 Arnaud L.; Devilliers H.; Peng S.L.; Mathian A.; Costedoat-Chalumeau N.; Buckner J.; Dagna L.; Michet C.; Sharma A.; Cervera R; Haroche J.; Papo T.; D'Cruz D.; Arlet P.; Zwerina J.; Belot A.; Suzuki N.; Harle J.R.; Moots R.; Jayne D.; Hachulla E.; Marie I.; Tanaka T.; Lebovics R.; Scott D.; Kucharz E.J.; Birchall M.; Kong K.O.; Gorochov G.; Amoura Z. **The Relapsing Polychondritis Disease Activity Index: Development of a disease activity score for relapsing polychondritis.** AUTOIMMUNITY REVIEWS. 12: 204-209. **I.F.: 6.62.**

44 Mansour A.M.; Arevalo J.F.; Fardeau C.; Hrisomalos E.N.; Chan W.M.; Lai T.Y.Y.; Ziemssen F.; Ness T.; Sibai A.M.; Mackensen F.; Wolf A.; Hrisomalos N.; Heiligenhaus A.; Spital G.; Jo Y.; Gomi F.; Ikuno Y.; Akesbi J.; Phuc LeHoang; Adan A.; Mahendradas P.; Khairallah M.; Guthoff R.; Ghandour B.; Kucukerdonmez C.; Kurup S.K. **Three-year visual and anatomic results of administrating intravitreal bevacizumab in inflammatory ocular neovascularization.** CANADIAN JOURNAL OF OPHTHALMOLOGY-JOURNAL CANADIEN D OPHTALMOLOGIE. 47: 269-274. **I.F.: 1.47.**

45 Mosca M.; Boumpas D.; Bruce I.N.; Cervera R.; Czirjak L.; Doerner T.; Houssiau F.; Jacobsen S.; Schneider M.; Smolen J.S.; Voskuyl A.E.; Van Vollenhoven R.F. **Treat-to-target in systemic lupus erythematosus: where are we today?** CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 30:S112-S115. **I.F.: 2.15.**

46 Cervera R.; Espinosa G. **Update on the Catastrophic Antiphospholipid Syndrome and the "CAPS Registry".** SEMINARS IN THROMBOSIS AND HEMOSTASIS. 38 (4): 333-338. **I.F.: 4.52.**

47 Belles V.L.; Civera A.A.; Garriga G.E.; Segura R.C.; Martinez J.G.; Colas L.P.; Keller J.; Torrente A.R.; Febrer M.M. **Uveitis diagnosis characterization at a referral centre in the area of Barcelona, Spain.** MEDICINA CLINICA. 138 (7): 277-282. **I.F.: 1.38.**

48 Chamorro A.J.; Marcos M.; Miron-Canelo J.A.; Cervera R.; Espinosa G. **Val247Leu beta2-glycoprotein-I allelic variant is associated with antiphospholipid syndrome: Systematic review and meta-analysis.** AUTOIMMUNITY REVIEWS. 11:705-712. **I.F.: 6.62.**

49 Silvarino R.; Danza A.; Merola V.; Berez A.; Mendez E.; Espinosa G.; Cervera R. **Venous thromboembolic disease in systemic autoimmune diseases: An association to keep in mind.** AUTOIMMUNITY REVIEWS. 12:289-294. **I.F.: 6.62.**

50 Akasbi M.; Berenguer J.; Saiz A.; Brito-Zeron P.; Perez-De-Lis M.; Bove A.; Diaz-Lagares C.; Retamozo S.; Blanco Y.; Perez-Alvarez R.; Bosch X.; Siso A.; Graus F.; Ramos-Casals M. **White matter abnormalities in primary Sjogren syndrome.** QJM-AN INTERNATIONAL JOURNAL OF MEDICINE. 105 (5): 433-443. **I.F.: 2.32.**

REVIEWS
I.F.: 54.61

1 Gómez-Puerta J.A.; Quintana L.F.; Stone J.H.; Ramos-Casals M. Bosch X. **B-cell depleting agents for ANCA vasculitides: a new therapeutic approach.** AUTOIMMUNITY REVIEWS. 11(9):646-52. **I.F.: 6.62.**

2 Ramos-Casals M.; Sanz I.; Bosch X.; Stone J.H.; Khamashta M.A. **B-cell-depleting Therapy in Systemic Lupus Erythematosus.** AMERICAN JOURNAL OF MEDICINE. 125 (4): 327-336. **I.F.: 5.43.**

3 Lopez-Pedrera C.; Perez-Sanchez C.; Ramos-Casals M.; Santos-Gonzalez M.; Rodriguez-Ariza A.; Cuadrado M.J. **Cardiovascular Risk in Systemic Autoimmune Diseases: Epigenetic Mechanisms of Immune Regulatory Functions.** CLINICAL & DEVELOPMENTAL IMMUNOLOGY. 2012:974648. **I.F.: 1.84.**

4 Cervera R.; Conti F.; Doria A.; Iaccarino L.; Valesini G. **Does seronegative antiphospholipid syndrome really exist?** AUTOIMMUNITY REVIEWS. 11 (8): 581-584 Sp. Iss. **I.F.: 6.62.**

5 Seror R.; Bootsma H.; Bowman S.J.; Doerner T.; Gottenberg J.E.; Mariette X.; Ramos-Casals M.; Ravaud P.; Theander E.; Tzioufas A.; Vitali C. **Outcome measures for primary Sjogren's syndrome.** JOURNAL OF AUTOIMMUNITY. 39 (1-2): 97-102 Sp. Iss. **I.F.: 7.37.**

6 Martinez-Zamora M.A.; Cervera R.; Balasch J. **Recurrent Miscarriage, Antiphospholipid Antibodies and the Risk of Thromboembolic Disease.** CLINICAL REVIEWS IN ALLERGY & IMMUNOLOGY. 43:265-274. **I.F.: 3.68.**

7 Bosch X.; Ramos-Casals M.; Khamashta M.A. **The DWEYS peptide in systemic lupus erythematosus.** TRENDS IN MOLECULAR MEDICINE. 18 (4): 215-223 **I.F.: 10.35.**

8 Ramos-Casals M.; Brito-Zerón P.; Sisó-Almirall A.; Bosch X.; Tzioufas A.G.; **Topical and systemic medications for the treatment of primary Sjögren's syndrome.** NAT REV RHEUMATOL. 8(7):399-411. **I.F.: 8.39.**

9 Hernandez-Rodriguez J.; Hoffman G.S. **Updating single-organ vasculitis.** CURRENT OPINION IN RHEUMATOLOGY. 24 (1): 38-45. **I.F.: 4.31.**

EDITORIALS
I.F.: 72.95

1 Ramos-Casals M.; Khamashta M.A. **CONNECTIVE TISSUE DISEASES Trial of SLE therapies in real-world settings.** NATURE REVIEWS RHEUMATOLOGY. 8 (3): 128-130. **I.F.: 8.39.**

2 Adan A.; Sole M.; Mateo C.; Saint Jean A.; Alforja S. **Cytologic identification of Toxoplasma gondii from subretinal aspirate.** ACTA OPHTHALMOLOGICA. 90 (4): 392-393. **I.F.: 2.63.**

3 Ruiz-Irastorza G.; Espinosa G.; Jimenez-Alonso J.; Pallares L.; Robles A. **Diagnosis and treatment of lupus nephritis: the way to consensus.** REVISTA CLINICA ESPANOLA. 212 (3): 155-156. **I.F.: 2.01.**

4 Anaya J.M.; Shoenfeld Y.; Cervera R. **Facts and challenges for the autoimmunologist. Lessons from the second Colombian autoimmune symposium.** AUTOIMMUNITY REVIEWS. 11 (4): 249-251 Sp. Iss. **I.F.: 6.62.**

5 Cid M.C. **The Search for Genetic Links in ANCA-Associated Vasculitis and Its Variants.** NEW ENGLAND JOURNAL OF MEDICINE. 367 (3): 271-273. **I.F.: 53.30.**

MULTICENTRICS
I.F.: 45.68

1 Juanós Iborra M, Selva-O'Callaghan A, Solanich Moreno J, Vidaller-Palacin A, Martí S, Grau Junyent JM, Vilardell Tarrés M; Grupo para estudio de la Enfermedad de Erdheim-Chester **[Erdheim-Chester disease: study of 12 cases].** MED CLIN-BARCELONA. 139(9):398-403. **I.F.: 1.38.**

2 Broen J.C.; Bossini-Castillo L.; Van Bon L.; Vonk M.C.; Knaapen H.; Beretta L.; Rueda B.; Hesselstrand R.; Herrick A.; Worthington J.; Hunzelman N.; Denton C.P.; Fonseca C.; Riemekasten G.; Kiener H.P.; Scorza R.; Simeón C.P.; Ortego-Centeno N.; Gonzalez-Gay M.A.; Airò P.; Coenen M.J.; Martín J., Radstake T.R.; Spanish Systemic Sclerosis Group. **A rare polymorphism in the gene for Toll-like receptor 2 is associated with systemic sclerosis phenotype and increases the production of inflammatory mediators.** ARTHRITIS RHEUM-US. 64(1):264-71. **I.F.: 7.87.**

3 Bossini-Castillo L, Martin JE, Broen J, Gorlova O, Simeón CP, Beretta L, Vonk MC, Callejas JL, Castellví I, Carreira P, García-Hernández FJ, Fernández Castro M; Spanish Scleroderma Group, Coenen MJ, Riemekasten G, Witte T, Hunzelmann N, Kreuter A, Distler JH, Koeleman BP, Voskuyl AE, Schuerwegh AJ, Palm Ø, Hesselstrand R, Nordin A, Airó P, Lunardi C, Scorza R, Shiels P, van Laar JM, Herrick A, Worthington J, Denton C, Tan FK, Arnett FC, Agarwal SK, Assassi S,Fonseca C, Mayes MD, Radstake TR, Martin J. **A GWAS follow-up study reveals the association of the IL12RB2 gene with systemic sclerosis in Caucasianpopulations.** HUM MOL GENET. 21(4):926-33. **I.F.: 7.64.**

4 Beretta L.; Rueda B.; Marchini M.; Santaniello A.; Simeón C.P.; Fonollosa V.; Caronni M.; Rios-Fernandez R.; Carreira P.; Rodriguez-Rodriguez L.; Spanish Systemic Sclerosis Group. **Analysis of Class II human leucocyte antigens in Italian and Spanish systemic sclerosis.** RHEUMATOLOGY. 51(1):52-9. **I.F.: 4.06.**

5 Denton C.P.; Krieg T.; Guillevin L.; Schwierin B.; Rosenberg D.; Silkey M.; Zultak M.; Matucci-Cerinic M.; DUO Registry investigators. **Demographic, clinical and antibody characteristics of patients with digital ulcers in systemic sclerosis: data from the DUO Registry.** ANNALS OF THE RHEUMATIC DISEASES. 71(5):718-21. **I.F.: 8.73.**

6 Sundel R.; Solomons N.; Lisk L.; Group for the Aspreva Lupus Management Study (ALMS). **Efficacy of mycophenolate mofetil in adolescent patients with lupus nephritis: evidence from a two-phase, prospective randomized trial.** LUPUS. 21: 1433-1443. **I.F.: 2.34.**

7 Carmona F.D.; Serrano A.; Rodríguez-Rodríguez L.; Callejas J.L.; Simeón C.P.; Carreira P.; Castañeda S.; Solans R.; Blanco R.; Spanish Scleroderma Group; Spanish Giant Cell Arteritis Group, González-Gay M.A.; Martín J. **Evaluation of a shared autoimmune disease-associated polymorphism of TRAF6 in systemic sclerosis and giantcell arteritis.** J RHEUMATOL. 39(6):1275-9. **I.F.: 3.69.**

8 Martin J.E.; Broen J.C.; Carmona F.D.; Teruel M.; Simeon C.P.; Vonk M.C.; Van 't Slot R.; Rodriguez-Rodriguez L.; Vicente E.; Fonollosa V.; Ortego-Centeno N.; González-Gay M.A.; García-Hernández F.J.; De la Peña P.G.; Carreira P.; Spanish Scleroderma Group; Voskuyl A.E.; Schuerwegh A.J.; Van Riel P.L.; Kreuter A.; Witte T.; Riemekasten G.; Airo P.; Scorza R.; Lunardi C.; Hunzelmann N.; Distler J.H.; Beretta L.; Van Laar J.; Chee M.M.; Worthington J.; Herrick A.; Denton C.; Tan F.K.; Arnett F.C.; Assassi S.; Fonseca C.; Mayes M.D.; Radstake T.R.; Koeleman B.P.; Martin J. **Identification of CSK as a systemic sclerosis genetic risk factor through Genome Wide Association Study follow-up.** HUM MOL GENET. 21(12):2825-35. **I.F.: 7.64.**

9 Alijotas-Reig J.; Ferrer-Oliveras R.; Study Group on behalf of the EUROAPS. **The European Registry on Obstetric Antiphospholipid Syndrome (EUROAPS): A preliminary first year report.** LUPUS. 21: 766-768. **I.F.: 2.34.**

CLINICAL GUIDELINES
I.F.: 9.73

1 Ruiz Irastorza G.; Espinosa G.; Frutos M.A.; Jiménez Alonso J.; Praga M.; Pallarés L.; Rivera F.; Robles Marhuenda A.; Segarra A.; Quereda C.; Spanish Society ofInternal Medicine (SEMI); Spanish Society of Nephrology (SEN). **Diagnosis and treatment of lupus nephritis. Consensus document from the systemic auto-immune disease group(GEAS) of the Spanish Society of Internal Medicine (SEMI) and Spanish Society of Nephrology (S.E.N.).** NEFROLOGIA. 32 Suppl 1:1-35. **I.F.: 1.00.**

2 Bertsias G.K.; Tektonidou M.; Amoura Z.; Aringer M.; Bajema I.; Berden J.H.; Boletis J.; Cervera R.; Dörner T.; Doria A.; Ferrario F.; Floege J.; Houssiau F.A.; Ioannidis J.P.; Isenberg D.A.; Kallenberg C.G.; Lightstone L.; Marks S.D.; Martini A.; Moroni G.; Neumann I.; Praga M.; Schneider M.; Starra A.; Tesar V.; Vasconcelos C.; Van Vollenhoven R.F.; Zakharova H.; Haubitz M.; Gordon C.; Jayne D.; Boumpas D.T.; European League Against Rheumatism and European Renal Association-European Dialysis and Transplant Association **Joint European League Against Rheumatism and European Renal Association-European Dialysis and TransplantAssociation (EULAR/ ERA-EDTA) recommendations for the management of adult and paediatric lupus nephritis.** ANNALS OF THE RHEUMATIC DISEASES. 71(11):1771-82. **I.F.: 8.72.**

GRANTS FOR RESEARCH IN PROGRESS

Cid M.C. **Mecanismos implicados y consecuencias clínicas de la persistencia de la inflamación vascular en la arteritis de células gigantes. Identificación de dianas terapéuticas.** Sponsored by: Ministerio de Ciencia e Innovación (Plan Nacional I+D), SAF 08/04328. Duration: 01/01/2009-31/12/2012.

Ramos M. **Alteraciones genéticas del sistema inmunitario innato y estado protrombótico como factores predisponentes de arteriosclerosis subclínica y enfermedad cardiovascular en pacientes con síndrome de Sjögren primario.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI080103. Duration: 01/01/2009-30/06/2012.

Casaroli R. **Análisis celular y molecular de las células progenitoras mesenquimales estromales de la medula ósea humana y su potencial en la en la terapia celular para la superficie ocular.** Sponsored by: Instituto de Salud Carlos III, PI09/0992. Duration: 01/01/2010-31/12/2012.

Ramos M. **Multilingual Organic Information Management in the Medical Domain.** Sponsored by: European Comission, Coordinador: Kentro Erevnon Notioanatolikis Evropis Astiki Mi Kerdoskopiki, 250534. Duration: 01/03/2010-31/08/2012.

Ramos M. **Susceptibilitat immunogenètica i alteracions metabòliques com a factors etiopatogènics de dolor crònic en pacients amb síndrome de Sjögren en comparació amb pacients atesos a l'àmbit de l'atenció primària.** Sponsored by: Fundació La Marató de TV3, 071810. Duration: 13/02/2008-31/03/2013.

Casaroli R. **Medicina Regenerativa en la Superfície Ocular: Aplicación de terapia celular para la reparación de la superficie oculr mediante amplificación ex vivo de células progenitoras autólogas del limbo esclerocorneal sobre membrana amniótica.** Sponsored by: Ministerio de Sanidad, Politica Social e Igualdad, TRA-072. Duration: 01/01/2010-31/12/2012.

Cervera R. **Grup de recerca de malalties autoimmunes sistèmiques.** Sponsored by: AGAUR_ SGR09, 2009_SGR_1421. Duration: 15/09/2009-31/12/2013.

Ramos M. **Grup de Recerca en la Síndrome de Sjögren (GRESS).** Sponsored by: AGAUR_SGR09, 2009_SGR_1357. Duration: 28/09/2009-31/12/2013.

Adan AM. **Estudio de factores predictores para el desarrollo de recurrencias en la toxoplasmosis ocular.** Sponsored by: Instituto de Salud Carlos III (ISCIII), 010PI10/00479. Duration: 01/01/2011-31/12/2013.

Cid M.C. **Grup de Recerca sobre Inflamació Vascular (vasculitis).** Sponsored by: AGAUR_SGR09, 2009_SGR_1301. Duration: 15/09/2009-31/12/2013.

Cid M.C. **Mecanismos implicados en la persistencia de la inflamación y la oclusión vascular en la arteritis de células gigantes, biomarcadores de actividad y remodelado vascular.** Sponsored by Ministerio de Economía y Competitividad SAF2011-30073. Duration 01/01/2012-31/12/2014.

Cid M.C. **Mechanisms involved in the development of neurologic ischemic complications in giant-cell arteritis.** Sponsored by Marató TV3. Duration 06/02/2007-10/02/2012.

DOCTORAL THESES

Casaroli R. **In the search for an effective treatment and optimal dosing for patients with choroidal neovascularization: a 20-year journey, and the fusion regimen: a disease activity guided treatment algorithm with ranibizumab in naïve subjects with choroidal neovascu.** PhD student: Jordi Monés Carilla.

Cid M. **Diferenciació funcional TH17 en l'expressió fenotípica i evolució clínica de l'arteritis de cèl·lules gegants.** Rol de l'axis IL23/IL-17 en la inflamació vascular. PhD student: Georgina Espígol Frigolé.

Ramos M. **Caracterización clínico-evolutiva de la afección neurológica del síndrome de Sjögren.** PhD student: Miriam Akasbi Montalvo.

Ramos M. **Efectos adversos desencadenados por el uso de terapias biológicas. Clasificación, caracterización y manejo clínico.** PhD student: Roberto Pérez Alvarez.

Ramos M. **Terapia depletiva de células B en lupus eritematoso sistémico: análisis de la eficacia y seguridad en pacientes graves y/o refractarios.** PhD student: Cándido Díaz Lagares.

Ramos M. **Papel etiopatogénico de los polimorfismos genéticos de moléculas de inmunidad innata en el síndrome de Sjögren primario: Influencia en la expresión clínica, calidad de vida y riesgo cardiovascular.** PhD student: Myriam Gandía.

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Infectious diseases and AIDS

TEAM INVOLVED IN:

GROUP MEMBERS

TEAM LEADER
Josep M. Gatell
(Hospital Clínic)
Tel.: 93 227 54 30
E-mail:
jmgatell@clinic.cat

GROUP LEADERS:
José M. Miró (Hospital Clínic)
Asunción Moreno (Hospital Clínic)
Josep M. Gatell (Hospital Clínic)
Alex Soriano (Hospital Clínic)

RESEARCHERS:
Mireia Arnedo (IDIBAPS)
Miguel Caballero (Hospital Clínic)
Felipe García (Hospital Clínic)
Montserrat Laguno (Fundació Clínic)
Josep Mallolas (Hospital Clínic)
Esteban Martínez (Hospital Clínic)
José Antonio Martínez (Hospital Clínic)
José Mensa (Hospital Clínic)
Montserrat Plana (IDIBAPS)
M. Eloisa Yuste (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Christian Manzardo (Fundació Clínic)
Hodei Arneras (Fundacio Clinic)
Laura Linares (IDIBAPS)
Gemma Sanclemente (Hospital Clínic)
Irma Hoyo (UB)
Carolina Ferreira (IDIBAPS)
Berta Torres (Fundació Clinic)

TECHNICIANS:
Pilar Callau (Fundació Clínic)
Tuixent Escriba (IDIBAPS)
Ana García (Fundació Clínic)
Maria Teresa García (Fundació Clínic)
Carmen Hurtado (Fundació Clínic)
M. José Maleno (Fundació Clínic)
Laia Miralles (IDIBAPS)
Sara Nieto (IDIBAPS)
Yolanda Armero (Fundació Clínic)
Alberto Crespo (IDIBAPS)
Manuel Enric Bargalló (IDIBAPS)
Carmen Álvarez (Fundació Clínic)
Cristina Rovira (Fundació Clínic)
Alberto Merino (IDIBAPS)

NURSING STAFF:
Emmanuela Fernandez (Fundació Clínic)

ADMINISTRATIVE STAFF:
Carmen Mensa (IDIBAPS)
Irene Ruíz (Fundació Clínic)

STATISTICIAN:
Jose Ignacio Pérez (Fundació Clínic)

COLLABORATORS:
José Luis Blanco (Hospital Clínic)
Marta Calvo (Fundació Clinic)
Carlos Cervera (Hospital Clínic)
Nuria Climent (IDIBAPS)
Ana del Rio (Hospital Clínic)
Teresa Gallart (Hospital Clínic)
Joan Joseph (Fundació Clínic)
Agathe León (Fundació Clínic)
Montserrat Loncà (Fundació Clínic)
Sonsoles Sánchez-Palomino (Fundació Clínic)
Narcís Saubí (IDIBAPS)
Laura Zamora (Fundació Clínic)
María Martínez (IDIBAPS)
Víctor Sánchez-Merino (Fundació Clínic)
Cristina García de la María (Fundació Clínic)
Nazaret Cobos (IDIBAPS)
Laura Maroto (Fundació Cliinic)
Ana Gonzalez (Fundació Clínic)
Florencia Etcheverry (Fundació Clínic)
Luisa Benito Serrano (GESCLINIC)
Zoe Herreras Pérez (CAPSE)
Ignacio Menacho Pascual (GESCLINIC)
Ethel Sequeira Aymar (CAPSE)
Olga Barba (CAPSE)
Mª Angeles Moreno Ubiedo (CAPSE)
Marta Catalan (CAPSE)
Valentin Araunde (CAPSE)
Ana Picas (GESCLINIC)
Jordi Hoyo (GESCLINIC)
Mª Jose Giner (GESCLINIC)
Dani Cararach (GESCLINIC)
Eloisa Molés (GESCLINIC)
Mª Luisa Moro (GESCLINIC)
Pilar Arrabal (GESCLINIC)

VISITING SCIENTISTS:
Gilles Mirambeau (UB)

STRATEGIC OBJECTIVES

1. In the AIDS field:

- Immunotherapy of the disease and natural and acquired defense mechanisms, including the development of therapeutic and preventive vaccines.
- Efficacy and resistance and tolerance mechanisms of new antiretrovirals.
- Immunopathogenesis, treatment response and resistance mechanisms of certain opportunistic infections, including tuberculosis, pneumocystis carinii pneumonia (PCP) and toxoplasmosis.
- Non-AIDS defining complications related with age.

2. In the general infections field:

- Prevention and treatment support in endocarditis due to multiresistant microrganisms, including animal models.
- Infection in solid-organ transplant recipients.
- Interactions between nosocomial infections and antibiotic use.

MAIN LINES OF RESEARCH

1. In the AIDS field:

- The most important line focuses on the **peripheral** (blood) **and central response** (lymphatic tissue and cerebrospinal fluid) **to different antiretroviral therapies** when administered in very early evolutive stages (CD4 > 500 mm3). We have developed ultrasensitive techniques for the determination of viral load in plasma and tissues, as well as techniques for the determination of genotypic resistance and for immunophenotyping and the evaluation of CD4+ lymphocyte proliferation in response to antigens of the HIV virus. Techniques for the determination of drug levels have also been developed in collaboration with the clinical pharmacology group. Having ruled out the possibility of eradicating the HIV virus, the working hypothesis is to see whether it is possible to almost completely suppress HIV replication over the long term, recover the host immune system and quantify the degree of such recovery. The interruption of treatment leads to a rapid disease

RESEARCH GROUP
ENDOCARDITIS. CARDIOVASCULAR INFECTIONS. EXPERIMENTAL MODEL

Group Leader:
Josep Maria Miro
(Hospital Clínic)

This group studies the epidemiological, clinical, diagnostic, preventive and therapeutic aspects of infectious endocarditis. This is done based on studies of local, national or international cohorts (ICE) that have revealed an increase in endocarditis produced by methicillin-sensitive and -resistant Staphylococcus aureus (MSSA and MRSA, respectively). Studies using the experimental model of endocarditis due to MRSA and glycopeptide intermediate-resistant Staphylococcus aureus (GISA) have evaluated the activity of new antibiotic combinations (phosphomycin and imipenem), or new antibiotics such as daptomycin and telavancin.

RESEARCH GROUP
INFECTIONS IN SOLID-ORGAN TRANSPLANT RECIPIENTS

Group Leader:
Asuncion Moreno
(Hospital Clínic)

In the last years, this group has studied the clinical and evolutive characteristics of bacteremias in patients subjected to different solid organ transplants (kidney, liver, heart and renal-pancreatic). We have shown that mannose binding to lectin polymorphisms (MBL) condition an increase in the prevalence of cytomegalovirus (CMV) disease, and have analyzed the mortality risk factors of pneumonia in transplant patients.Studies have been made of the prevalence of other viruses of the herpes group (HHV-6 and -7) in the transplant population, as well as their pathogenic role in the post-transplantation period. These studies have been made jointly with I investigators specialized in Microbiology and Immunology, and with the different Transplantation Units (Institutes of Digestive, Renal and Thoracic Diseases).

rebound effect, which could be avoided partially or totally (functional recovery).

- The **mechanism by which the virus is able to escape the cytotoxic immune response** subject to study subject to study, and could correspond to the selection of quasispecies different from the reservoirs(immunological resistance). For this reason we have started a research line aimed at developing techniques for stimulating the immune system, with a view to associating them with antiretroviral therapy. Cyclic interruption of them treatment and therapeutic vaccines can induce recovery of the specific immune response to HIV antigens, associated with a spontaneous decrease in viral load, which is correlated to the degree of proliferative and specific cytotoxic response against HIV-1 in a small percentage of patients.
- We have also developed an **immunotherapeutic technique** based on the dministration of autologous dendritic cells stimulated ex vivo with the virus of the patient. The first three Phase I clinical trials have already been finished and published. We are also developing different immunogens which may be potential candidates for **therapeutic or preventive vaccines**.

2. In the general infections field:

- Clinical and experimental endocarditis, including endocarditis in illegal drug abusers (Dr. J.M. Miró).
- Infections in transplant recipients. Microbiological diagnosis and prognostic markers (Dr. A. Moreno).
- Predictive factors and markers of treatment response in nosocomial infections (Dr. A. Soriano).
- Response to treatment, resistance and transmission of tuberculosis.
- Prognostic factors of communityacquired and nosocomial respiratory infections in both immunocompetent and immune depressed individuals.
- The genetic fundaments of host susceptibility and the biochemical, molecular and replicative capacity bases of the resistant strains.

For further information:
www.idibaps.org/aidsresearch

RESEARCH GROUP
AIDS AND HIV INFECTION

Group Leader:
Josep Maria Gatell (Hospital Clínic)

This group studies the clinical, diagnostic, therapeutic and preventive aspects of HIV infection. The scientific contribution of this line of research is very competitive and is internationally renowned. This group of investigators focuses on exploration of the potential for eradicating HIV infection and on reconstruction of the immune system, including the development of preventive and therapeutic vaccines. Since its start in 2002, Dr. Gatell has coordinated the Spanish network of research groups in AIDS (RIS), funded by the FIS, and since 2007 has coordinated the HIVACAT project on research therapeutic and preventive vaccines against HIV infection.

EMERGENT GROUP
NOSOCOMIAL INFECTION STUDY GROUP

Group Leader:
Alex Soriano (Hospital Clínic)

This group studies the clinical, diagnostic, therapeutic and preventive aspects of nosocomial (in-hospital) infections. The scientific contribution is particularly notorious in the treatment and management of bacteremia, infections in Intensive Care Units, and infections related to orthopedic implants. Its components are members of the REIPI (Spanish Research Network in Infectious Disease), and participate actively in multicenter projects financed by the FIS.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	207.37	47	24	7
2011	359.35	91	37	19
2012	294.46	66	39	14

ORIGINALS
I.F.: 294.46

1 Fuster D.; Sola O.; Soriano A.; Monegal A.; Setoain X.; Tomas X.; Garcia S.; Mensa J.; Rubello D.; Pons F. **A Prospective Study Comparing Whole-Body FDG PET/CT to Combined Planar Bone Scan With Ga-67 SPECT/CT in the Diagnosis of Spondylodiskitis.** CLINICAL NUCLEAR MEDICINE. 31:827-832. **I.F.: 3.67.**

2 Diaz-Brito V.; Leon A.; Knobel H.; Peraire J.; Domingo P.; Clotet B.; Dalmau D.; Cruceta A.; Arnaiz J.A.; Gatell J.M.; Garcia F. **Post-exposure prophylaxis for HIV infection: a clinical trial comparing lopinavir/ritonavir versus atazanavir each with zidovudine/lamivudine.** ANTIVIRAL THERAPY. 17 (2): 337-346. **I.F.: 3.16.**

3 Llupia A.; Vilella A.; Costas L.; Diez C.; Torres F.; Yaguie J.; Masso M.; Munoz A.; Mensa J. **Can the response to 23-valent pneumococcal vaccine in splenectomised patients be predicted?.** VACCINE. 30 (13): 2382-2386 MAR 16. **I.F.: 3.77.**

4 Cilloniz C.; Ewig S.; Polverino E.; Marcos M.A; Prina E.; Sellares J.; Ferrer M.; Ortega M.; Gabarrus A.; Mensa J.; Torres A. **Community-acquired pneumonia in outpatients: aetiology and outcomes.** EUROPEAN RESPIRATORY JOURNAL. 40:931-938. **I.F.: 5.89.**

5 Cilloniz C.; Ewig S.; Menendez R.; Ferrer M.; Polverino E.; Reyes S.; Gabarrus A.; Marcos M.A.; Cordoba J.; Mensa J.; Torres A. **Bacterial co-infection with H1N1 infection in patients admitted with community acquired pneumonia..** JOURNAL OF INFECTION. 65:223-230. **I.F.: 4.13.**

6 Curran A.; Martinez E.; Saumoy M.; Del Rio L.; Crespo M.; Larrousse M.; Podzamczer D.; Burgos J.; Lonca M.; Domingo P.; Gatell J.M.; Ribera E. **Body composition changes after switching from protease inhibitors to raltegravir: SPIRAL-LIP substudy.** AIDS. 26 (4): 475-481. **I.F.: 6.24.**

7 Planas A.M.; Gomez-Choco M.; Urra X.; Gorina R.; Caballero M.; Chamorro A. **Brain-Derived Antigens in Lymphoid Tissue of Patients with Acute Stroke.** JOURNAL OF IMMUNOLOGY. 188 (5): 2156-2163. **I.F.: 5.79.**

8 Athan E.; Chu V.H.; Tattevin P.; Selton-Suty C.; Jones P.; Naber C.; Miro J.M.; Ninot S.; Fernandez-Hidalgo N.; Durante-Mangoni E.; Spelman D.; Hoen B.; Lejko-Zupanc T.; Cecchi E.; Thuny F.; Hannan M.M.; Pappas P.; Henry M.; Fowler V.G.; Crowley A.L.; Wang A. **Clinical Characteristics and Outcome of Infective Endocarditis Involving Implantable Cardiac Devices.** JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 307 (16): 1727-1735. **I.F.: 30.03.**

9 Greenspon A.J.; Prutkin J.M.; Sohail M.R.; Vikram H.R.; Baddour L.M.; Danik S.B.; Peacock J.; Falces C.; Miro J.M.; Blank E.; Naber C.; Carrillo R.G.; Tseng C.H.; Uslan D.Z. **Timing of the Most Recent Device Procedure Influences the Clinical Outcome of Lead-Associated Endocarditis Results of the MEDIC (Multicenter Electrophysiologic Device Infection Cohort).** JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY. 59 (7): 681-687. **I.F.: 14.16.**

10 Del Amo J.; Moreno S.; Bucher H.C.; Furrer H.; Logan R.; Sterne J.; Perez-Hoyos S.; Jarrin I.; Phillips A.; Lodi S.; Van Sighem A.; De Wolf F.; Sabin C.; Bansi L.; Justice A.; Goulet J.; Miro J.M.; Ferrer E.; Meyer L.; Seng R.; Toulomi G.; Gargalianos P.; Costagliola D.; Abgrall S.; Hernan M.A. **Impact of Antiretroviral Therapy on Tuberculosis Incidence Among HIV-Positive Patients in High-Income Countries.** CLINICAL INFECTIOUS DISEASES. 54 (9): 1364-1372. **I.F.: 9.15.**

11 Berenguer J.; Rodriguez E.; Miralles P.; Von Wichmann M.A.; Lopez-Aldeguer J.; Mallolas J.; Galindo M.J.; Van Den Eynde E.; Tellez M.J.; Quereda C.; Jou A.; Sanz J.; Barros C.; Santos I.; Pulido F.; Guardiola J.M.; Ortega E.; Rubio R.; Jusdado J.J.; Montes M.L.; Gaspar G.; Esteban H.; Bellon J.M.; Gonzalez-Garcia J. **Sustained Virological Response to Interferon Plus Ribavirin Reduces Non-Liver-Related Mortality in Patients Coinfected With HIV and Hepatitis C Virus.** CLINICAL INFECTIOUS DISEASES. 55:728-736. **I.F.: 9.15.**

12 Climent N.; Munier S.; Pique N.; Garcia F.; Pavot V.; Leon A.; Primard C.; Miralles I.; Rovira C.; Casanova V.; McCormick P.; Gatell J.M.; Verrier B.; Gallart T. **Loading dendritic cells from HIV-1 infected patients with PLA-p24 nanoparticles or MVA expressing HIV genes induces HIV-1-specific T cell responses.** RETROVIROLOGY. 9. **I.F.: 6.47.**

13 Ellefsen-Lavoie K.; Rockstroh J.; Pollard R.; Pantaleo G.; Podzamczer D.; Asmuth D.; Van Lunzen J.; Arasteh K.; Schuemann D.; Peters B.; Clotet B.; Hardy D.; Lazzarin A.; Gatell J.M.; Sommerfelt M.A.; Baksaas I.; Wendel-Hansen V.; Sorensen B. **Quality of T-cell responses versus reduction in viral load: results from an exploratory**

phase II clinical study of Vacc-4x, a therapeutic HIV vaccine. RETROVIROLOGY. 9. **I.F.: 6.47.**

14 Gastaca M.; Aguero F.; Rimola A.; Montejo M.; Miralles P.; Lozano R.; Castells L.; Abradelo M.; De la Mata M.; San Juan Rodriguez F.; Cordero E.; Del Campo S.; Manzardo C.; De Urbina J.O.; Perez I.; De la Rosa G.; Miro J.M. **Liver Retransplantation in HIV-Infected Patients: A Prospective Cohort Study.** AMERICAN JOURNAL OF TRANSPLANTATION. 12:2465-2476. **I.F.: 6.39.**

15 Miro J.M.; Montejo M.; Castells L.; Rafecas A.; Moreno S.; Agueero F.; Abradelo M.; Miralles P.; Torre-Cisneros J.; Pedreira J.D.; Cordero E.; De la Rosa G.; Moyano B.; Moreno A.; Perez I.; Rimola A. **Outcome of HCV/HIV-Coinfected Liver Transplant Recipients: A Prospective and Multicenter Cohort Study.** AMERICAN JOURNAL OF TRANSPLANTATION. 12 (7): 1866-1876. **I.F.: 6.39.**

16 Martinez E.; D'Albuquerque P.M.; Llibre J.M.; Gutierrez F.; Podzamczer D.; Antela A.; Berenguer J.; Domingo P.; Moreno X.; Perez I.; Pich J.; Gatell J.M. **Changes in cardiovascular biomarkers in HIV-infected patients switching from ritonavir-boosted protease inhibitors to raltegravir.** AIDS. 26:2315-2326. **I.F.: 6.24.**

17 Kowalska J.D.; Reekie J.; Mocroft A.; Reiss P.; Ledergerber B.; Gatell J.M.; Monforte A.D.; Phillips A.; Lundgren J.D.; Kirk O. **Long-term exposure to combination antiretroviral therapy and risk of death from specific causes: no evidence for any previously unidentified increased risk due to antiretroviral therapy.** AIDS. 26 (3): 315-323. **I.F.: 6.24.**

18 Gallastegui E.; Marshall B.; Vidal D.; Sanchez-Duffhues G.; Collado J.A.; Alvarez-Fernandez C.; Luque N.; Terme J.M.; Gatell J.M.; Sanchez-Palomino S.; Munoz E.; Mestres J.; Verdin E.; Jordan A. **Combination of Biological Screening in a Cellular Model of Viral Latency and Virtual Screening Identifies Novel Compounds That Reactivate HIV-1.** JOURNAL OF VIROLOGY. 86 (7): 3795-3808. **I.F.: 5.40.**

19 Ortega M.; Marco F.; Soriano A.; Almela M.; Martinez J.A.; Lopez J.; Pitart C.; Mensa J. **Epidemiology and prognostic determinants of bacteraemic biliary tract infection.** JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY. 67 (6): 1508-1513. **I.F.: 5.07.**

20 Miro J.M.; Entenza J.M.; Del Rio A.; Velasco M.; Castaneda X.; Garcia de la Maria C.; Giddey M.; Armero Y.; Pericas J.M.; Cervera C.; Mestres C.A.; Almela M.; Falces C.; Marco F.; Moreillon P.; Moreno A. **High-Dose Daptomycin plus Fosfomycin Is Safe and Effective in Treating Methicillin-Susceptible and Methicillin-Resistant Staphylococcus aureus Endocarditis.** ANTIMICROBIAL AGENTS AND CHEMOTHERAPY. 56:4511-4515. **I.F.: 4.84.**

21 Morata L.; Cobos-Trigueros N.; Martinez J.A.; Soriano A.; Almela M.; Marco F.; Sterzik H.; Nunez R.; Hernandez C.; Mensa J. **Influence of Multidrug Resistance and Appropriate Empirical Therapy on the 30-Day Mortality Rate of Pseudomonas aeruginosa Bacteremia.** ANTIMICROBIAL AGENTS AND CHEMOTHERAPY. 56:4833-4837. **I.F.: 4.84.**

22 Cilloniz C.; Ewig S.; Polverino E.; Munoz-Almagro C.; Marco F.; Gabarrus A.; Menendez R.; Mensa J.; Torres A. **Pulmonary complications of pneumococcal community-acquired pneumonia: incidence, predictors, and outcomes.** CLINICAL MICROBIOLOGY AND INFECTION. 18:1134-1142. **I.F.: 4.54.**

23 Perez-Romero P.; Aydillo T.A.; Perez-Ordonez A.; Munoz P.; Moreno A.; Lopez-Medrano F.; Bodro M.; Montejo M.; Gavalda J.; Carmen Farinas M.; Pachon J.; Cordero E. **Reduced incidence of pneumonia in influenza-vaccinated solid organ transplant recipients with influenza disease.** CLINICAL MICROBIOLOGY AND INFECTION. 18:E533-E540. **I.F.: 4.54.**

24 Cordero E.; Perez-Romero P.; Moreno A.; Len O.; Montejo M.; Vidal E.; Martin-Davila P.; Farinas M.C.; Fernandez-Sabe N.; Giannella M.; Pachon J. **Pandemic influenza A(H1N1) virus infection in solid organ transplant recipients: impact of viral and non-viral co-infection.** CLINICAL MICROBIOLOGY AND INFECTION. 18 (1): 67-73. **I.F.: 4.54.**

25 Pineda J.A.; Neukam K.; Mallolas J.; Lopez-Cortes L.F.; Carton J.A.; Domingo P.; Moreno S.; Iribarren J.A.; Clotet B.; Crespo M.; De los Santos I.; Ortega E.; Knobel H.; Jimenez-Exposito M.J.; Macias J. **Hepatic safety of efavirenz in HIV/hepatitis C virus-coinfected patients with advanced liver fibrosis.** JOURNAL OF INFECTION. 64 (2): 204-211. **I.F.: 4.13.**

26 Casanova V.; Naval-Macabuhay I.; Massanella M.; Rodriguez-Garcia M.; Blanco J.; Gatell J.M.; Garcia F.; Gallart T.; Lluis C.; Mallol J.; Franco R.; Climent N.; McCormick P.J. **Adenosine Deaminase Enhances the Immunogenicity of Human Dendritic Cells from Healthy and HIV-Infected Individuals.** PLOS ONE. 7(12):e51287. **I.F.: 4.09.**

27 Ferreyra C.; Yun Oliver.; Eisenberg N.; Alonso E.; Khamadi A.S.; Mwau M.; Kihara Mugendi M.; Alvarez A.; Velilla E.; Flevaud L.; Arnedo M.; Dalmau D.; Roddy P.; Bernasconi A.; Palma P.P. **Evaluation of Clinical and Immunological Markers for Predicting Virological Failure in a HIV/AIDS Treatment Cohort in Busia, Kenya.** PLOS ONE. 7(11):e49834. **I.F.: 4.09.**

28 Alvarez-Fernandez C.; Crespo Guardo A.; Garcia-Perez J.; Garcia F.; Blanco J.; Escriba-Garcia L.; Gatell J.M.; Alcami J.; Plana M.; Sanchez-Palomino S. **Generation and Characterization of a Defective HIV-1 Virus as an Immunogen for a Therapeutic Vaccine.** PLOS ONE. 7(11):e48848. **I.F.: 4.09.**

29 Arnedo M.; Alonso E.; Eisenberg N.; Ibanez L.; Ferreyra C.; Jaen A.; Flevaud L.; Khamadi S.; Roddy P.; Gatell J.M.; Dalmau D. **Monitoring HIV Viral Load in Resource Limited Settings: Still a Matter of Debate?.** PLOS ONE. 7(12):e47391. **I.F.: 4.09.**

30 Vidal F.; Lopez-Dupla M.; Laguno M.; Veloso S.; Mallolas J.; Murillas J.; Cifuentes C.; Gallart Ll.; Auguet T.; Samperiz G.; Payeras A.; Hernandez P.; Arnedo M.; Gatell J.M.; Richart C. **Pharmacogenetics of Efficacy and Safety of HCV Treatment in HCV-HIV Coinfected Patients: Significant Associations with IL28B and SOCS3 Gene Variants.** PLOS ONE. 7(11):e47725. **I.F.: 4.09.**

31 Mothe B.; Llano A.; Ibarrondo J.; Zamarreno J.; Schiaulini M.; Miranda C.; Ruiz-Riol M.; Berger C.T.; Herrero M.J.; Palou E.; Plana M.; Rolland M.; Khatri A.; Heckerman D.; Pereyra F.; Walker B.D.; Weiner D.; Paredes R.; Clotet B.; Felber B.K.; Pavlakis G.N.; Mullins J.I.; Brander C. **CTL Responses of High Functional Avidity and Broad Variant Cross-Reactivity Are Associated with HIV Control.** PLOS ONE. 7(1):e29717. **I.F.: 4.09.**

32 Beretta L.; Rueda B.; Marchini M.; Santaniello A.; Simeon C.P.; Fonollosa V.; Caronni M.; Rios-Fernandez R.; Carreira P.; Rodriguez-Rodriguez L.; Moreno A.; Lopez-Nevot M.A.; Escalera A.; Gonzalez-Escribano M.F.; Martin J.; Scorza R. **Analysis of Class II human leucocyte antigens in Italian and Spanish systemic sclerosis.** RHEUMATOLOGY. 51 (1): 52-59. **I.F.: 4.06.**

33 Saumoy M.; Sanchez-Quesada J.L.; Martinez E.; Llibre J.M.; Ribera E.; Knobel H.; Gatell J.M.; Clotet B.; Curran A.; Curto J.; Maso M.; Ordonez-Llanos J.; Podzamczer D. **LDL subclasses and lipoprotein-phospholipase A2 activity in suppressed HIV-infected patients switching to raltegravir: Spiral substudy.** ATHEROSCLEROSIS. 225:200-207. **I.F.: 3.79.**

34 Rey-Jurado E.; Tudo G.; Martinez J.A.; Gonzalez-Martin J. **Synergistic effect of two combinations of antituberculous drugs against Mycobacterium tuberculosis.** TUBERCULOSIS. 92 (3): 260-263. **I.F.: 3.47.**

35 Aguado J.M.; Varo E.; Usetti P.; Pozo J.C.; Moreno A.; Catalan M.; Len O.; Blanes M.; Sole A.; Munoz P.; Montejo M. **Safety of anidulafungin in solid organ transplant recipients.** LIVER TRANSPLANTATION. 18 (6): 680-685. **I.F.: 3.39.**

36 Guardo A.C.; Garcia F.; Maleno M.J.; Papagno L.; Bargallo M.E.; Climent N.; Autran B.; Gatell J.M.; Gallart T.; Plana M. **Cellular immune responses after a dendritic cells (DC)-based therapeutic vaccine in cART treated chronic hiv-infected patients.** IMMUNOLOGY. 137:514-514. **I.F.: 3.32.**

37 Llibre J.M.; Buzon M.J.; Massanella M.; Esteve A.; Dahl V.; Puertas M.C.; Domingo P.; Gatell J.M.; Larrouse M.; Gutierrez M.; Palmer S.; Stevenson M.; Blanco J.; Martinez-Picado J.; Clotet B. **Treatment intensification with raltegravir in subjects with sustained HIV-1 viraemia suppression: a randomized 48-week study.** ANTIVIRAL THERAPY. 17 (2): 355-364. **I.F.: 3.16.**

38 Podlekareva D.N.; Reekie J.; Mocroft A.; Losso M.; Rakhmanova A.G.; Bakowska E.; Karpov I.A.; Lazarus J.V.; Gatell J.M.; Lundgren J.D.; Kirk O. **Benchmarking HIV health care: from individual patient care to health care evaluation. An example from the EuroSIDA study.** BMC INFECTIOUS DISEASES. 12:229. **I.F.: 3.12.**

39 Freitas P.; Carvalho D.; Santos A.C.; Mesquita J.; Matos M.J.; Madureira A.J.; Martinez E; Sarmento A.; Medina J.L. **Lipodystrophy defined by Fat Mass Ratio in HIV-infected patients is associated with a high prevalence of glucose disturbances and insulin resistance.** BMC INFECTIOUS DISEASES. 12:180. **I.F.: 3.12.**

40 Tornero E.; Garcia S.; Larrousse M.; Gallart X.; Bori G.; Riba J.; Rios J.; Gatell J.M.; Martinez E. **Total hip arthroplasty in HIV-infected patients: a retrospective, controlled study.** HIV MEDICINE. 13:623-629. **I.F.: 3.01.**

41 Pol S.; Cooper C.; Fainboim H.; Slim J.; Rivero A.; Laguno M.; Thompson S.; Wahl J.; Greaves W.; Sulkowski M. **Boceprevir plus peginterferon/ribavirin for the treatment of HCV/HIV Co-infected patients: Follow up week 12 (SVR 12) interim results.** JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY. 27:15-15. **I.F.: 2.86.**

42 Cordero E.; Aydillo T.; Farinas M.C.; Pano-Pardo J.R.; Pachon J.; Viasus D.; Riera M.; Lopez-Medrano F.; Payeras A.; Moreno A; Rodriguez-Bano J.; Oteo J.A.; Martinez-Montauti J.; Torre-Cisneros J.; Segura F.; Carratala J. **Immunosuppressed patients with pandemic influenza A 2009 (H1N1)**

virus infection. EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES. 31 (4): 547-556. **I.F.: 2.86.**

43 Romero A.; Gonzalez V.; Esteve A.; Martro E.; Matas L.; Tural C.; Pumarola T.; Casanova A.; Ferrer E.; Caballero E.; Ribera E.; Margall N.; Domingo P.; Farre J.; Puig T.; Sauca M.G.; Barrufet P.; Amengual M.J.; Navarro G.; Navarro M.; Vilaro J.; Ortin X.; Orti A.; Pujol F.; Prat J.M.; Massabeu A.; Simo J.M.; Villaverde C.A.; Benitez M.A.; Garcia I.; Diaz O.; Becerra J.; Ros R.; Sala R.; Rodrigo I.; Miro J.M.; Casabona J. **Identification of recent HIV-1 infection among newly diagnosed cases in Catalonia, Spain (2006-08).** EUROPEAN JOURNAL OF PUBLIC HEALTH. 22:802-808. **I.F.: 2.73.**

44 Vallecillo G.; Domingo P.; Mallolas J.; Blanch J.; Ferrer E.; Cervantes M.; Pedrol E.; Knobel H.; Llibre J.M. **Evaluation of the Safety and Effectiveness of Nevirapine Plus Coformulated Tenofovir/Emtricitabine as First-Line Therapy in Routine Clinical Practice.** AIDS RESEARCH AND HUMAN RETROVIRUSES. 28 (2): 165-170. **I.F.: 2.25.**

45 Pena J.; Frias M.; Castro-Orgaz L.; Gonzalez R.; Garcia F.; Gallart T.; Gatell J.M.; Plana M. **Effects on Innate Immunity of a Therapeutic Dendritic Cell-Based Vaccine for HIV-1 Infection.** VIRAL IMMUNOLOGY. 25 (1): 37-44. **I.F.: 1.97.**

46 Font-Vizcarra Ll.; Garcia S.; Bori G.; Martinez-Pastor J.C.; Zumbado A.; Morata L.; Mensa J.; Soriano A. **Long-term results of acute prosthetic joint infection treated with debridement and prosthesis retention: a case-control study.** INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS. 35:908-912. **I.F.: 1.86.**

47 Tornero E.; Garcia-Oltra E.; Garcia-Ramiro S.; Martinez-Pastor J.C.; Bosch J.; Climent C.; Morata L.; Camacho P.; Mensa J.; Soriano A. **Prosthetic joint infections due to Staphylococcus aureus and coagulase-negative staphylococci.** INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS. 35:884-892. **I.F.: 1.86.**

48 Freitas P.; Carvalho D.; Santos A.C.; Madureira A.J.; Xerinda S.; Martinez E.; Pereira J.; Sarmento A.; Medina J.L. **Central/Peripheral Fat Mass Ratio Is Associated With Increased Risk of Hypertension in HIV-Infected Patients.** JOURNAL OF CLINICAL HYPERTENSION. 14:593-600. **I.F.: 1.83.**

49 Podzamczer D.; Tiraboschi J.M.; Mallolas J.; Curto J.; Cardenes M.A.; Casas E.; Castro A.; Echevarria S.; Leal M.; Lopez Bernaldo de Quiros J.C.; Moreno S.; Puig T.; Ribera E.; Villalonga C.; Gomez-Sirvent J.L.; Garcia-Henarejos J.A.; Lopez-Aldeguer J.; Barrufet P.; Force L.; Santos I.; Sanz J. **Long-Term Benefits of Nevirapine-Containing Regimens: Multicenter Study with 506 Patients, Followed-Up a Median of 9 Years.** CURRENT HIV RESEARCH. 10:513-520. **I.F.: 1.74.**

50 Podzamczer D.; Martinez E.; Domingo P.; Ferrer E.; Viciana P.; Curto J.; Perez-Elias M.J.; Ocampo A.; Santos I.; Knobel H.; Estrada V.; Negredo E.; Segura F.; Portilla J.; Ribera E.; Galindo J.; Antela A.; Carmena J.; Castano M. **Switching to Raltegravir in Virologically Suppressed in HIV-1-Infected Patients: A Retrospective, Multicenter, Descriptive Study.** CURRENT HIV RESEARCH. 10:673-678. **I.F.: 1.74.**

51 Vrouenraets S.M.E.; Wit FWNM.; Garcia E.F.; Huber M.; Brinkman K.; Moyle G.; Domingo P.; Tarr P.E.; Podzamczer D.; Ristola M.; Gatell J.M.; Livrozet J.M.; Furrer H.; Reiss P. **Longer Prior Exposure to Zidovudine/Lamivudine-Containing Combination Antiretroviral Therapy, Age, and Male Gender Are Each Associated With Reduced Subcutaneous Adipose Tissue.** HIV CLINICAL TRIALS. 13 (2): 103-110. **I.F.: 1.64.**

52 Blasco A.J.; Lazaro P.; Gatell J.M. **Costs and cost-efficacy analysis of the preferred treatments by GESIDA/National plan for AIDS for the initial antiretroviral therapy in 2012. Author's reply.** ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 30:511-512. **I.F.: 1.49.**

53 Blasco A.J.; Arribas J.R.; Boix V.; Clotet B.; Domingo P.; Gonzalez-Garcia J.; Knobel H.; Lopez J.C.; Llibre J.M.; Lozano F.; Miro J.M.; Podzamczer D.; Santamaria J.M.; Tuset M.; Zamora L.; Lazaro P.; Gatell J.M. **Costs and cost-efficacy analysis of the preferred treatments by GESIDA/National plan for AIDS for the initial antiretroviral therapy in adult human Immunodeficiency virus (HIV) infected patients in 2012.** ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 30:283-293. **I.F.: 1.49.**

54 Berenguer J.; Domingo Pedrol, P.; Polo R.; Aguirrebengoa K.; Estrada V.; Gutierrez Rodero F.; Knobel H.; Llibre J.M.; Miralles C.; Miro J.M.; Rivero A.; Santos J.; Tuset M.; Antela A.; Asensi V.; Arribas J.R.; Blanco J.R.; Boix V.; Martinez E.; Garcia F.; Gatell J.M.; Mallolas J.; Moreno S.; Palacios R.; Perez Elias M.J.; Pineda J.A.; Vidal F.; Lopez Aldeguer J. **Executive summary. Consensus document of GESIDA and SPNS (Spanish Secretariat for the National Plan on AIDS) regarding combined antiretroviral treatment in adults infected by the human immunodeficiency virus (January 2012).** ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 30:315-324. **I.F.: 1.49.**

55 Mestre Roca G.; Berbel Bertolo C.; Tortajada Lopez P.; Gallemi Samaranch G.; Aguilar Ramirez M.C.; Cayla Buqueras J.; Rodriguez-Bano J.; Martinez J.A. **Assessing the influence of risk factors on rates and dynamics of peripheral vein phlebitis: An observational cohort study.** MEDICINA CLINICA. 139(5):185-91. **I.F.: 1.38.**

56 Gocea A.; Martinez-Vidal B.; Panuschka C.; Epprecht P.; Caballero M.; Bernal-Sprekelsen M. **Preserving bone conduction in patients with labyrinthine fistula.** EUROPEAN ARCHIVES OF OTO-RHINO-LARYNGOLOGY. 269 (4): 1085-1090. **I.F.: 1.29.**

57 Jaen N.; Martinez-Pastor J.C.; Munoz-Mahamud E.; Garcia-Ramiro S.; Bosch J.; Mensa J.; Soriano A. **Long-term outcome of acute prosthetic joint infections due to gram-negative bacilli treated with retention of prosthesis.** REVISTA ESPANOLA DE QUIMIOTERAPIA. 25:194-198. **I.F.: 0.81.**

58 Garrido C.; Villacian J.; Zahonero N.; Pattery T.; Garcia F.; Gutierrez F.; Caballero E.; Van Houtte M.; Soriano V.; De Mendoza C. **Broad Phenotypic Cross-Resistance to Elvitegravir in HIV-Infected Patients Failing on Raltegravir-Containing Regimens.** ANTIMICROBIAL AGENTS AND CHEMOTHERAPY. 56 (6): 2873-2878. **I.F.: 4.84.**

59 Garrido C.; De Mendoza C.; Alvarez E.; Garcia F.; Morello J.; Garcia S.; Ribera E.; Rodriguez-Novoa S.; Gutierrez F.; Soriano V. **Plasma Raltegravir Exposure Influences the Antiviral Activity and Selection of Resistance Mutations.** AIDS RESEARCH AND HUMAN RETROVIRUSES. 28 (2): 156-164. **I.F.: 2.25.**

60 Vilella A.; Serrano B.; Marcos M.A.; Serradesanferm A.; Mensa J.; Hayes E.; Anton A.; Rios J.; Pumarola T.; Trilla A. **Pandemic Influenza A(H1N1) Outbreak Among a Group of Medical Students Who Traveled to the Dominican Republic.** JOURNAL OF TRAVEL MEDICINE. 19 (1): 9-14. **I.F.: 1.75.**

61 Mena G.; Llupia A.; Garcia-Basteiro A.L.; Diez C.; Leon A.; Garcia F.; Bayas J.M. **Assessing the immunological response to hepatitis B vaccination in HIV-infected patients in clinical practice.** VACCINE. 30 (24): 3703-3709. **I.F.: 3.77.**

62 Fernandez J.; Acevedo J.; Castro M.; Garcia O.; De Lope C.; Roca D.; Pavesi M.; Sola E.; Moreira L.; Silva A.; Seva-Pereira T.; Corradi F.; Mensa J.; Gines P.; Arroyo V. **Prevalence and risk factors of infections by multiresistant bacteria in cirrhosis: A prospective study.** HEPATOLOGY. 55 (5): 1551-1561. **I.F.: 11.66.**

63 Burgos R.; Sarto B.; Elio I.; Planas M.; Forga M.; Canton A.; Trallero R.; Munoz M.J.; Perez D.; Bonada A.; Salo E.;Lecha M.; Enrich G.; Salas-Salvado J. **Prevalence of malnutrition and its etiological factors in hospitals.** NUTRICION HOSPITALARIA. 27 (2): 469-476. **I.F.: 1.12.**

64 Laguno M.; Martinez-Rebollar M.; Perez I.; Costa J.; Larrousse M.; Calvo M.; Lonca M.; Munoz A.; Gonzalez-Cordon A.; Blanco J.L.; Martinez E.; Gatell J.M.; Mallolas J. **Low Rate of Sustained Virological Response in an Outbreak of Acute Hepatitis C in HIV-Infected Patients.** AIDS RESEARCH AND HUMAN RETROVIRUSES. 28(10):1294-300. **I.F.: 2.25.**

65 Liapikou A.; Polverino E.; Ewig S.; Cilloniz C.; Marcos M.A.; Mensa J.; Bello S.; Martin-Loeches I.; Menendez R.; Torres A. **Severity and outcomes of hospitalised community-acquired pneumonia in COPD patients.** EUROPEAN RESPIRATORY JOURNAL. 39 (4): 855-861 APR 2012. **I.F.: 5.89.**

66 Moreno A.; Cervera C.; Fortun J.; Blanes M.; Montejo E.; Abradelo M.; Len O.; Rafecas A.; Martin-Davila P.; Torre-Cisneros J.; Salcedo M.; Cordero E.; Lozano R.; Perez I.; Rimola A.; Miro J.M. **Epidemiology and outcome of infections in human immunodeficiency virus/hepatitis c virus-coinfected liver transplant recipients: A FIPSE/GESIDA Prospective Cohort Study.** LIVER TRANSPLANTATION. 18 (1): 70-82. **I.F.: 3.39.**

REVIEWS
I.F.: 6.70

1 Benito N.; Moreno A.; Miro J.M.; Torres A. **Pulmonary infections in HIV-infected patients: an update in the 21st century.** EUROPEAN RESPIRATORY JOURNAL. 39 (3): 730-745. **I.F.: 5.89.**

2 Vazquez L.; Carreras E.; Serrano D.; Jarque I.; Mensa J.; Barberan J. **Antifungal prophylaxis in the haematological patient: a practical approach.** REVISTA ESPANOLA DE QUIMIOTERAPIA. 25(4):299-304. **I.F.: 0.81.**

EDITORIALS
I.F.: 7.60

1 Falces C.; Miro J.M. **Prevention of Infective Endocarditis: Between Progress in Scientific Knowledge and the Lack of Randomized Trials.** REVISTA ESPANOLA DE CARDIOLOGIA. 65:1072-1074. **I.F.: 2.53.**

2 Garcia F. **'Functional cure' of HIV infection: the role of immunotherapy.** IMMUNOTHERAPY. 4 (3): 245-248. **I.F.: 1.85.**

3 Calvo M.; Martinez E. **Cardiovascular risk and human immunodeficiency virus infection.** ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 30:515-516. **I.F.: 1.49.**

4 Hoyo I.; Martinez-Pastor J.; Garcia-Ramiro S.; Climent C.; Brunet M.; Cuesta M.; Mensa J.; Soriano A. **Decreased serum linezolid concentrations in two patients receiving linezolid and rifampicin due to bone infections.** SCANDINAVIAN JOURNAL OF INFECTIOUS DISEASES. 44 (7): 548-550. **I.F.: 1.72.**

GRANTS FOR RESEARCH IN PROGRESS

Garcia F. **Design of multifunctional nanoparticles targeting TLR or Nod receptors for dendritic cell immune therapy.** Sponsored by: European Commission. ERA-NET_NANOMED10_01. Duration: 01/01/2011-31/12/2013.

Arnedo M. **Factores genéticos implicados en el desarrollo de dislipemia en pacientes infectados por VIH-1 que inician tratamiento antiretroviral de gran actividad.** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) 36715/08. Duration: 30/10/2008-01/03/2012.

Yuste E. **Optimización como inmunógeno de la proteína de la envuelta del virus de la inmunodeficiencia humana tipo 1.** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) 36780/08. Duration: 30/10/2008-31/08/2012.

Yuste E. **Diseño, síntesis y estudio anti-HIV-1 de dominios peptídicos del GB virus C.** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) 36-0735-09 Duration: 09/03/2010-08/03/2013.

Laguno M. **Hipertensión Portal Idiopática en el paciente infectado por el VIH. Prevalencia, curso clínico, identificación de métodos diagnósticos no invasivos y factores pronóstico.** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) 36-0963-10. Duration: 16/02/2011-15/02/2014.

Caballero M. **Desarrollo de un modelo experimental en cobaya de enfermedad de vías aéreas superiores por exposición al humo de tabaco. Estudio de los cambios anatomopatológicos y de los marcadores de inflamación.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI070434. Duration: 26/11/2007-30/06/2012.

Arnedo M. **Factores genéticos implicados en el desarrollo de dislipemia en pacientes infectados por VIH-1 que inician tratamiento antiretroviral de gran actividad.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0396. Duration: 01/01/2010-31/12/2012.

Yuste E. **Desarrollo de una vacuna frente al VIH: aislamiento y caracterización de nuevos anticuerpos neutralizantes de amplio espectro. Diseño de inmunógenos capaces de generar dichos anticuerpos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1459. Duration: 01/01/2010-31/12/2012.

Garcia F. **Desarrollo de una vacuna frente a VIH: Estudio de los cambios en la biología de células dendríticas humanas tras interacción con distintos inmunógenos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PS09/01297. Duration: 01/01/2010-31/12/2012.

Garcia F. **Design of multifunctional nanoparticles targeting TLR or Nod receptors for dendritic cell immune therapy.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/02984(NANO-MED). Duration: 01/01/2011-31/12/2013.

Martinez J.A. **Evaluación farmacocinética y farmacodinámica del tratamiento inicial con meropenem, ceftazidima, piperaciclina-tazobactam y colistina en pacientes críticos con sepsis.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00479. Duration: 01/01/2012-31/12/2014.

Miro J.M. **Estudio FIPSE de transplante hepático en pacientes infectados por el VIH en españa (2002-2011) estudio GESIDA 45-05.** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) TOH/VIH-09. Duration: 16/01/2009-15/01/2012.

Miro J.M. **Supervivencia de los pacientes con infección por el VIH en terapia renal sustitutiva o trasplante renal en España.** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) 24-0858-09. Duration: 04/01/2010-03/01/2012.

Miro J.M. **Tratamiento antiretroviral una vez al dia en pacientes con infecciones por el VIH-1 no tratados previamente y con cifras de linfocitos CD4+ inferiores a 100 céls/MM3. Estudio prospectivo aleatorizado, multicéntrico y abierto. Estudio advan z-3.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC07/90642. Duration: 29/10/2007-30/06/2012.

Miro J.M. **Estudio de la eficacia de la daptomicina asociada a otros antibióticos en el tratamiento de la endocarditis experimental por Staphylococcus aureus resistentes o no a mecilina (SARM/SASM) y S. epidermidis resistentes a meticilina (SERM) y a vancomicina (VR).** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01131. Duration: 01/01/2012-31/12/2014.

Miro J.M. **Trasplante hepático en pacientes coinfectados por el VIH y VHC: Historia natural de la recurrencia del VHC y factores pronosticos de supervivencia.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-150. Duration: 01/01/2012-31/12/2013.

Miro J.M. **A Phase III multi-center, randomized, open-label, comparative study to assess the efficacy of a treatment algorithm to reduce the use of vancomycin in patients with intravenous catheter-associated bloodstream infections (BSI) due to Staphylococci HCP/11/038.** Sponsored by: National Institutes of Health NIHAI2008025. Duration: 23/05/2011-30/06/2013.

Moreno A. **Infecciones en el Trasplante de órgano sólido (INFTOS).** Sponsored by: AGAUR 2009_SGR_1341. Duration: 15/09/2009-31/12/2013.

Moreno A. **Evaluar la eficacia y la seguridad de la cambinación de fosfomicina (F) e imipenem (I) para el tratamiento de la endocarditis (EI) sobre la válvula nativa o protésica por S.aureus resistente a meticilina (MRSA).** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC08/00190. Duration: 01/01/2009-30/06/2013.

Gatell J.M. **Grup de recerca VIH/sida. Hospital Clinic. Barcelona.** Sponsored by: AGAUR 2009_SGR_1159. Duration: 23/09/2009-31/12/2013.

Gatell J.M. **European Network of HIV/AIDS Cohort Studies to Coordinate at European and International level Clinical Research on HIV/AID.** Sponsored by: European Commission 260694. Duration: 01/01/2011-31/12/2015.

Gatell J.M. **New Generation of Anti-RetroVirals by targeting HIV-cellular cofactors interactions.** Sponsored by: European Commission 305137. Duration: 01/10/2012-30/09/2015.

Gatell J.M. **NoE - European AIDS Treatment Network Centre coordinador: Istituto Superiore de Sanità, Roma.** Sponsored by: European Commission LSHP-CT-2006-037570. Duration: 01/02/2007-31/07/2013.

Gatell J.M. **Evaluación del impacto de nuevos sistemas de información en el cuidado de pacientes VIH crónicos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/90897. Duration: 01/01/2010-31/12/2012.

Gatell J.M. **Red de SIDA.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0006/0000. Duration: 01/01/2007-31/12/2013.

Gatell J.M. **Premio Fundación Lilly de Investigación Clínica.** Sponsored by: Fundación Lilly 10/104. Duration: 01/05/2010-30/04/2012.

Gatell J.M. **La Nucleocapside du VIH-1: Structure, maturation et architecture.** Sponsored by: Agence Nationale de Recherche sur le Sida SF/CRM/Nº1458. Duration: 01/12/2011-30/11/2013.

Gatell J.M. **Simposio internacional sobre la NucleoCápside Retroviral.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-13586-E. Duration: 20/12/2011-19/12/2012.

DOCTORAL THESES

Moreno A. **Estudio de la neumonía adquirida en la comunidad (NAC) en pacientes con infección por el virus de la inmunodeficiencia humana (VIH) en la era del tratamiento antirretroviral de gran actividad desde un servicio de urgencias.** PhD student: Rafael Perelló Carbonell.

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Immune receptors of the innate and adaptive system

TEAM INVOLVED IN:

GROUP MEMBERS

TEAM LEADER
Francisco Lozano (Hospital Clínic/UB)
Tel.: 93 227 42 17
E-mail: flozano@clinic.cat

RESEARCHERS:
Ana Angulo (IDIBAPS)
Pablo Engel (UB)
Carles Serra (Hospital Clínic)
Ricardo Bastos (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Esther Carrasco Miguel (Fundació Clínic)
Mario Martínez Florensa (AGAUR)
Vanesa G. Martínez (Fundació Clínic)
Xavier Romero (IDIBAPS)
Esther Carreras Margalef (BioTrack)
Domènec Farré Marimon (Fundació Clínic)

PRE-DOCTORAL RESEARCHERS:
Lyzette Bonet (Fundació Clínic)
Rafael Fenutría (Fundació Clínic)
Elena Isern (AGAUR)
Cristina Miró (MEC/FPU)
Cristina Escoda (MEC/FPI)
Natalia Pérez Carmona (UB)
Jose de Salort (UB)
M. Carmen Diaz-Ramos (IDIBAPS)
Marta Consuegra (AGAUR)
Marc Orta (MICINN/FPI)
Ángela Zarama (IDIBAPS)
Inês Simoês (FCyT)
Marta Cuenca (IDIBAPS)

TECHNICIANS:
Adriana Lázaro (Fundació Clínic)
Noelia Armiger Borràs (IDIBAPS)

STRATEGIC OBJECTIVES

1. Genetic and molecular characterization of immune receptors from both the innate and adaptive system.
2. Functional characterization of the ligand-receptor interactions responsible for intercellular communication between components from the innate and adaptive immune system.
3. Molecular characterization of pathogen-host interactions.
4. Molecular characterization of the biology, pathogenesis and immunology of cytomegalovirus (CMV).

MAIN LINES OF RESEARCH

1. Study of the structure and function of the SLAM (*Signaling Lymphocytic Activation Molecule*) and SAP (*SLAM-Associated Protein*) leukocyte molecule families.
2. Study of the molecules that intervene in leukocyte adhesion and inflammation.
3. Immunogenetics of receptors and molecules implicated in the regulation of innate and adaptive immune responses.
4. Study of the role of the CD5 and CD6 receptors in lymphocyte activation and differentiation.
5. Molecular and functional characterization of nonlymphoid members of the superfamily of receptors with extracellular domains rich in cysteine (SRCR, *Scavenger Receptor Cysteine-Rich*) residues.
6. Characterization of CMV mechanisms of gene regulation and identification of functions encoded by this pathogen.
7. Study of CMV mediated modulation of immune response and immune evasion strategies.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	55.45	11	8	1
2011	92.77	16	11	0
2012	44.53	7	5	2

ORIGINALS
I.F.: 44.53

1 Carnero-Montoro E.; Bonet L.; Engelken J.; Bielig T.; Martínez-Florensa M.; Lozano F.; Bosch E. **Evolutionary and Functional Evidence for Positive Selection at the Human CD5 Immune Receptor Gene.** MOL BIOL EVOL. 29 (2): 811-823. **I.F.: 5.55.**

2 Sala-Valdés M.; Gordón-Alonso M.; Tejera E.; Ibáñez A.; Cabrero J.R.; Ursa A.; Mittelbrunn M.; Lozano F.; Sánchez-Madrid F.; Yáñez-Mó M. **Association of syntenin-1 with M-RIP polarizes Rac-1 activation during chemotaxis and immune interactions.** J CELL SCI. 125 (5): 1235-1246. **I.F.: 6.11.**

3 Ramírez J.; Fernández-Sueiro J.L.; López-Mejías R.; Montilla C.; Arias M.; Moll C.; Alsina M.; Sanmarti R.; Lozano F.; Cañete J.D. **FCGR2A/CD32A and FCGR3A/CD16A variants and EULAR response to tumor necrosis factor-α blockers inpsoriatic arthritis: a longitudinal study with 6 months of followup.** J RHEUMATOL. 39(5):1035-41. **I.F.: 3.69.**

4 Carmona F.; Chapron C.; Martínez-Zamora M.Á.; Santulli P.; Rabanal A.; Martínez-Florensa M.; Lozano F.; Balasch J. **Ovarian endometrioma but not deep infiltrating endometriosis is associated with increased serum levels of interleukin-8 and interleukin-6.** JOURNAL OF REPRODUCTIVE IMMUNOLOGY. 95:80-86. **I.F.: 2.97.**

5 Shikhagaie M.; Mercé-Maldonado E.; Isern E.; Muntasell A.; Albà M.M.; López-Botet M.; Hengel H., Angulo A. **The human cytomegalovirus-specific UL1 gene encodes a late-phase glycoprotein incorporated in the virionenvelope.** J VIROL. 86(8):4091-10. **I.F.: 5.40.**

6 Rodríguez-Martín S.; Kropp K.A.; Wilhelmi V.; Lisnic V.J.; Hsieh W.Y.; Blanc M.; Livingston A.; Busche A.; Tekotte H.; Messerle M.; Auer M.; Fraser I.; Jonjic S.; Angulo A.;Reddehase M.J.; Ghazal P. **Ablation of the regulatory IE1 protein of murine cytomegalovirus alters in vivo pro-inflammatory TNF-alpha production during acute infection.** PLOS PATHOG. 8(8):e1002901. **I.F.: 9.13.**

7 Liao G.; Detre C.; Berger S.B.; Engel P.; De Waal Malefyt R.; Herzog R.W.; Bhan A.K.; Terhorst C. **Glucocorticoid-induced tumor necrosis factor receptor family-related protein regulates CD4(+) T cell-mediated colitis in mice.** GASTROENTEROLOGY. 142(3):582-591. **I.F.: 11.67.**

REVIEWS
I.F.: 1.09

1 Engel P.; Angulo A.; **Viral immunomodulatory proteins: usurping host genes as a survival strategy.** ADV EXP MED BIOL. 738:256-76. **I.F.: 1.09.**

GRANTS FOR RESEARCH IN PROGRESS

Lozano F. **Papel modulador de receptroes linfocitarios tipo scavenger (CD5 y CD6) en la patofisiología de la infección por el virus de la inmunodeficiencia humana 1 (VIH-1).** Sponsored by: Fundación para la Investigación y Prevención del Sida en España (FIPSE) 36-0773-09. Duration: 04/01/2010-03/01/2013.

Lozano F. **Immunoreceptores del Sistema Inmunitario Innato y Adaptativo.** Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR), 2009/SGR/00252. Duration: 01/01/2009-31/12/2013.

Lozano F. **Red española de investigación en patología infecciosa (REIPI).** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0008/1013. Duration: 29/02/2008-31/12/2013.

Lozano F. **Implicaciones funcionales y terapéuticas del reconocimiento de ligandos exógenos y endógenos por parte de receptores linfocitarios tipo Scavenger.** Sponsored by: Ministerio de Economía y Competitividad SAF2010-19717. Duration: 01/01/2011-31/12/2013.

Angulo A. **Identificación y caracterización de genes del citomegalovirus con propiedades inmunomoduladores.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-25155. Duration: 01/01/2012-31/12/2014.

Engel P. **Estudio de las moléculas CD150/SLAM en la función efectora de los linfocitos B de "tipo innato".** Sponsored by: Ministerio de Economía y Competitividad, SAF2009-07071. Duration: 01/01/2010-31/12/2012.

Engel P. **SLAM Gene Family Controlled Pathways to SLE.** Sponsored by: National Institutes of Health, 2P01AI065687-06A1. Duration: 01/08/2012- 31/07/2017.

DOCTORAL THESES

Angulo A. **Análisis de la relevancia funcional de elementos reguladores del enhancer del promotor principal inmediatamente temprano del citomegalovirus humano en un modelo murino.** PhD student: Elena Isern Tarradas.

Lozano F. **Polimorfismos del receptor fc gamma en patología cutánea inmunomediada: papel en la patogenia del penfigoide ampolloso y en la respuesta a tratamiento biológico en la psoriasis.** PhD student: Antonio Guilabert Vidal.

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Musculoskeletal repair and plasticity

GROUP MEMBERS

TEAM LEADER
Joaquim Forés i Viñeta
(Hospital Clínic)
Tel.: 93 227 93 14
E-mail: jfores@clinic.cat

RESEARCHERS:
Jesús Benito (Hospital Clínic)
Andrés Combalía (Hospital Clínic)
Francisco Maculé (Hospital Clínic)
Montserrat Nuñez (Hospital Clínic)
Jaume Pomés (Hospital Clínic)
Josep M. Segur (Hospital Clínic)
Sebastián García (Hospital Clínic)
Sergi Sastre (Hospital Clínic)
Santiago Suso (Hospital Clínic)
Luis Mª Lozano (Hospital Clínic)

ADMINISTRATIVE STAFF:
Antònia Bayo (Hospital Clínic)

COLLABORATORS:
M.ª Teresa Anglada (Hospital Clínic)
Jordi Asunción (Hospital Clínic)
Misericordia Basora (Hospital Clínic)
Guillem Bori (Hospital Clínic)
Xavier Carné (Hospital Clínic)
Ana Carreño (Hospital Clínic)
Adela Faulí (Hospital Clínic)
Jenaro A. Fernández-Valencia (Hospital Clínic)
Joan Xavier Fontdevila (Hospital Clínic)
Salvador Fuster (Hospital Clínic)
Xavier Gallart (Hospital Clínic)
Eloy M. García Díez (Hospital Clínic)
Ruben García Elvira (Hospital Clínic)
Raquel García Tarriño (Hospital Clínic)
Anna López Gutiérrez (Hospital Clínic)
Felipe Orient (Hospital Clínic)
Lluis Peidro (Hospital Clínic)
Daniel Poggio (Hospital Clínic)
Dragos Popescu (Hospital Clínic)
Salvi Prat (Hospital Clínic)
Josep Riba (Hospital Clínic)
Moisés Rios (Hospital Clínic)
Xavier Sala (Hospital Clínic)
Isabel Sañudo (Hospital Clínic)
Xavier Tomás (Hospital Clínic)
Pere Torner (Hospital Clínic)
Antoni Trilla (Hospital Clínic)
Raquel Vilarrasa (Hospital Clínic)
Josep M. Serra (Hospital Clínic)
Alex Soriano (Hospital Clínic)

STRATEGIC OBJECTIVES

Our research group, which was incorporated to the IDIBAPS in 2007, aims to agglutinate and generate synergies among specialists in different disciplines that work in the field of the locomotor system. This is a field with a growing social and technological demand, but with scant incidence in the research setting of this institution. There are many aspects of new knowledge related to the musculoskeletal system: cellular, genic and pharmacological therapies; new materials and implants; robotics; top-level surgical and anesthetic technology; and sophisticated imaging techniques. The lack of clinical scientific evidence relating to much of the new knowledge, and the great volume of patients in our setting, with limited resources, represent an important source of work from which to derive intellectual benefit. Working with humbleness but "thinking big" seems to us to be the best strategy for reaching the objective of being a reference group in our setting.

MAIN LINES OF RESEARCH

1. Bone physiopathology, pathological variation with age, evaluation of fracture setting techniques and bone substitutes.
2. Cartilage, degeneration and repair through tissue engineering.
3. Evaluation and design of new prosthetic implants.
4. Minimally invasive surgery with new technology and instruments.
5. Infections of the locomotor apparatus, their prevention and treatment.
6. Acute postoperative pain and chronic musculoskeletal pain.
7. Functional re-adaptation, prevalence and evaluation of health results in degenerative arthropathies.
8. Biology of autologous adipose tissue grafts.
9. Musculoskeletal system tissue bank.
10. Imaging diagnosis, new technologies in diagnosis and follow-up.
11. Collaboration in joint projects with the UASP.
12. Acute-phase response in open fractures. Use of IL-6, C-reactive protein and CK in predicting results, and correlation with the Gustilo classification.
13. Vascular anatomy of the upper extremity applied to reconstructive procedures.
14. Surgical management of facial lipoatrophy based on the injection of autologous adipose tissue in HIVinfected patients.
15. Nervous system:
    - Tubulization repair of peripheral nervous system damage.
    - Experimental reimplantation of nerve root preganglionic avulsions.

PUBLICATIONS

ORIGINALS
I.F.: 4.97

1 Nunez M.; Sastre S.; Nunez E.; Lozano L.; Nicodemo C.; Segur J.M. **Health-Related Quality of Life and Direct Costs in Patients With Anterior Cruciate Ligament Injury: Single-Bundle Versus Double-Bundle Reconstruction in a Low-Demand Cohort-A Randomized Trial With 2 Years of Follow-up.** ARTHROSCOPY-THE JOURNAL OF ARTHROSCOPIC AND RELATED SURGERY. 28 (7): 929-935. **I.F.: 3.02.**

2 Benito-Ruiz J.; Raigosa M.; Yoon T.S. **Columella Reconstruction Using a Free Flap From the First Web Space of the Foot.** ANNALS OF PLASTIC SURGERY. 69:279-282. **I.F.: 1.32.**

3 Pacheco-Huergo V.; Viladrich C.; Pujol-Ribera E.; Cabezas-Pena C.; Nunez M.; Roura-Olmeda P.; Amado-Guirado E.; Nunez E.; Del Val J.L. **Perception in chronic illnesses: linguistic validation of the revised Illness Perception Questionnaire and the Brief Illness Perception Questionnaire for a Spanish population.** ATENCIÓN PRIMARIA. 44 (5): 280-287. **I.F.: 0.63.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	27.31	11	5	3
2011	62.94	21	7	6
2012	4.97	3	1	0

GRANTS FOR RESEARCH IN PROGRESS

Soriano A. **Grup de patologia sèptica de l'aparell locomotor.** Sponsored by: AGAUR 2009_SGR_906. Duration: 15/09/2009-31/12/2013.

Nuñez M. **Programa educatiu per a pacients amb artrosi de genoll i obesitat tipus I i tipus II (mòrbida), un estudi aleatoritzat i d'aplicació pràctica.** Sponsored by: Col·legi Oficial d'Infermeres i Infermers de Barcelona PR-5383-11. Duration: 01/01/2012-31/12/2012.

Fores J. **Eficacia del tratamiento con condroitin sulfato en la rizartrosis. Medicion con test sensoriales y funcionales cuantitativos y analisis de concordancia con escalas subjetivas de dolor.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC08/00079. Duration: 01/01/2009-30/06/2013.

Nuñez M. **Calidad de vida relacionada con la salud, dependencia física y costes en pacientes con artrosis después de artroplastia total de rodilla. Estudio prospectivo.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1148. Duration: 01/01/2010-31/12/2012.

Soriano A. **Estudio para determinar la presencia de microorganismos en la superfície de prótesis articulares retiradas por un aflojamiento aséptico.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/02245. Duration: 01/01/2011-31/12/2013.

Sastre S. **Determinación de los niveles plasmáticos de substancia P en pacientes afectos de patología tendinosa degenerativa del hombro tributarios de cirugía.** Sponsored by: Fundación Española de Artroscopia AEA2011-SASTRE. Duration: 04/05/2011-03/05/2013.

Suso S. **Estudio clínico piloto de terapia alogénica con células madre adultas expandidas "ex vivo" conjugadas en matriz ósea de origen alogénico en el tratamiento de fracturas de fémur proximal en ancianos.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-158. Duration: 01/01/2012-31/12/2012.

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

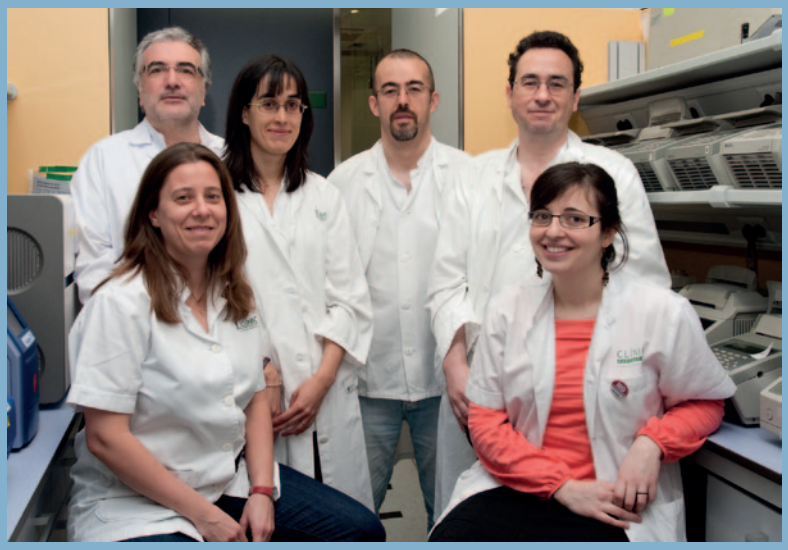
Immunogenetics of the autoinflammatory response

GROUP MEMBERS

TEAM LEADER
Jordi Yagüe (Hospital Clínic)
Tel.: 93 227 54 00 (Ext: 2155)
E-mail: jyague@clinic.cat

RESEARCHERS:
Juan Ignacio Aróstegui (Hospital Clínic)
Manel Juan Otero (Hospital Clínic)

COLLABORATORS:
Eva Gonzalez Roca (Hospital Clínic)
Estíbaliz Ruiz Ortiz de Arrizabaleta (Fundació Clínic)
Azucena González Navarro (Hospital Clínic)



STRATEGIC OBJECTIVES

In the field of **autoinflammatory diseases:**
Promotion of basic, clinical and translation research in the physiopathology of autoinflammatory diseases as a model for gaining in-depth knowledge of the regulation of the normal inflammatory response, its dysfunctions, and its repercussions upon the immune response.

In the field of **immune response:**
Determination of the components of normal and pathological inflammatory response is essential for modulating the specific recognition phenomena of the immune response.

MAIN LINES OF RESEARCH

In the field of **autoinflammatory diseases:**

- Determination of the genetic and molecular bases of the autoinflammatory process.
- Characterization of the regulatory mechanisms of the inflammasome and its dysfunction.
- Characterization of the specific transcriptional profiles of autoinflammatory diseases.
- Isolation of new genes responsible for hereditary autoinflammatory diseases and identification of genetic susceptibility factors for the development of polygenic autoinflammatory processes.
- Definition of new therapeutic targets for the treatment of autoinflammatory diseases.

In the field of **immune response:**

- Assessing the role of HLA-DRB3/4/5 loci in the immune response against infection, transplantation and autoimmune response.
- Assessing the role of the mutation E52del in MyD88 in normal population as well as in relation to the lack of MyD88.

PUBLICATIONS

ORIGINALS
I.F.: 68.60

1 Martinez-Saez E.; Gelpi E.; Rey M.J.; Ferrer I.; Ribalta T.; Botta-Orfila T.; Nos C.;Yague J.; Sanchez-Valle R. **Hirano body-rich subtypes of Creutzfeldt-Jakob disease.** NEUROPATHOLOGY AND APPLIED NEUROBIOLOGY. 38 (2): 153-161. **I.F.: 3.80.**

2 Puga I.; Cols M.; Barra C.M.; He B.; Cassis L.; Gentile M.; Comerma L.; Chorny A.; Shan M.M.; Xu W.F.; Magri G.; Knowles D.M.; Tam W.; Chiu A.; Bussel J.B.; Serrano S.; Lorente J.A.; Bellosillo B.; Lloreta J.; Juanpere N.; Alameda F.; Baro T.; De Heredia R.D.; Toran N.; Catala A.; Torrebadell M.; Fortuny C.; Cusi V.; Carreras C.; Diaz G.A.; Blander J.M.; Farber C.M.; Silvestri G.; Cunningham-Rundles C.; Calvillo M.; Dufour C.; Notarangelo L.D.; Lougaris V.; Plebani A.; Casanova J.L.; Ganal S.C.; Diefenbach A.; Arostegui J.I.; Juan M.; Yague J.; Mahlaoui N.; Donadieu J.; Chen K.; Cerutti A. **B cell-helper neutrophils stimulate the diversification and production of immunoglobulin in the marginal zone of the spleen.** NATURE IMMUNOLOGY. 13 (2): 170-180. **I.F.: 26.01.**

3 Toplak N.; Frenkel J.; Ozen S.; Lachmann H.J.; Woo P.; Kone-Paut I.; De Benedetti F.; Neven B.; Hofer M.; Dolezalova P.; Kuemmerle-Deschner J.; Touitou I.; Hentgen V.; Simon A.; Girschick H.; Rose C.; Wouters C.; Vesely R.; Arostegui J.; Stojanov S.; Ozgodan H.; Martini A.; Ruperto N.; Gattorno M. **An International registry on Autoinflammatory diseases: the Eurofever experience.** ANNALS OF THE RHEUMATIC DISEASES. 71 (7): 1177-1182. **I.F.: 8.73.**

4 Vergara C.; Borzutzky A.; Gutierrez M.A.; Iacobelli S.; Talesnik E.; Martinez M.E.; Stange L.; Basualdo J.; Maluje V.; Jimenez R.; Wiener R.; Tinoco J.; Jarpa E.; Arostegui J.I.; Yague J.; Alvarez-Lobos M. **Clinical and genetic features of hereditary periodic fever syndromes in Hispanic patients: the Chilean experience.** CLINICAL RHEUMATOLOGY. 31 (5): 829-834. **I.F.: 2.00.**

5 Llupia A.; Vilella A.; Costas L.; Diez C.; Torres F.; Yague J.; Masso M.; Munoz A.; Mensa J. **Can the response to 23-valent pneumococcal vaccine in splenectomised patients be predicted?** VACCINE. 30 (13): 2382-2386. **I.F.: 3.77.**

6 Tovar N.; Fernandez de larrea C.; Elena M.; Cibeira M.T.; Arostegui J.I.; Rosinol L.; Filella X.; Yague J.; Blade J. **Prognostic Impact of Serum Immunoglobulin Heavy/Light Chain Ratio in Patients with Multiple Myeloma in Complete Remission after Autologous Stem Cell Transplantation.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18 (7): 1076-1079. **I.F.: 3.87.**

7 Gomez A.R.; Couce M.L.; Garcia-Villoria J.; Torres A.; Souto A.B.; Yague J.; Vilaseca M.A.; Ribes A.; Arostegui J.I. **Clinical, Genetic, and Therapeutic Diversity in 2 Patients With Severe Mevalonate Kinase Deficiency.** PEDIATRICS. 129 (2): E535-E539. **I.F.: 5.44.**

8 Retamozo S.; Akasbi M.; Brito-Zeron P.; Bosch X.; Bove A.; Perez-De-Lis M.; Jimenez I.; Soto-Cardenas M.J.; Gandia M.; Diaz-Lagares C.; Vinas O.; Siso A.; Perez-Alvarez R.; Yagüe J.; Ramos-Casals M. **Anti-Ro52 antibody testing influences the classification and clinical characterisation of primary Sjogren's syndrome.** CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 30(5):686-92. **I.F.: 2.15.**

9 Enjuanes A.; Benavente Y.; Hernandez-Rodriguez J.; Queralt C.; Yague J.; Jares P.; De Sanjose S.; Campo E.; Cid M.C. **Association of NOS2 and potential effect of VEGF, IL6, CCL2 and IL1RN polymorphisms and haplotypes on susceptibility to GCA-a simultaneous study of 130 potentially functional SNPs in 14 candidate genes.** RHEUMATOLOGY. 51 (5): 841-851. **I.F.: 4.06.**

10 Pascal M.; Muñoz-Cano R.; Reina Z.; Palacín A.; Vilella R.; Picado C.; Juan M.; Sánchez-López J.; Rueda M.; Salcedo G.; Valero A.; Yagüe J.; Bartra J. **Lipid transfer protein syndrome: clinical pattern, cofactor effect and profile of molecular sensitization to plant-foods and pollens.** CLIN EXP ALLERGY. 42(10):1529-39. **I.F.: 5.03.**

11 Antonell A.; Gil S.; Sánchez-Valle R.; Balasa M.; Bosch B.; Prat M.C.; Chiollaz A.C.; Fernández M.; Yagüe J.; Molinuevo J.L.; Lladó A. **Serum progranulin levels in patients with frontotemporal lobar degeneration and Alzheimer's disease: detectionof GRN mutations in a Spanish cohort.** J ALZHEIMERS DIS. 31(3):581-91. **I.F.: 3.74.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	19.96	4	3	1
2011	70.42	9	5	1
2012	68.60	11	7	2

GRANTS FOR RESEARCH IN PROGRESS

Yagüe J. **Immunogenetica en la resposta autoinflamatoria.** Sponsored by: AGAUR 2009_SGR_1260. Duration: 23/09/2009-31/12/2013.

Yagüe J. **Análisis de las vías de señalización TOLL/IL-1 receptor (TIR), NOD-LIKE receptro (NLR) y NF-kB en las formas hereditarias y no hereditarias de las enfermedades autoinflamatorias. Valorización de su utilidad clínica como pruebas predictivas de respuestaa terapias biológicas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1182. Duration: 01/01/2010-31/12/2012.

Juan Otero M. **Reevaluación del papel de HLA-DRB3 (DR52) en la respuesta de los linfocitos T CD4+.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01404. Duration: 01/01/2011-31/12/2013.

DOCTORAL THESES

Juan M. **Allergenic protein and epitope recognition in food allergy: a new perspective for the molecular and clinical characterization of shellfish and lipid transfer protein allergy.** PhD student: Mariona Pascal Capdevila.

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Emergencies: Processes and pathologies

GROUP MEMBERS

TEAM LEADER
Oscar Miró Andreu (Hospital Clínic)
Tel.: 93 227 54 00 (Ext. 3153)
E-mail: omiro@clinic.cat

RESEARCHERS:
Santiago Nogué Xarau (Hospital Clínic)
Miguel Sánchez Sánchez (Hospital Clínic)
Blanca Coll-Vinent Puig (Hospital Clínic)
Sònia Jiménez Hernández (Hospital Clínic)
Rafel Perelló Carbonell (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Sira Aguiló Mir (Hospital Clínic)
Xavier Alemany González (Hospital Clínic)
Maria Luisa Benito (CAP Les Corts)
Pablo Busca Ostolaza (Facultat de Medicina)
Núria Díaz Miranda (Pedagoga, Escola Molina, Barcelona)
Francesc Xavier Escalada Roig (SEM)
Rosa Escoda Turón (Hospital Clínic)
Carolina Fuenzalida Inostroza (Facultat Medicina)
Victor Gil Espinosa (Hospital Clínic)
Beatriz López Barbeito (Hospital Clínic)
Arrate Placer López de Alda (Hospital Clínic)
María Teresa Ruiz (Hospital Clínic)

NURSING STAFF:
Montserrat Amigó Tadín (Hospital Clínic)
Berta Calvo (Hospital Clínic)
Eva Gómez Rodríguez (Hospital Clínic)
Verónica Peinado (Hospital Clínic)

COLLABORATORS:
Josep Ramon Alonso Viladot (Hospital Clínic)
Albert Antolín Santaliestra (Hospital Clínic)
Francesc Xavier Jiménez Fábrega (SEM)
Miguel Galicia Paredes (Hospital Clínic)
Ana García Martínez (Hospital Clínic)
Elisenda Gómez Angelats (Hospital Clínic)
Mila Perea Gainza (Hospital Clínic)
Emilio Salgado García (Hospital Clínic)
Mar Ortega Romero (Hospital Clínic)

STRATEGIC OBJECTIVES

The group has a general interest in the study of all processes and pathologies inherent to the emergency setting - in all cases adopting a patient – centered approach and focusing on the acute process leading to emergency consultation. This approach is absolutely unique in Catalonia and in Spain, in view of the topic involved and the perspective from which it is addressed. The processes seen in the Emergency Department are exclusive and unique, and improvement in their knowledge leads to healthcare and organizational implications with considerable scope and repercussion. While the transverse characteristics of emergency disease conditions cause them to be dealt with by other disciplines, in the first few hours of their presentation they are exclusively addressed by the Emergency Department, where clinical research has not classically been considered. As a result, the possibilities for gaining in-depth and new knowledge on the part of the group are immense.

MAIN LINES OF RESEARCH

1. **Functional aspects of Hospital Emergency Departments.** Since 1997, the group has dedicated an important part of its research effort to exploring the fundamental functional mechanisms of a Hospital Emergency Department. In a series of studies, the group has demonstrated that the most important limiting element regarding the efficacy, effectiveness and quality of the Emergency Department is fundamented upon extrinsic rather than upon intrinsic factors (service demand). Among the intrinsic factors, those dependent upon the Hospital rather than on the Emergency Department as such are the most decisive in determining the functionality of a given Emergency Department.

2. **Clinical aspects of intoxicated patients.** This is a line of long tradition and history in our research group. The Clinic Hospital is a reference centre in Catalonia for healthcare and research in relation to intoxications of all kinds. It is a member of the SEMES-TOX group, which is the toxicology working group of the Spanish Society of Emergency Care Medicine and Urgencies, and of the FETOC (Spanish Foundation of Clinical Toxicology).

3. **Treatment of arrhythmias in the emergency room.** For over 10 years the group has participated in a coordinated manner with the cardiologists of the center, with primary care physicians working in clinics in their corresponding reference areas, and with other investigators in Spain who work in Emergency Departments (the group forms part of the arrhythmias chapter of the Spanish Society of Emergency Care Medicine and Urgencies), in the investigation of disorders of this kind. The most relevant contributions of the group in this setting have been in reference to ATRIAL FIBRILLATION.

4. **Evaluation of chest pain in the Emergency Department.** The group coordinates and conducts important research work in the only structural chest pain unit currently operating in Spain, which began its activities in 2002. From the start, the group has centered its efforts on taking advantage of this fact to investigate the medical care of these patients, and to further knowledge of a subgroup of these subjects who had not been diagnosed at the time with acute coronary disease, and had therefore not been sufficiently investigated.

5. **Diffusion of the teaching of cardiopulmonary resuscitation maneuvers among the general population.** This is an interdisciplinary line of work which, from its start in the year 2000, has involved different professionals (physicians and nurses in both out- and in-hospital emergency services, with pedagogical support). Its main objective is to explore all the possibilities and difficulties for diffusing knowledge of cardiopulmonary resuscitation maneuvers among the general population. The setting in which the research activity has been most intense is among students in secondary education (14-16 years of age), where the approach is made through a specific program, the PROCES (Programa de Reanimació cardiopulmonar Orientat a Centres d'Ensenyament Secundari, or cardiopulmonary resuscitation program oriented towards secondary education centres) designed exclusively for application in the current Catalan educational model, which has been fully developed by members of the group (Òscar Miró i Andreu, Miquel Sánchez-Sánchez, and Núria Díaz-Miranda).

6. **Emergency medical care for problems caused by drug abuse.** Originally conceived as a toxicological variant, the importance and specificity of research in this field made it possible in 2001 to create this line of research. The advantages derived as a result of research from the emergency care perspective has made it possible to clearly improve our knowledge of this group of disorders. At present, the group works in collaboration with other groups in Spain and in other countries.

7. **Acute heart failure.** This research line focuses on the differential aspects (both clinical and epidemiological) of acute decompensated heart failure. Investigation of this syndrome – highly prevalent in Emergency Departments – is carried out in combination with other Emergency Departments throughout Spain, within the context of the acute heart failure working group of the Spanish Society of Emergency Care Medicine and Urgencies.

8. **Attention to infectious diseases in Emergency Departments.** This new research line brings together different approaches to infections, focusing on the clinical data and diagnostic or therapeutic actions performed during the first hours of the patients at the hospital, which use to occur in the Emergency Department. The research is focused on prevalent infections, life-threatening infections (especially sepsis) and infections associated with HIV.

9. **Dynamics of teaching and research in Emergency Medicine.** In Spain Emergency Medicine is not officially recognized as a specialty. Therefore there is a lack of teaching and research which demands a deep analysis. At the same time, it would be interesting to gain a better understanding of the characteristics that drive these activities and compare them with the results of the activity recorded in other specialties with long experience and recognition. In addition, bibliometric tools are becoming very powerful, allowing detailed examination of the research activity as well as opening new research possibilities around these tools.

PUBLICATIONS

ORIGINALS
I.F.: 52.02

1 Garrabou G.; Moren C.; Lopez S.; Tobias E.; Cardellach F.; Miro O.; Casademont J. **The Effects of Sepsis on Mitochondria** JOURNAL OF INFECTIOUS DISEASES. 205 (3): 392-400 FEB 1 2012. **I.F.: 6.41.**

2 Herrero-Puente P.; Martin-Sanchez F.J.; Fernandez-Fernandez M.; Jacob J.; Llorens P.; Miro O.; Alvarez A.B.; Perez-Dura M.J.; Alonso H.; Garrido M. **Differential clinical characteristics and outcome predictors of acute heart failure in elderly patients** INTERNATIONAL JOURNAL OF CARDIOLOGY. 155 (1): 81-86. **I.F.: 7.08.**

3 Galicia M.; Nogue S.; Casanas X.; Iglesias M.L.; Puiguriguer J.; Supervia A.; Aguirre A.; Clemente C.; Puente I.; Echarte J.L.; Garcia-Perez C.; Burillo-Putze G.; Bernal A.; Busca P.; Gil E.; Miro O. **Multicenter assessment of the revisit risk for a further drug-related problem in the emergency department in cocaine users (MARRIED-cocaine study)** CLINICAL TOXICOLOGY. 50 (3): 176-182 MAR 2012. **I.F.: 2.22.**

4 Martin-Sanchez F.J.; Gil V.; Llorens P.; Herrero P.; Jacob J.; Fernandez C.; Miro O. **Barthel IndexuEnhanced Feedback for Effective Cardiac Treatment (BluEFFECT) Study: Contribution of the Barthel Index to the Heart Failure Risk Scoring System Model in Elderly Adults with Acute Heart Failure in the Emergency Department** JOURNAL OF THE AMERICAN GERIATRICS SOCIETY. 60 (3): 493-498. **I.F.: 3.74.**

5 Miro O.; Gil V.; Herrero P.; Martin-Sanchez F.J.; Jacob J.; Llorens P. **Multicentric investigation of survival after Spanish emergency department discharge for acute heart failure** EUROPEAN JOURNAL OF EMERGENCY MEDICINE. 19 (3): 153-160. **I.F.: 0.90.**

6 Miro O.; Valcarcel de la Iglesia M.A.; Cremades Pallas R.M.; Burillo-Putze G.; Julian A.; Martin Sanchez F.J. **Productivity of Spanish emergency physicians in the 5-year periods from 2005 to 2009 and 2000-2004** EMERGENCIAS. 24 (3): 164-174. **I.F.: 2.49.**

7 Nogue S.; Amigo M.; Uria E.; Fernandez F.; Velasco V. **Chemical decontamination in the emergency department** EMERGENCIAS. 24 (3): 203-207. **I.F.: 2.49.**

8 Burillo-Putze G.; Traveria Becker L.; Galvez Rodriguez M.; Sanchez Torres J.; Nogue S. **Liquid cocaine body packers** CLINICAL TOXICOLOGY. 50 (6): 522-524. **I.F.: 2.22.**

9 Llorens P.; Miro O.; Roman F.; Zapater P.; Carbajosa-Dalmau J.; Llanos L. **Efficacy of early administration of levosimendan in emergency department in patients with acute heart failure: a randomized pilot clinical trial** EMERGENCIAS. 24 (4): 268-276 AUG 2012. **I.F.: 2.49.**

10 Nogue S.; Miro O. **Chemical submission and attention in Emergency departments** MEDICINA CLINICA. 139:461-461. **I.F.: 1.38.**

11 Aguirre Tejedo A.; Miro O.; Jacob Rodriguez J.; Herrero Puente P.; Martin Sanchez F.J.; Alemany X.; Llorens Soriano P. **The influence of precipitating factors on short-term prognosis in acute heart failure: the PAPRICA study** EMERGENCIAS. 24:438-446. **I.F.: 2.49.**

12 Castanyer Puig B.; Puiguriguer Ferrando J.; Barcelo Martin B.; Nogue Xarau S. **Role of laboratory tests in managing acute poisonings: a survey of emergency physicians** EMERGENCIAS. 24:447-453. **I.F.: 2.49.**

13 Nogue S.; Cino J.; Civeira E.; Puiguriguer J.; Burillo-Putze G.; Duenas A.; Soy D.; Aguilar R.; Corominas N. **Digitalis poisoning: the basis for treatment with antidigoxin antibodies** EMERGENCIAS. 24:462-475. **I.F.: 2.49.**

14 Hernàndez S.; Morén C.; López M.; Coll O.; Cardellach F.; Gratacós E.; Miró O.; Garrabou G. **Perinatal outcomes, mitochondrial toxicity and apoptosis in HIV-treated pregnant women and in-utero-exposednewborn** AIDS. 26(4):419-28. **I.F.: 6.24.**

15 Jiménez Hernández S.; Martínez Fernández S.; Merlo Loranca M.; Núñez.; Fernández J.M.; Ruiz Romero F.; García Bermejo P.; et al. **Emergency department use of thromboprophylaxis in patients not requiring admission: results from the URGENTV study** EMERGENCIAS. 24(1):19-27. **I.F.: 2.49.**

16 Morén C.; Noguera-Julian A.; Garrabou G.; Catalán M.; Rovira N.; Tobías E.; Cardellach F.; Miró Ò.; Fortuny C. **Mitochondrial evolution in HIV-infected children receiving first- or second-generation nucleoside analogues.** JAIDS-J ACQ IMM DEF. 60(2):111-6. **I.F.: 4.42.**

REVIEWS
I.F.: 3.38

1 Miro O.; Burillo-Putze G. **Research in emergency medicine in Europe** EUROPEAN JOURNAL OF EMERGENCY MEDICINE. 19 (2): 63-68. **I.F.: 0,90.**

2 Martín Martín A.; Fernandez Lozano I.; Coll-Vinent Puig B.; Tercedor Sánchez L.;

Del Arco Galán C. **Manejo de los pacientes con fibrilación auricular en los servicios de urgencias hospitalarios (actualización 2012)** EMERGENCIAS. 24(4):300-324. **I.F.: 2,49.**

EDITORIALS
I.F.: 11.80

1 Miró O. **EMERGENCIES: citius, altius, fortius** EMERGENCIAS. 24 (1): 1-2. **I.F.: 2.49.**

2 Miró O.; Martin-Sanchez F.J.; Cone D.C. **The Spanish language in North American emergency medicine** EMERGENCIAS. 24:341-342. **I.F.: 2.49.**

3 Miró O.; Diaz N.; Sanchez M. **Learning cardiopulmonary resuscitation at school** EMERGENCIAS. 24:423-425. **I.F.: 2.49.**

4 Cone D.C.; Miro O.; Martin-Sanchez, F.J. **Launching Spanish Abstracts** ACADEMIC EMERGENCY MEDICINE. 19:E1085-E1085. **I.F.: 1.86.**

5 Miró O. **The new impact factor** EMERGENCIAS. 24:262-264. **I.F.: 2.49.**

GRANTS FOR RESEARCH IN PROGRESS

Miró O. **Identificación de los factores asociados a reconsulta, ingreso y mortalidad precoz en pacientes dados de alta directamente de urgencias por un episodio de insuficiencia cardiaca aguda: estudio español multicéntrico.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01021. Duration: 01/01/2012-31/12/2014.

Miró O. **Grup de recerca consolidat.** Sponsored by: Generalitat de Catalunya, SGR 2009-1385. Duration:01/01/2009-31/12/2013.

DOCTORAL THESES

Miró O. **Diferencias de género en el abordaje de la patología cardiovascular: una aproximación desde la perspectiva de la asistencia médica urgente.** PhD student: Alba M. Riesgo García.

Miró O. **Estudio sobre los factores externos e internos que determinan el funcionamiento de un servicio de urgencias hospitalario.** PhD student: Emilio José Salgado Garcia.

Miró O. **Factores pronósticos en la insuficiencia cardiaca aguda atendida en los servicios de urgencias hospitalarios españoles. Análisis del registro eahfe.** PhD student: Javier Jacob Rodríguez.

Miró O. **Mitochondrial funtionalism in hiv-infected children receiving antiretroviral therapy.** PhD student: Constanza Morén Núñez.

Nogué S. **Aportación analitica al proceso de atención al paciente intoxicado. Experiencia en la unidad de toxicologia clinica del hospital universitario Son Dureta.** PhD student: Bartomeu Castanyer Puig.

Nogué S. **Evidència científica en l'ús dels antídots.** PhD student: Nuria Corominas Garcia.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	40.83	21	1	7
2011	49.13	20	4	5
2012	52.02	16	12	2

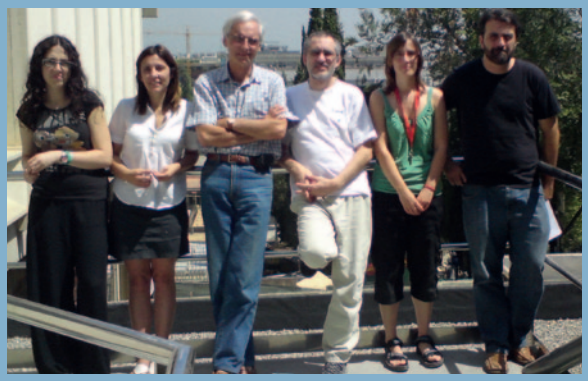
AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

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

GROUP MEMBERS

TEAM LEADER
Daniel Closa (IIBB-CSIC)
Tel.: 93 363 83 43
E-mail: daniel.closa@iibb.csic.es



RESEARCHERS:
Oriol Bulbena (IIBB-CSIC)
Emili Gelpí (IIBB-CSIC)
Joaquín Abián (IIBB-CSIC-UAB)
Montserrat Carrascal (IIBB-CSIC)
Emma Folch (IBB-CSIC)

PRE-DOCTORAL RESEARCHERS:
L. Bonjoch (CIBEREHD)
C. Lebrero (GENAME)
R. Guillamat (CIBERES)

TECHNICIANS:
L. Ignacio Sanchez (IIBB-CSIC)
V. Sirenko (IDIBAPS)
Edita Bueno (JAE-TEC)
Joan Villanueva (Proteored)
Ana González (Proteored)
D. Ovelleiro (Proteored)
V. Casas (TS- MICINN)

COLLABORATORS:
F. Pí (IIBB-CSIC)
A. Salas (RC)
A. Serrano (IIBB-CSIC)
G. Gay (IIBB-CSIC)
M. Gay (JAE-DOC)

STRATEGIC OBJECTIVES

1. **Molecular and cellular bases of inflammation:**
   Study of inflammatory response in general.

2. **Structural and biological mass spectrometry:**
   Development of techniques for solving problems in proteomics and in the analysis of biomolecules in general. Application to the study of antigen presentation in autoimmune diseases and to the investigation of therapeutic targets and markers of the disease.

MAIN LINES OF RESEARCH

1. **Molecular and cellular bases of inflammation:**
   - Mechanisms involved in the development of systemic inflammatory processes.
   - New therapies for idiopathic pulmonary fibrosis.
   - Study of the lipid alterations associated with pancreatitis.

2. **Structural and biological mass spectrometry:**
   - Phosphoproteomics of the human T lymphocyte.
   - Diagnostic and prognostic markers in cancer and other diseases.
   - External scientific-technical services. Proteomics Services and Coordination of Proteored Network.

PUBLICATIONS

ORIGINALS
I.F.: 7.87

1 Amezqueta S.; Galan E.; Fuguet E.; Carrascal M.; Abian J.; Torres J.L. **Determination of d-fagomine in buckwheat and mulberry by cation exchange HPLC/ESI-Q-MS.** ANALYTICAL AND BIOANALYTICAL CHEMISTRY. 402 (5): 1953-1960. **I.F.: 3.79.**

2 Gea-Sorlí S.; Bonjoch L.; Closa D. **Differences in the inflammatory response induced by acute pancreatitis in different white adipose tissue sites in the rat.** PLOS ONE. 7(8):e41933. **I.F.: 4.09.**

GRANTS FOR RESEARCH IN PROGRESS

Abian J. **La activación linfocitaria a través del análisis del fosfoproteoma. Determinación de perfiles de fosforilación in vivo.** Sponsored by: MICINN, BIO2009-11735. Duration: 01/01/2010-31/12/2012.

Bulbena O. **Trasplante de células alveolares tipo II, derivadas de células madre adultas, para el tratamiento de la fibrosis pulmonar idiopática.** Sponsored by: FIS, PS09/02362. Duration: 01/01/2010-31/12/2013.

Abian J. **Desarrollo de una herramienta de diagnóstico molecular para la obtención de aves con mayor valor añadido.** Sponsored by: Proyectos INNPACTO 2011, MICINN. Laboratorios Dr. Larrasa S.L. Duration: 01/01/2011-31/12/2014.

Abian J. **Desarrollo de una vacuna global frente a Brachyspira hyodysenteriae y Brachyspira pilosicoli mediante análisis pan-genómico estructural y funcional combinado con tecnologías de producción de proteínas recombinantes (brachVac).** Sponsored by: Proyectos INNPACTO 2011, MICINN. Laboratorios Dr. Larrasa S.L. Duration: 01/01/2011-31/12/2014.

Carrascal M. **Caracterización del secretoma y fosfosecretoma del linfocito T CD4+ primario humano mediante herramientas proteómicas.** Sponsored by: MICINN. Duration: 01/01/2011-31/12/2012.

Closa D. **Regulació de la Inflamació Aguda i Crónica.** Sponsored by: Generalitat de Catalunya, AGAUR, 2009_SGR_966. Duration: 16/09/2009-31/12/2013.

Closa D. **Trasplante de macrófagos reprogramados ex vivo como terapia para la pancreatitis aguda experimental.** Sponsored by: Ministerio Ciencia e Innovación, SAF2009-07605. Duration: 1/1/2010 - 31/12/2012.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	51.15	9	8	0
2011	24.86	5	3	0
2012	7.87	2	2	0

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

ATHEROSCLEROSIS, CORONARY DISEASE AND HEART FAILURE . . 102

ARRHYTHMIAS, RESYNCHRONIZATION AND CARDIAC IMAGING . . 108

NEPHRO-UROLOGICAL DISEASES AND KIDNEY TRANSPLANTATION 116

HYPERTENSION, LIPIDS AND CARDIOVASCULAR RISK 121

RESPIRATORY BIOPHYSICS AND BIOENGINEERING 127

APPLIED RESEARCH IN INFECTIOUS RESPIRATORY DISEASES, CRITICALLY ILL PATIENTS AND LUNG CANCER 130

PHYSIOPATHOLOGICAL MECHANISMS OF RESPIRATORY ILLNESSES 137

CLINICAL AND EXPERIMENTAL RESPIRATORY IMMUNOALLERGY (IRCE) 141

INFLAMMATION AND REPAIR IN RESPIRATORY ILLNESSES 148

GENETIC AND UROLOGICAL TUMOURS 151

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Atherosclerosis, coronary disease and heart failure

GROUP MEMBERS

TEAM LEADER
Manel Sabaté Tenas (Hospital Clínic)
Tel.: 93 227 93 05
E-mail: masabate@clinic.cat

RESEARCHERS:
Magda Heras Fortuny (Hospital Clínic)
Xavier Bosch (Hospital Clínic)
Ana Paula Dantas (IDIBAPS)
Carles Paré (Hospital Clínic)
Félix Pérez Villa (Hospital Clínic)
José Luis Pomar (Hospital Clínic)
Montserrat Rigol (IDIBAPS)
Mercè Roqué (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Luis Álvarez Contreras (Fundació Clínic)

TECHNICIANS:
Nadia Castillo (Fundació Clínic)

NURSING STAFF:
Anna Barrabés (Fundació Clínic)
Elisabet de Mingo (IDIBAPS)

ADMINISTRATIVE STAFF:
Mª Angeles Alvarez (Hospital Clínic)
Eva Trellisó (Fundació Clínic)

COLLABORATORS:
Montserrat Batlle (IDIBAPS)
Mònica Masotti (Hospital Clínic)
África Muxí (Hospital Clínic)
Núria Solanes (Fundació Clínic)
José Ortiz Pérez (Hospital Clínic)
Laura Novensà (IDIBAPS)
Rut Andrea (Hospital Clínic)
Manel Azqueta (Hospital Clínic)
Montserrat Cardona (Hospital Clínic)
Carles Falces (Hospital Clínic)
Victoria Martín Yuste (Hospital Clínic)
Susanna Prat (Hospital Clínic)
Mª José Pulgarín (IDIBAPS)
Salvatore Brugaletta (Hospital Clínic)
Ana García Álvarez (Hospital Clínic)

TEAM INVOLVED IN:

Red HERACLES de investigación cardiovascular

STRATEGIC OBJECTIVES

- To identify the pathophysiological mechanisms involved in the process of accelerated atherosclerosis. The research focuses on the area of cardiovascular biology.
- To evaluate the clinical efficacy of regenerative cell therapy and carry out further in-depth study of the regulatory mechanisms of the exogenous and endogenous stem cells in ischaemic heart disease and heart failure.
- To gain an increased understanding of the genetics, pathophysiology, diagnosis and treatment of heart failure in the areas of basic and clinical research, imaging techniques, biomarkers, risk factors and advances in both medical treatment and treatment with medical devices. The research focuses on patients with advanced heart failure and patients with heart failure in the community.
- To gain an increased understanding of the organisational models for the care of cardiovascular patients in the community: integration between cardiology and primary care, cardiovascular prevention and care of the chronic patient.
- To gain a more in-depth understanding of the pathophysiology, diagnostic methods and results of new treatments for acute and chronic ischaemic heart disease. The research focuses on basic in vitro studies, studies on animal models, clinical studies of the pathophysiology and safety and efficacy studies on the different treatments for coronary heart disease. The aim is to further concentrate on the effects of the risk factors on the development of ischaemic heart disease.
- To evaluate the repercussions of the new diagnostic techniques and types of treatment in structural heart disease, including valvular disease and congenital and acquired structural disease.
- To study the applicability of the invasive and non-invasive imaging techniques in ischaemic heart disease, heart failure, structural heart disease and cell therapy.

MAIN LINES OF RESEARCH

Cardiovascular Biology:

- Study of the mechanisms of hyperplasia of the intima following coronary revascularisation procedures in murine and porcine experimental models with the aim of developing pharmacological prevention strategies.
- Study of the biocompatibility of the materials in the design of intracoronary devices.
- Study of impedance during the endothelialisation process of a coronary stent. Development of the "smart stent".
- Study of the influence of hormonal factors and aging on the regulation of the nitric oxide and superoxide systems in the healthy population and the population with cardiovascular disease.
- Determination of the mechanisms involved in the regulation of the nitric oxide and superoxide systems through steroid receptors and their role in regulating the development of cardiovascular diseases such as atherosclerosis, hypertension, diabetes and metabolic syndrome.

Cell Therapy:

- Study of the efficacy of cell therapy in patients with chronic refractory angina and non-revascularisable coronary disease and the regulation of endothelial progenitor cell activation in acute myocardial infarction. At an experimental level, we are analysing the regulatory mechanisms and the efficacy of the administration of mesenchymal stem cells on myocardial regeneration in an experimental pig model.

Ischaemic heart disease:

- Pathophysiology and improvement in the diagnosis and treatment of acute coronary syndrome. Role of the mechanisms of vascular inflammation and thrombosis. Evaluation of the circulating endothelial cells and the progenitor endothelial cells.
- Study of the impact of gender differences on ischaemic heart disease. Evaluation of the characteristics of cardiovascular disease in women and the different factors affecting the prognosis.
- Clinical studies evaluating the efficacy and safety of drug-eluting stents coated with everolimus in patients with ST-segment elevation myocardial infarction (EXAMINATION Study).
- Clinical evaluation of the fully bioresorbable coronary device (Absorb) in patients with ischaemic heart disease.
- Chronic total occlusion of coronary arteries in humans: from the pathophysiology to the clinical implications of successful recanalisation through percutaneous coronary intervention. Utility of imaging techniques in the indications and treatment of patients with chronic coronary artery occlusions and assessment of results and follow-up.

Heart failure:

- Study of neurohormonal activation and the fibrotic process associated with ventricular remodelling in idiopathic or ischaemic dilated cardiomyopathy using molecular biology and immunohistochemical techniques on myocardial tissue and through neurohormonal determinations.
- Genetic study of familial idiopathic cardiomyopathy.
- Prevention of ventricular dysfunction in chemotherapy patients. Evaluation of drugs for the prevention of ventricular dysfunction in oncology patients undergoing chemotherapy.
- Study of heart failure with normal ejection fraction: role of biomarkers and imaging techniques in the diagnosis, relationship between myocardial remodelling biomarkers in diagnosis and prognosis of outpatients and study of lung function in these patients.
- Evaluation of mechanical circulatory support devices: ventricular assist device as bridge to transplant.

Cardiovascular disease in the community:

- Study of the integrated care models between cardiology and primary care for improving clinical practice in patients with chronic heart disease.
- Outpatient characterisation of newonset heart failure using high-resolution imaging.
- Study of interventions in chronic patients for improving prognosis and prevention of readmissions due to heart failure.

Structural heart disease:

- Study of the efficacy and efficiency, and the repercussions on quality of life, of surgical and transcatheter treatment of aortic valve disease.
- Percutaneous closure of the left atrial appendage in patients with non-valvular atrial fibrillation requiring anticoagulant treatment who have a recent history of gastrointestinal bleeding.
- Evaluation of the impact of the use of MitraClip in patients with functional mitral regurgitation in different population groups.
- Role of cardiac imaging in the indications, diagnosis, treatment and follow-up of patients with structural heart disease.
- Advances in diagnostic imaging for and treatment of heart valve diseases and complications such as infectious endocarditis.

Chagas Heart Disease:

- Utility of the new imaging techniques and biomarkers for the early diagnosis of ardiac involvement in Chagas disease.
- Research into early markers of response to antiparasitic treatment.

Pulmonary hypertension and right ventricular dysfunction:

- Utility of cardiac magnetic resonance imaging in the estimation and monitoring of haemodynamic parameters in pulmonary hypertension.
- Utility of magnetic resonance imaging for the early detection of right ventricular dysfunction.
- Research into new pharmacological treatments in pulmonary hypertension.

PUBLICATIONS

ORIGINALS
I.F.: 217.51

1 Hernandez-Vela A.; Gatta C.; Escalera S.; Igual L.; Martin-Yuste V.; Sabate M.; Radeva P. **Accurate Coronary Centerline Extraction, Caliber Estimation, and Catheter Detection in Angiographies.** IEEE TRANSACTIONS ON INFORMATION TECHNOLOGY IN BIOMEDICINE. 16: 1332-40. **I.F.: 1.68.**

2 Cardona M.; Mirabet S.; Martin V.; Marti V.; Sabate M.; Bayes-Genis A. **Comparison of restenosis rate of bare-metal and drug-eluting stents in cardiac allograft vasculopathy.** MEDICINA CLINICA. 138 (13): 562-564. **I.F.: 1.38.**

3 Guerrero L.; Martinez-Olondris P.; Rigol M.; Esperatti M.; Luque N.; Torres A.; Soy D. **Development and validation of a high performance liquid chromatography method to determine vancomicin concentrations in plasma and pig pulmonary tissue.** JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES. 35 (1-4): 240-257 2012. **I.F.: 0,706.**

4 Li Bassi G.; Saucedo L.; Marti J.D.; Rigol M.; Esperatti M.; Luque N.; Ferrer M.; Gabarrus A.; Fernandez L.; Kolobow T.; Torres A. **Effects of duty cycle and positive end-expiratory pressure on mucus clearance during mechanical ventilation.** CRITICAL CARE MEDICINE. 40 (3): 895-902. **I.F.: 6.33.**

5 Novella S.; Heras M.; Hermenegildo C.; Dantas A.P. **Effects of Estrogen on Vascular Inflammation A Matter of Timing.** ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY. 32 (8): 2035-U670. **I.F.: 6.37.**

6 Martinez-Olondris P.; Rigol M.; Soy D.; Guerrero L.; Agusti C.; Quera M.A.; Bassi G.L.; Esperatti M.; Luque N.; Liapikou M.; Filella X.; Marco F.; De la Bellacasa J.P.; Torres A. **Efficacy of linezolid compared to vancomycin in an experimental model of pneumonia induced by methicillin-resistant Staphylococcus aureus in ventilated pigs.** CRITICAL CARE MEDICINE. 40 (1): 162-168. **I.F.: 6.33.**

7 Martinez-Revelles S.; Caracuel L.; Marquez-Martin A.; Dantas A.P.; Oliver E.; D'Ocon P.; Vila E. **Increased endothelin-1 vasoconstriction in mesenteric resistance arteries after superior mesenteric ischaemia-reperfusion.** BRITISH JOURNAL OF PHARMACOLOGY. 165 (4): 937-950. **I.F.: 4.41.**

8 Freixa X.; Bellera N.; Ortiz-Perez J.T.; Jimenez M.; Pare C.; Bosch X.; De Caralt T.M.; Betriu A.; Masotti M. **Ischaemic postconditioning revisited: lack of effects on infarct size following primary percutaneous coronary intervention.** EUROPEAN HEART JOURNAL. 33 (1): 103-112. **I.F.: 10.48.**

9 Fernandez-Barat L.; Ferrer M.; Sierra J.M.; Soy D.; Guerrero L.; Vila J.; Li Bassi G.; Cortadellas N.; Martinez-Olondris P.; Rigol M.; Esperatti M.; Luque N.; Saucedo L.M.; Agusti C.; Torres A. **Linezolid limits burden of methicillin-resistant Staphylococcus aureus in biofilm of tracheal tubes.** CRITICAL CARE MEDICINE. 40:2385-2389. **I.F.: 6.33.**

10 Marquez-Martin A.; Jimenez-Altayo F.; Dantas A.P.; Caracuel L.; Plans A.M.; Vila E. **Middle cerebral artery alterations in a rat chronic hypoperfusion model.** JOURNAL OF APPLIED PHYSIOLOGY. 112 (3): 511-518. **I.F.: 3.75.**

11 Lopez-Vilchez I.; Galan A.M.; Hernandez M.R.; Caballo C.; Roque M.; Diaz-Ricart M.; White J.G.; Escolar G. **Platelet-associated tissue factor enhances platelet reactivity and thrombin generation in experimental studies in vitro.** THROMBOSIS RESEARCH. 130:E294-E300. **I.F.: 2.44.**

12 Freixa X.; Trilla M.; Feldman M.; Jimenez M.; Betriu A.; Masotti M. **Right versus left transradial approach for coronary catheterization in octogenarian patients.** CATHETERIZATION AND CARDIOVASCULAR INTERVENTIONS. 80 (2): 267-272. **I.F.: 2.29.**

13 Husted S.; James S.; Becker R.C.; Horrow J.; Katus H.; Storey R.F.; Cannon C.P.; Heras M.; Lopes R.D.; Morais J.; Mahaffey K.W.; Bach R.G.; Wojdyla D.; Wallentin L. **Ticagrelor Versus Clopidogrel in Elderly Patients With Acute Coronary Syndromes A Substudy From the Prospective Randomized PLATelet Inhibition and Patient Outcomes (PLATO) Trial.** CIRCULATION-CARDIOVASCULAR QUALITY AND OUTCOMES. 5:680:688. **I.F.: 4.91.**

14 Gonzalez-Vilchez F.; De Prada J.A.V.; Almenar L.; Del Prado J.M.A.; Mirabet S.; Diaz-Molina B.; Delgado J.F.; Gomez-Bueno M.; Maria J.P.; Perez-Villa F.; Roig E.; Martinez-Dolz L.; Brossa V.; Lambert J.L.; Segovia J.; Crespo-Leiro M.G.; Ruiz-Cano M.J. **Withdrawal of proliferation signal inhibitors due to adverse events in the maintenance phase of heart transplantation.** JOURNAL OF HEART AND LUNG TRANSPLANTATION. 31 (3): 288-295. **I.F.: 4.33.**

15 Kristensen S.D.; Fajadet J.; Di Mario C.; Kaifoszova Z.; Laut K.G.; Deleanu D.; Gilard M.; Guagliumi G.; Goktekin O.; Jorgova J.; Kanakakis J.; Ostojic M.; Pereira H.;Sabate M.; Sobhy M.; Vrints C.; Wijns W.; Widimsky P. **Implemen-**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	131.29	33	16	9
2011	97.59	26	6	12
2012	217.51	31	19	8

tation of primary angioplasty in Europe: stent for life initiative progress report. EUROINTERVENTION. 8(1):35-42. **I.F.: 3.28.**

16 Palmerini T.; Biondi-Zoccai G.; Della Riva D.; Stettler C.; Sangiorgi D.; D'Ascenzo F.; Kimura T.; Briguori C.; Sabatè M.;,Kim H.S.; De Waha A.; Kedhi E.; Smits P.C.; Kaiser C.; Sardella G.; Marullo A.; Kirtane A.J.; Leon M.B.; Stone G.W. **Stent thrombosis with drug-eluting and bare-metal stents: evidence from a comprehensive network meta-analysis.** LANCET. 379(9824):1393-402. **I.F.: 38.29.**

17 Martín-Yuste V.; Barros A.; Leta R.; Ferreira I.; Brugaletta S.; Pujadas S.; Carreras F.; Pons G.; Cinca J.; Sabate M. **Factors determining success in percutaneous revascularization of chronic total coronary occlusion:multidetector computed tomography analysis.** REV ESP CARDIOL. 65(4):334-40. **I.F.: 2.53.**

18 Sabate M.; Cequier A.; Iñiguez A.; Serra A.; Hernandez-Antolin R.; Mainar V.; Valgimigli M.; Tespili M.; Den Heijer P.; Bethencourt A.; Vazquez N.; Gómez-Hospital J.A.; Baz J.A.; Martin-Yuste V.; Van Geuns R.J.; Alfonso F.; Bordes P.; Tebaldi M.; Masotti M.; Silvestro A.; Backx B.; Brugaletta S.; Van Es G.A.; Serruys P.W.; **Everolimus-eluting stent versus bare-metal stent in ST-segment elevation myocardial infarction (EXAMINATION): 1year results of a randomised controlled trial.** LANCET. 380(9852):1482-90. **I.F.: 38.29.**

19 Ferreira-González I.; Marsal J.R.; Ribera A.; Permanyer-Miralda G.; García-Del Blanco B.; Martí G.; Cascant P.; Masotti-Centol M.; Carrillo X.; Mauri J.; Batalla N.; Larrousse E.; Martín E., Serra A.; Rumoroso J.R.; Ruiz-Salmerón R.; De la Torre J.M.; Cequier A.; Gómez-Hospital J.A.; Alfonso F.; Martín-Yuste V.; Sabatè M.; García-Dorado D.; **Double antiplatelet therapy after drug-eluting stent implantation: risk associated with discontinuation within thefirst year.** J AM COLL CARDIOL. 60(15):1333-9. **I.F.: 14.16.**

20 Díaz J.F.; De La Torre J.M.; Sabaté M.; Goicolea J. **Spanish Cardiac Catheterization and Coronary Intervention Registry. 21st official report of the Spanish Society of Cardiology Working Group on Cardiac Catheterization and Interventional Cardiology (1990-2011).** REV ESP CARDIOL. 65(12):1106-16. **I.F.: 2.53.**

21 Penela D, Magaldi M, Fontanals J, Martin V, Regueiro A, Ortiz JT, Bosch X, Sabaté M, Heras M. **Hypothermia in acute coronary syndrome: brain salvage versus stent thrombosis?** J AM COLL CARDIOL. 61(6):686-7. **I.F.: 14.16.**

22 Di Mario C.; Eltchaninoff H.; Moat N.; Goicolea J.; Ussia G.P.; Kala P.; Wenaweser P.; Zembala M.; Nickenig G.; Alegria Barrero E.; Snow T.; Iung B.; Zamorano P.; Schuler G.; Corti R.; Alfieri O.; Prendergast B.; Ludman P.; Windecker S.; Sabate M.; Gilard M.; Witowski A., Danenberg H.; Schroeder E.; Romeo F.; Macaya C.; Derumeaux G.; Maggioni A.; Tavazzi L.; Transcatheter Valve Treatment Sentinel Registry (TCVT) Investigators of the EURObservational Research Programme (EORP) of the European Society of Cardiology. **The 2011-12 pilot European Sentinel Registry of Transcatheter Aortic Valve Implantation: in-hospital results in 4,571 patients.** EUROINTERVENTION. 8(12):1362-71. **I.F.: 3.28.**

23 Bodi V.; Sanchis J.; Morales J.M.; Marrachelli V.G.; Nunez J.; Forteza M.J.; Chaustre F.; Gomez C.; Mainar L.; Minana G.; Rumiz E.; Husser O.; Noguera I.; Diaz A.; Moratal D.; Carratala A.; Bosch X.; Llacer A.; Chorro F.J.; Viña J.R.; Monleon D. **Metabolomic profile of human myocardial ischemia by nuclear magnetic resonance spectroscopy of peripheralblood serum: a translational study based on transient coronary occlusion models.** J AM COLL CARDIOL. 59(18):1629-41. **I.F.: 14.16.**

24 Sanchis J.; Bardají A.; Bosch X.; Loma-Osorio P.; Marín F.; Sánchez P.L.; Núñez J.; Carratalá A.; Barrabés J.A. **Usefulness of high-sensitivity troponin T for the evaluation of patients with acute chest pain and no or minimalmyocardial damage.** AM HEART J. 164(2):194-200.e1. **I.F.: 4.65.**

25 Caballo C.; Palomo M.; Cases A.; Galán A.M.; Molina P.; Vera M.; Bosch X.; Escolar G.; Diaz-Ricart M. **NFκB in the development of endothelial activation and damage in uremia: an in vitro approach.** PLOS ONE. 7(8):e43374. **I.F.: 4.09.**

26 Fernandez-Barat L.; Li Bassi G.; Ferrer M.; Bosch A.; Calvo M.; Vila J.; Gabarrus A.; Martinez-Olondris P.; Rigol M.; Esperatti M.; Luque N.; Torres A. **Direct analysis of bacterial viability in endotracheal tube biofilm from a pig model of methicillin-resistant Staphylococcus aureus pneumonia following**

antimicrobial therapy. FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY. 65 (2): 309-317 Sp. Iss. **I.F.: 2.44.**

27 Hoyo I.; Sanclemente G.; Cervera C.; Cofán F.; Ricart M.J.; Perez-Villa F.; Navasa M.; Marcos M.A.; Puig de la Bellacasa J.; Moreno A. **Opportunistic pulmonary infections in solid organ transplant recipients.** TRANSPL P. 44(9):2673-5. **I.F.: 1.00.**

28 Castel M.A.; Cartañá R.; Cardona M.; Pereda D.; Hernández M.; Sandoval E.; Castella M.; Pérez-Villa F. **Long-term outcome of high-urgency heart transplant patients with and without temporary ventricular assistdevice support.** TRANSPL P. 44(9):2642-4. **I.F.: 1.00.**

29 Andrea R.; Falces C.; Sanchis L., Sitges M.; Heras M.; Brugada J. **Diagnosis of heart failure with preserved or reduced ejection fraction in a one-stop clinic.** ATEN PRIM. 45(4):184-92. **I.F.: 0.63.**

30 Casals G.; Azzalini L.; Tomas C.; Marfa S.; Morales-Ruiz M.; Heras M.; Jimenez W.; Sionis A. **Admission B-type natriuretic peptide retains prognostic value in patients with acute coronary syndrome andpreserved left ventricular ejection fraction.** INT J CARDIOL. 158(3):459-60. **I.F.: 7.08.**

31 Alfonso F.; Timmis A.; Pinto F.J.; Ambrosio G.; Ector H.; Kulakowski P.; Vardas P.; Editors' Network European Society of Cardiology Task Force. **Conflict of interest policies and disclosure requirements among European Society of Cardiology NationalCardiovascular Journals.** HEART. 98(7):e1-7. **I.F.: 4.22.**

REVIEWS
I.F.: 1.20

1 Dantas A.P.; Fortes Z.B.; De Carvalho M.H. **Vascular disease in diabetic women: Why do they miss the female protection?** EXP DIABETES RES. 2012:570598. **I.F.: 1.20.**

EDITORIALS
I.F.: 2.53

1 Anguita M.; Worner F.; Domenech P.; Marín F.; Ortigosa J.; Pérez-Villacastín J.; Fernández-Ortiz A.; Alonso A.; Cequier A.; Comín J.; Heras M.; Pan M.; Alzueta J.; Arenal A.; Barón G.; Borrás X.; Bover R.; De la Figuera M.; Escobar C.; Fiol M.; Herreros B.; Merino J.L.; Mont L.; Murga N.; Pedrote A.; Quesada A.; Ripoll T.; Rodríguez J.; Ruiz M.; Ruiz R. **New evidence, new controversies: a critical review of the European Society of Cardiology 2010 clinical practiceguidelines on atrial fibrillation.** REV ESP CARDIOL. 65(1):7-13. **I.F.: 2.53.**

CLINICAL GUIDELINES
I.F.: 2.53

1 Grupo de Trabajo de SEC para Guía ESC2011 de SCASEST; Fernández-Ortiz A.; Pan M.; Alfonso F.; Arós F.; Barrabés J.A.; Bodí V.; Cequiera A.; García-Moll X.; Jiménez-Candil J.; López-Palop R.; Peña C.; Worner F.; Comité de Guías de Práctica Clínica de SEC; Alonso Gómez A.M.; Anguita M.; Cequier A.; Comín J.; Fernández-Ortiz A.; Pan M.; Worner F.; Alonso J.; Bardají A.; Barón-Esquivias G.; Bover R.; Angel-Ferrer J.; Goicolea J.; Gómez-Doblas J.J.; Iñiguez A.; Mainar V.; Marín F.; Pedreira M.; Roldán I.; Sabaté M.; Sánchez P.L.; Sanchis J. **Comments on the ESC guidelines for the management of acute coronary syndromes in patients presentingwithout persistent ST-segment elevation. A report of the Task Force of the Clinical Practice Guidelines Committeeof the Spanish Society of Cardiology.** REV ESP CARDIOL. 65(2):125-30. **I.F.: 2.53.**

MULTICENTRICS
I.F.: 9.33

1 Abizaid A.; Costa J.R. Jr; Banning A.; Bartorelli A.L.; Dzavik V.; Ellis S.; Gao R.; Holmes D.R. Jr; Jeong M.H.; Legrand V.; Neumann F.J.; Nyakern M.; Orlick A.; Spaulding C.; Worthley S.; Urban P.M.; e-SELECT Investigators. **The sirolimus-eluting Cypher Select coronary stent for the treatment of bare-metal and drug-eluting stentrestenosis: insights from the e-SELECT (Multicenter Post-Market Surveillance) registry.** JACC-CARDIOVASC INTE. 5(1):64-71. **I.F.: 6.8.**

2 Almenar L.; Segovia J.; Crespo-Leiro M.G.; Palomo J.; Arizón J.M.; González-Vílchez F.; Delgado J.; Spanish Heart Transplantation Teams. **Spanish registry on heart transplantation. 23rd official report of the Spanish Society of Cardiology Working Groupon Heart Failure and Heart Transplantation (1984-2011).** REV ESP CARDIOL. 65(11):1030-8. **I.F.: 2.53.**

GRANTS FOR RESEARCH IN PROGRESS

Heras M. **Heracles - Determinantes Genéticos y Ambientales de la Disfunción Vascular en la Hipertensión y Cardiopatía Isquémica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0009/0008. Duration: 01/01/2007 - 31/12/2013.

Heras M. **Células endoteliales circulantes y células progenitoras endoteliales en la enfermedad cardiovascular aguda. Correlación con la función endotelial y la evolución clínica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0272. Duration: 01/01/2009 - 10/02/2012.

Roque M. **Efecto del bloqueo del canal iónico Kv 1.3 en la restenosis y la vasculopatía del injerto.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00225. Duration: 01/01/2012 - 31/12/2014.

Perez-Villa F. **Insuficiencia cardiaca con fracción de eyección preservada: Análisis de la relación entre hipertensión pulmonar, disfunción endotelial periférica y metalopreteinasas circulantes.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01905. Duration: 01/01/2012 -31/12/2014.

Sabaté M. **Chronic total occlusions of human coronary arteries: from pathophysiology to long-term clinical implications of successful recanalization by means of percutaneous coronary intervention.** Sponsored by: La Marató TV3, 082130. Duration: 29/04/2010-31/12/2012.

DOCTORAL THESES

Sabaté M. **"Revascularización de las arterias coronarias ocluidas crónicas. Predictores de éxito angiográfico y papel de las nuevas técnicas de imagen en la sección de los pacientes."** PhD student: Victoria Martín Yuste. The thesis has obtained a special award.

Heras M.; Brugada J. **"Models d'integració entre cardiologia i atenció primària per millorar la pràctica clínica en els pacients amb cardiopaties cròniques".** PhD student: Carles Falces Salvador.

Heras M.; Sitges M. **Utilidad de las técnicas de imagen y los biomarcadores para el diagnóstico precoz de la afectación cardíaca en la enfermedad de chagas.** PhD student: Ana García Álvarez.

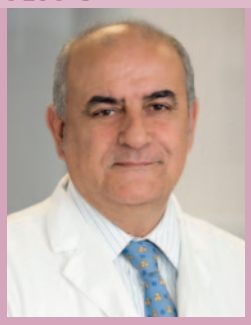
AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Arrhythmias, resynchronization and cardiac imaging

TEAM INVOLVED IN: REDINSCOR

GROUP MEMBERS



TEAM LEADER
Josep Brugada (Hospital Clínic)
Tel.: 93 227 55 51
E-mail: jbrugada@clinic.cat

GROUP LEADERS:
Lluis Mont (Hospital Clínic)
Marta Sitges (Hospital Clínic)
Gustavo Egea (UB)

RESEARCHERS:
Teresa M. de Caralt (Hospital Clínic)
Bárbara Vidal (Hospital Clínic)
José Tomás Ortiz (Hospital Clínic)
Rosario Jesús Perea (Hospital Clínic)
Antonio Berruezo (Hospital Clínic)
Mª Àngels Castel (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Montserrat Batlle (Fundació Clínic)
Montserrat Rigol (Fundació Clínic)
Núria Solanes (Fundació Clínic)

PRE-DOCTORAL RESEARCHERS:
Paola Berne (CNIC)
Eduard Guasch (Rio Ortega-IDIBAPS-ISC III)
David Andreu (Fundació Clínic)
Silvia Montserrat (Hospital Clínic - Fundació Clínic)
Juan Fernández-Armenta (Fundació Clínic - cvREMOD)
Ada Doltra (Fundació Clínic - cvREMOD)
Pablo Ramos (Hospital Clínic)
Esther Guiu (Fundació Clínic)
Felipe Bisbal Van Bylen (Hospital Clínic)
Pilar Cabanas (Beca SEC)
Cira Rubies (Fundació Clínic -FIS Inst. de Salut Carles III)

TECHNICIANS:
Nadia Castillo (Fundació Clínic)

NURSING STAFF:
Mariona Matas (Hospital Clínic)
Silvia Poyatos (Fundació Clínic)
Silvia Vidorreta (Fundació Clínic - iCARDEA)
Sara Hevia (Fundació Clínic - REDINSCOR)
Vanesa Hervas (Fundació Clínic)

ADMINISTRATIVE STAFF:
Neus Portella (Fundació Clínic)
Gemma Pros (Fundació Clínic)

STATISTICIAN:
Roger Borras (Fundació Clínic)

COLLABORATORS:
José Mª Tolosana (Hospital Clínic)
Elena Arbelo Laínez (Hospital Clínic)
Susanna Prat (Hospital Clínic)

VISITING SCIENTISTS:
Reinder Evertz (Beca EHRA, European Heart Rhythm Association)
M Emilce Trucco (Fellow Argentina)
Laura Cipolletta (Fellow Italiana)
Andrés A. Díaz Garzón (Fellow Argentino)

STRATEGIC OBJECTIVES

The aims for the coming year are fundamentally to go further in the six main research lines of the group: *genetic cardiovascular diseases, atrial fibrillation, cardiac resynchronization, ventricular tachycardias, and experimental models of etiological factors in atrial fibrillation, and Sports Cardiology.* Furthermore, we wish to continue promoting prospective multicenter projects without abandoning practical clinical research, to improve patient care. On the other hand, we will keep on working with the Bioengineering team at the UPF in modeling and software development for image processing.

MAIN LINES OF RESEARCH

1. Cardiovascular genetic diseases:

- The group is focused in recruiting patients and following them, in order to analyze prognosis of several genetic arrhythmias. The incorporation of Dr. Elena Arbelo will increase the activity. Furthermore, genetic testing will continue to be done in collaboration with the group of Dr. Ramón Brugada

2. Experimental models for the study of etiological factors in atrial fibrillation:

- We wish to continue analyzing the mechanisms conditioning the appearance of atrial and ventricular fibrosis in the rat model of resistance exercise.
- We are continuing collaboration with the Pneumology Sleep Unit and the Department of Physical Medicine of the Faculty of Medicine of Barcelona University, with the purpose of studying the repercussions of obstructive apnea upon the heart, using an experimental model in rats.
- We keep working on the experimental murine model of cardiac adaptation to chronic training that we developed to study the pathophysiology of atrial fibrillation. Our research focuses specially in the adaptation of the right ventricle.

3. Atrial fibrillation (AF):

- On one hand we are continuing the study of etiological factors in primary atrial fibrillation, specifically with the FUTURE study, which analyzes the role of undetected hypertension and physical exercise.
- SARA study (Spanish Atrial Fibrillation vs Antiarrhythmic Drugs).Comparative multicenter study of the efficacy of ablation versus drug treatment. Recruitment has been completed in two randomized, prospective studies designed to compare different ablation techniques.
- Several multicentric studies about new ablation techniques and new antiarrhythmic drugs are in course: EAST, FIRE AND ICE and RAFAELLO.

4. Ventricular tachycardia (VT):

- Multicenter study of antiarrhythmic drugs versus ablation in ischemic patients with automated implantable defibrillators.
- A prospective study evaluating the ejection fraction following ventricular extrasystolia ablation in patients with

RESEARCH GROUP
CARDIAC IMAGING

Team Leader: Marta Sitges (Hospital Clínic)

Our group has a pluridisciplinary team of people dedicated to non-invasive cardiac imaging and its application in the knowledge of and research into cardiovascular pathophysiology and therapy within the field of cardiac mechanics and cardiac arrhythmias, as well as other cardiovascular diseases. Our lines of research include:

- Application of cardiac imaging in the study of cardiac mechanics in patients with cardiac dyssynchrony treated with resynchronisation therapy. Application of an experimental porcine model as part of the cvREMOD project funded by the Centro para el Desarrollo Tecnológico e Industrial (CDTI) [Centre for Technological and Industrial Development].
- Study of atrial morphology and function in patients with atrial fibrillation and elite sportsmen and women. Project funded by FIS and the Spanish National Plan for R&D&i.
- Study of right ventricular morphology and function in elite athletes at rest and exercising. Project funded by the Spanish National Plan for R&D&i.
- Detection of latent ventricular dysfunction in different disorders such as Chagas disease, cirrhosis of the liver and cardiotoxicity caused by chemotherapy in blood disorders. Projects funded by the FIS.
- Analysis of post-infarction remodelling using three-dimensional echocardiography and cardiac magnetic resonance imaging. Project funded by the Spanish Cardiology Society.
- Utility of multi-slice CT in the diagnosis of chest pain in Accident and Emergency. Project funded by FIS.
- Non-invasive analysis of endothelial function through ultrasoundof the humeral artery in myocardial infarction patients with pulmonary hypertension. Projects funded by the FIS.

ventricular extrasystoles and structural heart disease.

- Different prospective studies are being conducted, evaluating the clinical usefulness of epicardial ablation in different substrates.
- Software has been developed to delimit the slow conduction zones within myocardial scars by means of magnetic resonance studies and their fusion with images obtained from three-dimensional navigation systems.
- Siemens has sponsored a prospective study to evaluate remodelling and sudden death risk predictive capacity with MRI and biomarker levels in patients with structural heart disease.

RESEARCH GROUP
CARDIAC RESYNCHRONISATION

Team Leader:
Lluis Mont (Hospital Clínic)

Our group is carrying out research into the application and results of cardiac resynchronisation techniques. Several studies are currently underway:

- Following recruitment in the SPARE III study, which is analysing the results of AV-node ablation in patients with atrial fibrillation receiving resynchronisation. Subsidy: Fondo de Investigación Sanitaria (FIS) [Health Research Fund], Instituto de Saludo Carlos III (PS09/01500).
- TRICHAMPION multicentre study on ablation and desynchronisation in patients with hypertrophic cardiomyopathy.
- Studies on optimisation of electrocardiographic resynchronisation: BEST. Subsidy: Fondo de Investigación Sanitaria (FIS) [Health Research Fund], Instituto de Salud Carlos III(PS10/01569).

RESEARCH GROUP
MEMBRANE TRAFFIC

Team Leader:
Gustavo Egea (UB)

The objective of this group is to understand the principles that control and regulate transport of the membrane components (lipids and proteins) within the cell. In particular, we are investigating the interaction of the transport intermediaries (vesicles and tubules) with the actin cytoskeleton and its associated proteins and regulators (myosins and Rho GTPases). We are also exploring the way in which lipid homeostasis (particularly referred to diacylglycerol) participates in the organization and traffic of membranes and in the formation of transport intermediaries.
Lastly, we wish to establish the physiopathological bases whereby ethanol alters nerve cell function and the mechanism underlying internalization of the receptors of cytokines such as TGF-beta in the smooth muscle cells of the coronary vessels in cardiovascular patients.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	93.71	27	13	4
2011	120.18	27	11	8
2012	105.86	24	14	3

ORIGINALS
I.F.: 105.86

1 Boersma L.V.A.; Castella M.; Van Boven W.; Berruezo A.; Yilmaz A.; Nadal M.; Sandoval E.; Calvo N.; Brugada J.; Kelder J.; Wijffels M.; Mont L. **Atrial Fibrillation Catheter Ablation Versus Surgical Ablation Treatment (FAST) A 2-Center Randomized Clinical Trial.** CIRCULATION. 125 (1): 23-30. **I.F.: 14.74.**

2 Berruezo A.; Fernandez-Armenta J.; Mont L.; Andreu D.; Trucco E.; Evertz R.; Matas M.; Tolosana J.M.; Arbelo E.; Brugada J. **Scar Dechanneling in patients with chronic myocardial infarction and ventricular tachycardia.** EUROPEAN HEART JOURNAL. 33:188-188. **I.F.: 10.49.**

3 Bisbal F.; Guiu E.; Calvo N.; Borras R.; Arbelo E.; Marin D.; Tolosana J.M.; Berruezo A.; Brugada J.; Mont L. **Sphericity index: a new method to assess left atrial remodelling. Impact in the outcome of atrial fibrillation ablation.** EUROPEAN HEART JOURNAL. 33:221-221. **I.F.: 10.49.**

4 Herczku C.; Berruezo A.; Andreu D.; Fernandez-Armenta J.; Mont L.; Borras R.; Arbelo E.; Tolosana J.M.; Trucco E.; Rios J.; Brugada J. **Mapping Data Predictors of a Left Ventricular Outflow Tract Origin of Idiopathic Ventricular Tachycardia With V-3 Transition and Septal Earliest Activation.** CIRCULATION-ARRHYTHMIA AND ELECTROPHYSIOLOGY. 5:484-491. **I.F.: 6.46.**

5 Berruezo A.; Fernandez-Armenta J.; Mont L.; Zeljko H.; Andreu D.; Herczku C; Boussy T.; Tolosana J.M.; Arbelo E.; Brugada J. **Combined Endocardial and Epicardial Catheter Ablation in Arrhythmogenic Right Ventricular Dysplasia Incorporating Scar Dechanneling Technique.** CIRCULATION-ARRHYTHMIA AND ELECTROPHYSIOLOGY. 5 (1): 111-121. **I.F.: 6.46.**

6 Tolosana J.M.; Martin Arnau A.; Hernandez Madrid A.; Macias A.; Fernandez Lozano I.; Osca J.; Quesada A.; Toquero J.; Matia Frances R.; Garcia Bolao I.; Berruezo A.; Sitges M.; Gimenez Alcala M.; Brugada J.; Mont L. **Cardiac resynchronization therapy in patients with permanent atrial fibrillation. Is it mandatory to ablate the atrioventricular junction to obtain a good response?** EUROPEAN JOURNAL OF HEART FAILURE. 14 (6): 635-641. **I.F.: 4.90.**

7 Bogale N.; Priori S.; Cleland J.G.F.; Brugada J.; Linde C.; Auricchio A.; Van Veldhuisen D.J.; Limbourg T.; Gitt A.; Gras D.; Stellbrink C.; Gasparini M.; Metra M.; Derumeaux G.; Gadler F.; Buga L.; Dickstein K. **The European CRT Survey: 1 year (9-15 months) follow-up results.** EUROPEAN JOURNAL OF HEART FAILURE. 14 (1): 61-73. **I.F.: 4.90.**

8 De Craene M.; Piella G.; Camara O.; Duchateau N.; Silva E.; Doltra A.; D'hooge J.; Brugada J.; Sitges M.; Frangi A.F. **Temporal diffeomorphic free-form deformation: Application to motion and strain estimation from 3D echocardiography.** MEDICAL IMAGE ANALYSIS. 16 (2): 427-450. **I.F.: 4.42.**

9 Brignole M.; Botto G.L.; Mont L.; Oddone D.; Iacopino S.; De Marchi G.; Campoli M.; Sebastiani V.; Vincenti A.; Medina D.G.; Asensi J.O.; Mocini A.; Grovale N.; De Santo T.; Menozzi C. **Predictors of clinical efficacy of 'Ablate and Pace' therapy in patients with permanent atrial fibrillation.** HEART. 98 (4): 297-302. **I.F.: 4.22.**

10 Calvo N.; Brugada J.; Sitges M.; Mont L. **Atrial fibrillation and atrial flutter in athletes.** BRITISH JOURNAL OF SPORTS MEDICINE. 46:37-43. **I.F.: 4.14.**

11 Wilson M.G.; Sharma S.; Carre F.; Charron P.; Richard P.; O'Hanlon R.; Prasad S.K.; Heidbuchel H.; Brugada J.; Salah O.; Sheppard M.; George K.P.; Whyte G.; Hamilton B.; Chalabi H. **Significance of deep T-wave inversions in asymptomatic athletes with normal cardiovascular examinations: practical solutions for managing the diagnostic conundrum.** BRITISH JOURNAL OF SPORTS MEDICINE. 46:51-58. **I.F.: 4.14.**

12 Andreu D.; Berruezo A.; Fernandez-Armenta J.; Herczku C.; Borras R.; Tomas Ortiz-Perez J.; Mont L.; Brugada J. **Displacement of the target ablation site and ventricles during premature ventricular contractions: Relevance for radiofrequency catheter ablation.** HEART RHYTHM. 9 (7): 1050-1057. **I.F.: 4.10.**

13 Garcia-Rua V.; Otero M.F.; Lear P.V.; Rodriguez-Penas D.; Feijoo-Bandin S.; Noguera-Moreno T.; Calaza M.; Alvarez-Barred M.; Mosquera-Leal A.; Parrington J.; Brugada J.; Portoles M.; Rivera M.; Gonzalez-Juanatey J.R.; Lago F. **Increased Expression of Fatty-Acid and Calcium Metabolism Genes in Failing Human Heart.** PLOS ONE. 7 (6):-. **I.F.: 4.09.**

14 Halperin I.; Aller J.; Varela C.; Mora M.; Abad A.; Doltra A.; Estrella Santos A.; Batista E.; Garcia-Pavia P.; Sitges M.; Mirelis J.G.; Lucas T.; Puig-Domingo M. **No clinically significant valvular regurgitation in long-term cabergoline treatment for prolactinoma.** CLINICAL ENDOCRINOLOGY. 77 (2): 275-280. **I.F.: 3.17.**

15 Avellana P.; Segovia J.; Ferrero A.; Vazquez R.; Brugada J.; Borras X.; Alonso-Pulpon L.; Cinca J. **Anticoagulation Therapy in Patients With Heart Failure Due to Systolic Dysfunction and Sinus Rhythm: Analysis of REDINSCOR Registry.** REVISTA ESPANOLA DE CARDIOLOGIA. 65:705-712. **I.F.: 2.53.**

16 Calvo N.; Nadal M.; Berruezo A.; Andreu D.; Arbelo E.; Tolosana J.M.; Guasch E.; Matiello M.; Matas M.; Alsina X.; Sitges M.; Brugada J.; Mont L. **Improved Outcomes and Complications of Atrial Fibrillation Catheter Ablation Over Time: Learning Curve, Techniques, and Methodology.** REVISTA ESPANOLA DE CARDIOLOGIA. 65 (2): 131-138. **I.F.: 2.53.**

17 Duchateau N.; Doltra A.; Silva E.; De Craene Y.; Piella G.; Castel M.A.; Mont L.; Brugada J.; Frangi A.F.; Sitges M. **Atlas-based quantification of myocardial motion abnormalities: added-value for understanding the effect of cardiac resynchronization therapy.** ULTRASOUND IN MEDICINE AND BIOLOGY. 38:2186-2197. **I.F.: 2.29.**

18 Calkins H.; Kuck K.H.; Cappato R.; Brugada J.; Camm A.J.; Chen S.A.; Crijns H.J.G.; Damiano R.J.; Davies D.W.; DiMarco J.; Edgerton J.; Ellenbogen K.; Ezekowitz M.D.; Haines D.E.; Haissaguerre M.; Hindricks G.; Iesaka Y.; Jackman W.; Jalife J.; Jais P.; Kalman J.; Keane D.; Kim Y.H.; Kirchhof P.; Klein G.; Kottkamp H.; Kumagai K.; Lindsay B.D.; Mansour M.; Marchlinski F.E.; McCarthy P.M.; Mont J.L.; Morady F.; Nademanee K.; Nakagawa H.; Natale A.; Nattel S.; Packer D.L.; Pappone C.; Prystowsky

E.; Raviele A.; Reddy V.; Ruskin J.N.; Shemin R.J.; Tsao H.M.; Wilber D. **2012 HRS/EHRA/ECAS expert consensus statement on catheter and surgical ablation of atrial fibrillation: recommendations for patient selection, procedural techniques, patient management and follow-up, definitions, endpoints, and research trial design.** EUROPACE. 33 (2): 171-257. **I.F.: 1.98.**

19 Calkins H.; Kuck K.H.; Cappato R.; Brugada J.; Camm A.J.; Chen S.A.; Crijns H.J.G.; Damiano R.J.; Davies D.W.; DiMarco J.; Edgerton J.; Ellenbogen K.; Ezekowitz M.D.; Haines D.E.; Haissaguerre M.; Hindricks G.; Iesaka Y.; Jackman W.; Jalife J.; Jais P.; Kalman J.; Keane D.; Kim Y.H.; Kirchhof P.; Klein G.; Kottkamp H.; Kumagai K.; Lindsay B.D.; Mansour M.; Marchlinski F.E.; McCarthy P.M.; Mont J.L.; Morady F.; Nademanee K.; Nakagawa H.; Natale A.; Nattel S.; Packer D.L.; Pappone C.; Prystowsky E.; Raviele A.; Reddy V.; Ruskin J.N.; Shemin R.J.; Tsao H.M.; Wilber D.; Ad N.; Cummings J.; Gillinov A.M.; Heidbuchel H.; January C.; Lip G.; Markowitz S.; Nair M.; Ovsyshcher I.E.; Pak H.N.; Tsuchiya T.; Shah D.; Siong T.W.; Vardas P.E. **2012 HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation: Recommendations for Patient Selection, Procedural Techniques, Patient Management and Follow-up, Definitions, Endpoints, and Research Trial Design A rep.** EUROPACE. 14 (4): 528-590. **I.F.: 1.98.**

20 Fernandez-Armenta J.; Berruezo A. Mont L.; Sitges M.; Andreu D.; Silva E.; Ortiz-Perez J.T.; Tolosana J.M.; De Caralt T.M.; Jesus Perea R.; Calvo N.; Trucco E.; Borras R.; Matas M.; Brugada J. **Use of myocardial scar characterization to predict ventricular arrhythmia in cardiac resynchronization therapy.** EUROPACE. 14:1578-1586. **I.F.: 1.98.**

21 Arbelo E.; Brugada J.; Hindricks G.; Maggioni A.; Tavazzi L.; Vardas P.; Anselme F.; Inama G.; Jais P.; Kalarus Z.; Kautzner J.; Lewalter T.; Mairesse G.; Perez-Villacastin J.; Riahi S.; Taborsky M.; Theodorakis G.; Trines,S. **ESC-EURObservational Research Programme: the Atrial Fibrillation Ablation Pilot Study, conducted by the European Heart Rhythm Association.** EUROPACE. 14 (8): 1094-1103. **I.F.: 1.98.**

22 Dubner S.; Auricchio A.; Steinberg J.S.; Vardas P.; Stone P.; Brugada J.; Piotrowicz R.; Hayes D.L.; Kirchhof P.; Breithardt G.; Zareba W.; Schuger C.; Aktas M.K.; Chudzik M.; Mittal S.; Varma N. **ISHNE/EHRA expert consensus on remote monitoring of cardiovascular implantable electronic devices (CIEDs).** EUROPACE. 14 (2): 278-293. **I.F.: 1.98.**

23 Bayes de Luna A.; Brugada J.; Baranchuk A.; Borggrefe M.; Breithardt G.; Goldwasser D.; Lambiase P.; Riera A.P.; Garcia-Niebla J.; Pastore C.; Oreto G.; McKenna W.; Zareba W.; Brugada R.; Brugada P. **Current electrocardiographic criteria for diagnosis of Brugada pattern: a consensus report.** JOURNAL OF ELECTROCARDIOLOGY. 45:433-442. **I.F.: 1.14.**

24 Femenia F.; Sarquella-Brugada G.; Brugada J. **Single-catheter radiofrequency ablation of a permanent junctional reciprocating tachycardia in a premature neonate.** CARDIOLOGY IN THE YOUNG. 22:606-609. **I.F.: 0.76.**

REVIEWS
I.F.: 66.66

1 Berne P.; Brugada J. **Brugada Syndrome 2012.** CIRCULATION JOURNAL. 76 (7): 1563-1571. **I.F.: 3.77.**

2 Dubner S.; Auricchio A.; Steinberg J.S.; Vardas P.; Stone P.; Brugada J.; Piotrowicz R.; Hayes D.L.; Kirchhof P.; Breithardt G.; Zareba W.; Schuger C.; Aktas M.K.; Chudzik M.; Mittal S.; Varma N. **ISHNE/EHRA Expert Consensus on Remote Monitoring of Cardiovascular Implantable Electronic Devices (CIEDs).** ANNALS OF NONINVASIVE ELECTROCARDIOLOGY. 17 (1): 36-56. **I.F.: 2.00.**

3 Anguita M.; Worner F.; Domenech P.; Marín F.; Ortigosa J.; Pérez-Villacastín J.; Fernández-Ortiz A.; Alonso A.; Cequier A.; Comín J.; Heras M.; Pan M.; Alzueta J.; Arenal A.; Barón G.; Borrás X.; Bover R.; De la Figuera M.; Escobar C.; Fiol M.; Herreros B.; Merino J.L.; Mont L.; Murga N.; Pedrote A.; Quesada A.; Ripoll T.; Rodríguez J.; Ruiz M.; Ruiz R. **New evidence, new controversies: a critical review of the European Society of Cardiology 2010 clinical practiceguidelines on atrial fibrillation.** REV ESP CARDIOL. 65(1):7-13. **I.F.: 2.53.**

4 Healey J.S.; Connolly S.J.; Gold M.R.; Israel C.W.; Van Gelder I.C.; Capucci A.; Lau C.P.; Fain E.; Yang S.; Bailleul C.; Morillo C.A.; Carlson M.; Themeles E.; Kaufman E.S.; Hohnloser S.H.; ASSERT Investigators. **Subclinical atrial fibrillation and the risk of stroke.** NEW ENGL J MED. 366(2):120-9. **I.F.: 53.30.**

5 Calvo N.; Nadal M.; Berruezo A.; Andreu D.; Arbelo E.; Tolosana J.M.; Guasch E.; Matiello M.; Matas M.; Alsina X.; Sitges M.; Brugada J.; Mont L. **Improved outcomes and complica-**

tions of atrial fibrillation catheter ablation over time: learning curve, techniques, and methodology. REV ESP CARDIOL. 65(2):131-8. **I.F.: 2.53.**

6 Moya A.; Sancho-Tello M.J.; Arenal A.; Fidalgo M.L.; Brugada R.; Martínez Ferrer J.; Merino J.L.; Ruíz Mateas F.; Mont J.L. Innovations in Heart Rhythm Disturbances: Cardiac Electrophysiology, Arrhythmias, and Cardiac Pacing. REVISTA ESPANOLA DE CARDIOLOGIA. 66(2):116-123. **I.F.: 2.53.**

EDITORIALS
I.F.: 54.69

1 Taylor J.; Bodi V.; Van Deel E.D.; Garcia-Dorado D.; Crespo-Leiro M.G.; Berruezo A: Funding: Spanish Society of Cardiology Research Grants. CIRCULATION. 126:F91-F95. **I.F.: 14.74.**

2 Fernandez-Armenta J.; Berruezo A.; Ortiz-Perez J.T.; Mont L.; Andreu D.; Herczku C.; Boussy T.; Brugada J. Improving Safety of Epicardial Ventricular Tachycardia Ablation Using the Scar Dechanneling Technique and the Integration of Anatomy, Scar Components, and Coronary Arteries Into the Navigation System. CIRCULATION. 125 (11): E466-E468. **I.F.: 14.74.**

3 Mont L.; Nicholls M. Spotlight: Llus Mont, MD, PhD, FESC. CIRCULATION. 125 (10): F55-F58. **I.F.: 14.74.**

4 Brugada J. Psychosis, depression, and high risk for sudden cardiac death: time for co-operation between psychiatrists and cardiologists. EUROPEAN HEART JOURNAL. 33 (6): 687-688. **I.F.: 10.48.**

CLINICAL GUIDELINES
I.F.: 23.05

1 Kirchhof P.; Lip G.Y.; Van Gelder I.C.; Bax J.; Hylek E.; Kaab S.; Schotten U.; Wegscheider K.; Boriani G.; Brandes A.; Ezekowitz M.; Diener H.; Haegeli L.; Heidbuchel H.; Lane D.; Mont L.; Willems S.; Dorian P.; Aunes-Jansson M.; Blomstrom-Lundqvist C.; Borentain M.; Breitenstein S.; Brueckmann M.; Cater N.; Clemens A.; Dobrev D.; Dubner S.; Edvardsson N.G.; Friberg L.; Goette A.; Gulizia M.; Hatala R.; Horwood J.; Szumowski L.; Kappenberger L.; Kautzner J.; Leute A.; Lobban T.; Meyer R.; Millerhagen J.; Morgan J.; Muenzel F.; Nabauer M.; Baertels C.; Oeff M.; Paar D.; Polifka J.; Ravens U.; Rosin L.; Stegink W.; Steinbeck G.; Vardas P.; Vincent A.; Walter M.; Breithardt G.; Camm A.J. Comprehensive risk reduction in patients with atrial fibrillation: emerging diagnostic and therapeutic options--areport from the 3rd Atrial Fibrillation Competence NETwork/European Heart Rhythm Association consensusconference. EUROPACE. 14(1):8-27. **I.F.: 1.98.**

2 European Heart Rhythm Association (EHRA); European Society of Cardiology (ESC); Heart Rhythm Society; Heart Failure Society of America (HFSA); American Society of Echocardiography (ASE); American Heart Association (AHA); European Association of Echocardiography (EAE) of ESC; Heart Failure Association of ESC (HFA), Daubert J.C.; Saxon L.; Adamson P.B.; Auricchio A.; Berger R.D.; Beshai J.F.; Breithard O.; Brignole M.; Cleland J.; DeLurgio D.B.; Dickstein K., Exner D.V.;Gold M.; Grimm R.A.; Hayes D.L.; Israel C.; Leclercq C.; Linde C.; Lindenfeld J.; Merkely B.; Mont L.; Murgatroyd F.; Prinzen F.; Saba S.F.; Shinbane J.S.; Singh J.; Tang A.S.; Vardas P.E.; Wilkoff B.L.; Zamorano J.L.; Anand I.; Blomström-Lundqvist C.; Boehmer J.P.; Calkins H.; Cazeau S.; Delgado V.; Estes N.A.; Haines D.; Kusumoto F.; Leyva P.; Ruschitzka F.; Stevenson L.W.; Torp-Pedersen C.T. 2012 EHRA/HRS expert consensus statement on cardiac resynchronization therapy in heart failure: implant andfollow-up recommendations and management. EUROPACE. 14(9):1236-86. **I.F.: 1.98.**

3 European Heart Rhythm Association; European Society of Cardiology; Heart Rhythm Society; Heart Failure Society of America; American Society of Echocardiography; American Heart Association; European Association of Echocardiography; Heart Failure Association, Daubert J.C.; Saxon L.; Adamson P.B.; Auricchio A.; Berger R.D.; Beshai J.F.; Breithard O.; Brignole M.; Cleland J.; Delurgio D.B.; Dickstein K.; Exner D.V.; Gold M.; Grimm R.A.; Hayes D.L.; Israel C.; Leclercq C.; Linde C.; Lindenfeld J.; Merkely B.; Mont L.; Murgatroyd F.; Prinzen F.; Saba S.F.; Shinbane J.S.; Singh J.; Tang A.S.; Vardas P.E.; Wilkoff B.L.; Zamorano J.L. 2012 EHRA/HRS expert consensus statement on cardiac resynchronization therapy in heart failure: implant andfollow-up recommendations and management. HEART RHYTHM. 9(9):1524-76. **I.F.: 4.10.**

4 Camm A.J.; Lip G.Y.; De Caterina R.; Savelieva I.; Atar D.; Hohnloser S.H.; Hindricks G.; Kirchhof P.; ESC Committee for Practice Guidelines-CPG; Document Reviewers. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESC Guidelines for the management of atrial fibrillation--developed with the special contribution of the European Heart Rhythm Association. EUROPACE. 14(10):1385-413. **I.F.: 1.98.**

5 Camm A.J.; Lip G.Y.; De Caterina R.; Savelieva I.; Atar D.; Hohnloser S.H.; Hindricks G.; Kirchhof P.; ESC Committee for Practice Guidelines (CPG), Bax J.J.; Baumgartner H.; Ceconi C.; Dean V.; Deaton C.; Fagard R.; Funck-Brentano C.; Hasdai D.; Hoes A.; Kirchhof P.; Knuuti J.; Kolh P.; McDonagh T.; Moulin C.; Popescu B.A.; Reiner Z.; Sechtem U.; Sirnes P.A.; Tendera M.; Torbicki A.; Vahanian A.; Windecker S.; Document Reviewers; Vardas P.; Al-Attar N.; Alfieri O.; Angelini A.; Blömstrom-Lundqvist C.; Colonna P.; De Sutter J.; Ernst S.; Goette A.; Gorenek B.; Hatala R.; Heidbüchel H.; Heldal M.; Kristensen S.D.; Kolh P.; Le Heuzey J.Y.; Mavrakis H.; Mont L.; Filardi P.P.; Ponikowski P.; Prendergast B.; Rutten F.H.; Schotten U.; Van Gelder I.C.; Verheugt F.W. **2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESCGuidelines for the management of atrial fibrillation. Developed with the special contribution of the European Heart Rhythm Association.** EUROPEAN HEART JOURNAL. 33(21):2719-47. **I.F.: 10.48.**

6 Autores/miembros del Grupo de Trabajo; Camm A.J.; Lip G.Y.; Caterina R.D.; Savelieva I.; Atar D.; Hohnloser S.H; Hindricks G.; Kirchhof P.; Comité de la ESC de Guías para la Práctica Clínica (CGPC); Bax J.J.; Baumgartner H.; Ceconi C.; Dean V.; Deaton C.; Fagard R.; Funck-Brentano C.; Hasdai D.; Hoes A.; Kirchhof P.; Knuuti J.; Kolh P.; McDonagh T.; Moulin C.; Popescu B.A.; Reiner Z.; Sechtem U.; Anton Sirnes P.; Tendera M.; Torbicki A.; Vahanian A.; Windecker S.; Revisores del documento; Vardas P.; Al-Attar N.; Alfieri O.; Angelini A.; Blömstrom-Lundqvist C.; Colonna P.; De Sutter J.; Ernst S.; Coette A.; Gorenek B.; Hatala R.; Heidbüchel H.; Heldal M.; Dalby Kristensen S.; Kolh P.; Le Heuzey J.Y.; Mavrakis H.; Mont L.; Perrone Filardi P.; Ponikowski P.; Prendergast B.; Rutten F.H.; Schotten U.; Van Gelder I.C.; Verheugt F.W. **Actualización de las guías de la Sociedad Europea de Cardiología (ESC) para el manejo de la fibrilación auriculardе 2010 Elaborada en colaboración con la Asociación Europea del Ritmo Cardiaco.** REVISTA ESPANOLA DE CARDIOLOGIA. 66(1):54.e1-54. **I.F.: 2.53.**

GRANTS FOR RESEARCH IN PROGRESS

Berruezo A. **Identificación, análisis y eliminación de canales de conducción para tratar arritmias ventriculares.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/02049. Duration: 01/01/2012 -31/12/2014.

Brugada J. **Arítmies i estimulació cardiaca.** Sponsored by: AGAUR 2009_SGR_1104. Duration: 05/08/2009 -31/12/2013.

Brugada J. **An Intelligent Platform for Personalized Remote Monitoring of the Cardiac Patients with Electronic Implant Devices.** Sponsored by: European Commission 248240. Duration: 01/02/2010 -31/01/2013.

Brugada J. **Integración de las diferentes técnicas de imagen médica en una única imagen multimodal. Desarrollo de distintos modelos de aplicación. Estudios electrofisiológicos y de imagen cardiaca.** Sponsored by: CDTI CDTEAM1. Duration: 11/01/2006 - 11/01/2013.

Brugada J. cvREMOD: **Convergencia de tecnologías médicas para la gestión integral del remodelado vascular.** Sponsored by: CDTI 09/370. Duration: 09/09/2009 - 31/12/2012.

Brugada J. REDINSCOR - **Red de Investigación en Insuficiencia Cardíaca en España.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0003/0008. Duration: 01/01/2007 - 31/12/2013.

Brugada J. **Mecanismos y Reversibilidad de la Fibrosis Miocárdica Asociada al Ejercicio.** Sponsored by: Ministerio de Economía y Competitividad DEP2009_12455. Duration: 01/01/2010 - 31/12/2012.

Brugada J. **Sudden cardiac death: definig clinical algorithms for a thorough investigation.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad CNIC-03-2008. Duration: 21/11/2008 - 30/06/2013.

Castel M.A. **Optimización de la terapia de resincronización cardiaca mediante el QRS: valoración del efecto agudo y la respuesta a medio plazo.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01569. Duration: 01/01/2011-31/12/2013.

Egea G. **La activación crónica de la via del TGF-BETA en el síndrome de Marfan: Desregulación del tráfico intracelular y la matriz extracelular.** Sponsored by: Fundación Ramón Areces CIVP16A1858. Duration: 27/06/2012-26/06/2015.

Egea G. **Red Nacional sobre Integración funcional del tráfico de membranas, la señalización intracelular y la dinámica del citoesqueleto.** Sponsored by: Ministerio de Ciencia e Innovación (MICINN), BFU2008-03958-E/BMC. Duration: 01/11/2009-30/12/2012.

Egea G. **La dinámica de la actina y la homeostasis del diacilglicerol en la organización del aparato de Golgi.** Sponsored by: Ministerio de Ciencia e

Innovación (MICINN), BFU200907186 (BMC). Duration: 01/01/2009-31/12/2012.

Mont L. **Estudi de la teràpia de resincronització a Catalunya.** Sponsored by: AATRM 154/4/2008. Duration: 01/12/2009 - 31/12/2012.

Mont L. **Estudio del remodelado miocárdico en un modelo animal crónico de síndrome de apnea-hipopnea del sueño.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/00834. Duration: 01/01/2011 - 31/12/2013.

Sitges M. **Efecto del entrenamiento crónico sobre el ventrículo derecho:análisis por imagen de la deformación miocárdica en humanos e histopatología en modelos experimentales murinos.** Sponsored by: Ministerio de Economía y Competitividad DEP2010-20565. Duration: 01/01/2011-31/12/2013.

Vidal B. **Factores anatómicos y tisulares predictores de éxito en la ablación de la fibrilación auricular.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/02003. Duration: 01/01/2012 -31/12/2014.

DOCTORAL THESES

Brugada J. **Models d'integració entre cardiologia i atenció primària per millorar la pràctica clínica en els pacients amb cardiopaties cròniques.** PhD student: Carles Falces Salvador.

Mont L. **Estudi de la Fibril·lació Auricular: de la fisiopatologia al tractament.** PhD student: Eduard Guasch Casany.

Egea G. **El citoesqueleto de espectrina y el complejo de golgi. Implicaciones en su arquitectura y funcionalidad en el transporte secretor.** PhD student: Laia Salcedo Sicilia.

Sitges M. **Efecto cardioprotector del metropolol en la reperfusión coronaria: analisis del miocardio isquémico en riesgo mediante resonancia magnética cardiaca.** PhD student: Susanna Prat Gonzalez.

Sitges M. **Utilidad de las técnicas de imagen y los biomarcadores para el diagnóstico precoz de la afectación cardíaca en la enfermedad de chagas.** PhD student: Ana García Álvarez.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Nephro-urological diseases and kidney transplantation

GROUP MEMBERS

TEAM LEADER
Josep Mª Campistol (Hospital Clínic)
Tel.: 93 227 54 00 (Ext.: 3395)
E-mail: jmcampis@clinic.cat

RESEARCHERS:
Pilar Arrizabalaga (Hospital Clínic)
Albert Botey (Hospital Clínic)
Aleix Cases (Hospital Clínic)
Guadalupe Ercilla (Hospital Clínic)
Georgina Hotter (IIBB-CSIC)
Jaume Martorell (Hospital Clínic)
Eduard Mirapeix (Hospital Clínic)
Federico Oppenheimer (Hospital Clínic)
Esteban Poch (Hospital Clínic)
Luis F. Quintana (Hospital Clínic)
Fritz Diekmann (Hospital Clínic)
Ignacio Revuelta (Hospital Clínic - IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Elisenda Banón-Maneus (Fundació Clínic)
Jordi Rovira (Fundació Clínic)
María José Ramírez-Bajo (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Joan Nistal (Fundació Clínic)
Michaela Jung (IIBB-CSIC)
Marina Ventayol (IIBB-CSIC)
Chrysa Mastora (IIBB-CSIC)
Marta Arias (Hospital Clínic)
Miquel Blasco (Hospital Clínic)
Maria N. Martina (Hospital Clínic)
Sebastián Azorín (Hospital Clínic)
Sara Herrero (Fundació Clínic)
Marta Lazo (Fundació Clínic)

TECHNICIANS:
Maite del Hierro (IIBB-CSIC)
Daniel Moya-Rull (Fundació Clínic)
Natalia Hierro (IDIBAPS)

COLLABORATORS:
Celia Bádenas (Fundació Clínic)
Anna Sola (IIBB-CSIC)
José Luis Viñas (IIBB-CSIC)
Eugenia Vinuesa (IIBB-CSIC)
Nestor Fontseré (Hospital Clínic)
Francesc Maduell (Hopsital Clínic)
Federico Cofán (Hospital Clínic)
Nuria Esforzado (Hospital Clínic)
Vicenç Torregrosa (Hospital Clínic)
Maria J. Ricart (Hospital Clínic)
Manel Vera (Hospital Clínic)

TEAM INVOLVED IN:

redinRen

STRATEGIC OBJECTIVES

The multidisciplinary nature of our research group stems from well-balanced collaboration between clinicians and medical researchers, biologists, biochemists, veterinarians and specialist technicians with extensive experience in all areas of the research into the natural history of renal disease (clinical nephrology, dialysis and transplant). This creates the perfect setting for translational research, with a twoway flow of communication between bench and bedside.
Since the setting up 6 years ago of the Laboratori Experimetal en Nefrologia i Transplantament (LENIT) [Experimental Laboratory for Nephrology and Transplantation] the clinical research and the different clinical trials have moved towards focusing on more fundamental aspects and concentrating on a translational approach.
Our research focuses on the study of fibrosis mechanisms, regenerative techniques and the search for biomarkers through urinary proteomics in chronic kidney disease and interstitial fibrosis and tubular atrophy in renal transplant. We are also studying the impact of the immunosuppressive medication used in renal transplant, both in terms of the nephrotoxicity induced by calcineurin inhibitors and the beneficial and harmful effects of mTOR inhibitors on left ventricular hypertrophy and proteinuria respectively. The strategic objectives of our research group are complemented by study of the importance of cardiovascular disease and cancer in renal and solid-organ transplant patients.

MAIN LINES OF RESEARCH

1. Cardiovascular and Renal Disease:

- Evaluation of cardiovascular risk and accelerated atherosclerosis in renal patients.
- Study of left ventricular hypertrophy in chronic kidney disease using an experimental model of chronic kidney disease (5/6 nephrectomy).
- Effect of the use of mTOR inhibitors on the prevention of atherosclerosis and left ventricular hypertrophy.
- Dyslipidaemia and cardiovascular risk in renal transplant. Apolipoprotein polymorphisms.
- Endothelial dysfunction and effect of the uraemic environment on endothelial cells.
- Vascular calcification according to diet and the different pharmacological strategies for the control of calcium/phosphorus metabolism and renal osteodystrophy.
- Anaemia of renal origin and erythropoiesis-stimulating proteins in uraemia.

2. Fibrosis mechanisms and the search for biomarkers in chronic kidney disease (CKD) and interstitial fibrosis and tubular atrophy (IFTA) in renal transplant:

- **Molecular mechanisms of fibrogenesis.**
- Etiopathogenic factors using a Pglycoprotein knockout mouse model and by culture of tubular epithelial cells in an attempt to define the role of P-glycoprotein in the development of calcineurin inhibitor-induced nephrotoxicity.
- **Diagnostic Approach:** Through the analysis of the urinary proteome using 2D-gel and fingerprinting techniques, we are attempting to find early markers of renal fibrosis and IFTA, as well as in primary renal diseases such as systemic lupus erythematosus and membranous nephropathy. Study of proteomics in the dialysis patient under different renal purification techniques.
- **Therapeutic Strategies.**

3. Influence of mTOR inhibition on renal function and humoral response in renal transplant patients and experimental models of renal disease:

- **The role of mTOR inhibition in the development of proteinuria and histological lesions in an experimental model of renal failure** (5/6 nephrectomy). Study of the influence of mTOR inhibition, introduced at different times, on renal function, proteinuria, histological lesions, VEGF expression and its receptors.
- Analysis of the **harmful side effects** associated with the use of mTOR inhibitors: formation of oedema, anaemia, lung involvement, testicular dystrophy, diabetes. The group has various experimental models for determining the mechanisms that lead to each of these pathophysiological situations.
- Study of the effect of mTOR inhibitors in the **humoral immune response in renal transplant** through study of the effect of a number of immunomodulating drugs, alone or in combination with rapamycin, on the B-lymphocyte and humoral rejection. In vitro and in vivo experimental models of chronic humoral rejection in rats and in an experimental model of systemic lupus erythematosus.

4. Cancer and renal transplant:

- **Clinical and molecular characterisation of post-transplant cancers.** Study of tumour behaviour according to the immunosuppressive regimen used, as well as the direct oncogenic effect of the immunosuppressive drugs, using the immunohistochemical characterisation of the tumours in a renal transplant population compared to a control population. Differences between the two populations in the TGF-, VEGF and PI3K/AKT/mTOR pathways in adenocarcinoma of the colon and skin cancer and the existence of KRAS mutations in the former and alteration in p53 expression in the latter, according to treatment with calcineurin or mTOR inhibitors.
- **KO mouse experimental model for p53.**
- **Role of the dendritic cells in the development of skin cancer** induced by the immunosuppressive treatment in the renal transplant population.
- **Post-transplant Kaposi's sarcoma:** Study of expression of different oncogenic signalling pathways in tumour tissue and a virological study evaluating the relationship with oncoviruses (HV8).
- **Nanotechnology in post-transplant cancers.** Impact on tumour progression and development of metastasis.

5. Identification of new uremic toxins:

- The main objective of this study is the detection of new uremic toxins and the analysis of depurative abilities of different dialytic technics. These solutes in patients with end-stage chronic kidney disease are responsible of uremic syndrome, only identified 90 of them. For identify them, we are performing proteomic analysis through 2D DIGE and massspectrometry.
- Evaluation of different hemodialysis technics in depurative ability of these solutes.
- **Different prospectives studies evaluation the impact of** high-flux or on-line hemodiafiltration in end-stage chronic kidney disease patient survival, the effect of nocturan, every other day on-line hemodiafiltration, or the use of bioimpedance ant the measure of plasmatic volume in the prevention of hypotension and adjust the weight on dialysis.

6. Other lines of research:

- Study of **hereditary kidney diseases,** especially polycystic kidney disease, Alport syndrome and benign familial haematuria.
- **Amyloidosis** associated with dialysis or beta-2 microglobulin and other types of hereditary and non-hereditary amyloidosis with renal involvement.

Our researchers also work on research lines shared with other Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS) [August Pi i Sunyer Biomedical Research Institute] teams, primarily in the fields of hypertension, endothelial dysfunction, diabetes, systemic autoimmune diseases with renal involvement and cancer.

PUBLICATIONS

ORIGINALS
I.F.: 84.61

1 Diekmann F.; Rovira J.; Diaz-Ricart M.; Arellano E.M.; Vodenik B.; Jou J.M.; Vives-Corrons J.L.; Escolar G.; Campistol J.M. **mTOR inhibition and erythropoiesis: microcytosis or anaemia?** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (2): 537-541. **I.F.: 3.40.**

2 Fagundes C.; Pepin M.N.; Guevara M.; Barreto R.; Casals G.; Sola E.; Pereira G.; Rodriguez E.; Garcia E.; Prado V.; Poch E.; Jimenez W.; Fernandez J.; Arroyo V.; Gines P. **Urinary neutrophil gelatinase-associated lipocalin as biomarker in the differential diagnosis of impairment of kidney function in cirrhosis.** JOURNAL OF HEPATOLOGY. 57: 267-273. **I.F.: 9.26.**

3 Tavira B.; Coto E.; Torres A.; Diaz-Corte C.; Diaz-Molina B.; Ortega F.; Arias M.; Diaz J.M.; Selgas R.; Lopez-Larrea C.; Ruiz-Ortega M.; Ortiz A.; Gonzalez E.; Campistol J.M.; Alvarez V. **Association between a common KCNJ11 polymorphism (rs5219) and new-onset posttransplant diabetes in patients treated with Tacrolimus.** MOLECULAR GENETICS AND METABOLISM. 105 (3): 525-527. **I.F.: 3.19.**

4 Carcelero E.; Soy D.; Guerrero L.; Poch E.; Fernandez J.; Castro P.; Ribas J. **Linezolid Pharmacokinetics in Patients With Acute Renal Failure Undergoing Continuous Venovenous Hemodiafiltration.** JOURNAL OF CLINICAL PHARMACOLOGY. 52: 1430-1435. **I.F.: 2.91.**

5 Perez N.S.; Garcia-Herrera A.; Rosinol L.; Palos L.; Santiago E.; Espinosa G.; Sole M.; Campistol J.M.; Quintana L.F. **Lymphoplasmacytic lymphoma causing light chain cast nephropathy.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (1): 450-453. **I.F.: 3.40.**

6 Coelho T.; Maia L.F.; Da Silva A.M.; Cruz M.W.; Plante-Bordeneuve V.; Lozeron P.; Suhr Ole B.; Campistol J.M.; Conceicao I.M.; Schmidt Hartmut H.J.; Trigo P.; Kelly J.W.; Labaudinie R.; Chan J.; Packman J.; Wilson A.; Grogan D.R. **Tafamidis for transthyretin familial amyloid polyneuropathy A randomized, controlled trial.** NEUROLOGY. 79: 785-792. **I.F.: 8.31.**

7 Jung M.; Sola A.; Hughes J.; Kluth D.C.; Vinuesa E.; Vinas J.L.; Perez-Ladaga A.; Ghotter G. **Infusion of IL-10-expressing cells protects against renal ischemia through induction of lipocalin-2.** KIDNEY INTERNATIONAL. 81 (10): 969-982. **I.F.: 6.61.**

8 Pestana J.O.M.; Grinyo J.M.; Vanrenterghem Y.; Becker T.; Campistol J.M.; Florman S.; Garcia V.D.; Kamar N.; Lang P.; Manfro R.C.; Massari P.; Rial M.D.C.; Schnitzler M.A.; Vitko S.; Duan T.; Block A.; Harler M.B.; Durrbach A. **Three-Year Outcomes From BENEFIT-EXT: A Phase III Study of Belatacept Versus Cyclosporine in Recipients of Extended Criteria Donor Kidneys.** AMERICAN JOURNAL OF TRANSPLANTATION. 12 (3): 630-639. **I.F.: 6.39.**

9 Montserrat N.; Ramirez-Bajo M.J.; Xia Y.; Sancho-Martinez I.; Moya-Rull D.; Miquel-Serra L.; Yang S.; Nivet E.; Cortina C.; Gonzalez F.; Izpisua Belmonte J.C.; Campistol J.M. **Generation of Induced Pluripotent Stem Cells from Human Renal Proximal Tubular Cells with Only Two Transcription Factors, Oct4 and Sox2.** JOURNAL OF BIOLOGICAL CHEMISTRY. 287 (29): 24131-24138. **I.F.: 4.77.**

10 Rovira J.; Diekmann F.; Ramirez-Bajo M.J.; Banon-Maneus E.; Moya-Rull D.; Campistol J.M. **Sirolimus-Associated Testicular Toxicity: Detrimental But Reversible.** TRANSPLANTATION. 93 (9): 874-879. **I.F.: 4.00.**

11 Moreso F.; Carrera M.; Goma M.; Hueso M.; Sellares J.; Martorell J.; Grinyo J.M.; Seron D. **Early Subclinical Rejection as a Risk Factor for Late Chronic Humoral Rejection.** TRANSPLANTATION. 93 (1): 41-46. **I.F.: 4.00.**

12 Revuelta I.; Moya-Rull D.; Garcia-Herrera A.; Rovira J.; De la Pena F.A.; Misiego A.; Guzman F.; Oppenheimer F.; Albanell J.; Campistol J.M. **Role of Oncogenic Pathways and KRAS/BRAF Mutations in the Behavior of Colon Adenocarcinoma in Renal Transplant Patients.** TRANSPLANTATION. 93 (5): 509-517. **I.F.: 4.00.**

13 Morales J.M.; Marcen R.; Del Castillo D.; Andres A.; Gonzalez-Molina M.; Oppenheimer F.; Seron D.; Gil-Vernet S.; Lampreave I.; Gainza F.J.; Valdes F.; Cabello M.; Anaya F.; Escuin F.; Arias M.; Pallardo L.; Bustamante J. **Risk factors for graft loss and mortality after renal transplantation according to recipient age: a prospective multicentre study.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27: iv39-iv46. **I.F.: 3.40.**

14 Maduell F.; Arias M.; Duran C.E.; Vera M.; Fontsere N.; Azqueta M.; Rico N.; Perez N.; Sentis A.; Elena M.; Rodriguez N.; Arcal C.; Bergada E.; Cases A.; Bedini J.L.; Campistol J.M. **Nocturnal, every-other-day, online haemodiafiltration: an effective therapeutic alternative.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (4): 1619-1631. **I.F.: 3.40.**

15 Wlodarczyk Z.; Ostrowski M.; Mourad M.; Kramer B.K.; Abramowicz D.; Oppenheimer F.; Miller D.; Dickinson J.; Undre N. **Tacrolimus Pharmacokinetics of Once- Versus Twice-Daily Formulations in De Novo Kidney Transplantation: A Substudy of a Randomized Phase III Trial.** THERAPEUTIC DRUG MONITORING. 34 (2): 143-147. **I.F.: 2.49.**

16 Ricart M.J.; Oppenheimer F.; Andres A.; Morales J.M.; Alonso A.; Fernandez C. **Enteric-coated mycophenolate sodium in de novo and maintenance kidney-pancreas transplant recipients.** CLINICAL TRANSPLANTATION. 26 (3): 424-431. **I.F.: 1.67.**

17 Esforzado N.; Campistol J.M. **Treatment of Hepatitis C in Dialysis Patients.** CONTRIBUTIONS TO NEPHROLOGY. 176: 54-65. **I.F.: 1.49.**

18 De La Sierra A.; Larrousse M.; Oliveras A.; Armario P.; Hernandez-Del Rey R.; Poch E.; Roca-Cusachs A. **Abnormalities of vascular function in resistant hypertension.** BLOOD PRESSURE. 21 (2): 104-109. **I.F.: 1.43.**

19 Perez A.; Franch J.; Cases A.; Juanatey J.R.G.; Conthe P.; Gimeno E.; Matali A. **Relationship between the degree of glycemic control and diabetes characteristics and hyperglycemia treatment in type 2 diabetes. DIABES Study.** MEDICINA CLINICA. 138 (12): 505-511. **I.F.: 1.38.**

20 Batista F.; Auyanet I.; Torregrosa J.V.; Oppenheimer F. **Long-Term Follow-up After Conversion From Tacrolimus to Cyclosporin in Renal Transplant Patients With New-Onset Diabetes Mellitus After Transplantation.** TRANSPLANTATION PROCEEDINGS. 44: 2582-2584. **I.F.: 1.00.**

21 Fernandez Fresnedo G.; Franco Esteve A.; Gomez Huertas E.; Cabello Chaves V.; Diz Gomez J.M.; Osorio Moratalla J.M.; Gallego Samper R.; Gallego Valcarcel E.; Campistol Plana J.M.; Marin Iranzo R.; Arias Rodriguez M. **Ambulatory Blood Pressure Monitoring in Kidney Transplant Patients: RETENAL Study.** TRANSPLANTATION PROCEEDINGS. 44(9):2601-2. **I.F.: 1.00.**

22 Paschoalin R.P.; Torregrosa J.V.; Barros X.; Duran C.E.; Campistol J.M. **Cinacalcet de Novo in Persistent Hypercalcemia After Kidney Transplantation Secondary to Hyperparathyroidism: Long-Term Follow-up and Effect of Withdrawl.** TRANSPLANTATION PROCEEDINGS. 44(8):2376-8. **I.F.: 1.00.**

23 Paschoalin R.P.; Torregrosa J.V.; Sanchez-Escuredo A.; Barros X.; Duran C.E.; Campistol J.M. **Cinacalcet Treatment for Stable Kidney Transplantation Patients With Hypercalcemia due to Persistent Secondary Hyperparathyroidism: A Long-term Follow-up.** TRANSPLANTATION PROCEEDINGS. 44:2588-2589. **I.F.: 1.00.**

24 Torregrosa J.V.; Duran C.E.; Barros X.; Blasco M.; Arias M.; Cases A.; Campistol J.M. **Successful treatment of calcific uraemic arteriolopathy with bisphosphonates.** NEFROLOGIA. 32 (3): 329-334 2012. **I.F.: 1.00.**

25 Caballo C.; Palomo M.; Cases A.; Galan A.M.; Molina P.; Vera M.; Bosch X.; Escolar G.; Diaz-Ricart M. **NF kappa B in the Development of Endothelial Activation and Damage in Uremia: An In Vitro Approach.** PLOS ONE. 7. **I.F.: 4.09.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	117.61	30	12	3
2011	63.97	20	7	6
2012	84.61	25	13	5

REVIEWS
I.F.: 1.00

1 Bestard O.; Campistol J.M.; Morales J.M.; Sanchez-Fructuoso A.; Cabello M.; Cabello V.; Pallardo L.M.; Grinyo J.M. **Advances in immunosuppression for kidney transplantation: new strategies for preserving kidney function and reducing cardiovascular risk.** NEFROLOGIA. 32 (3): 374-384 2012. **I.F.: 1.00.**

EDITORIALS
I.F.: 1.38

1 Alcon A.; Pena T.; Arrizabalaga P. **Women physicians and health research.** MEDICINA CLINICA. 138 (8): 343-348 APR 7 2012. **I.F.: 1.38.**

GRANTS FOR RESEARCH IN PROGRESS

Campistol J.M. **LENIT (Laboratori Experimental de Nefrologia i Transplantament).** Sponsored by: AGAUR 2009_SGR_1125. Duration: 20/07/2009 - 31/12/2013.

Alcaraz A. **Grup de recerca en urologia oncològica (GRUO).** Sponsored by: AGAUR 2009_SGR_837. Duration: 20/07/2009 - 31/12/2013.

Martorell J. **A Europe-wide Strategy to enhance Transplantation of highly sensitized patients on basis of Acceptable HLA Mismatches.** Sponsored by: European Commission 305385. Duration: 01/12/2012 - 30/11/2015.

Campistol J.M. **Red de Investigación en Enfermedades Renales (REDINREN).** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0016/1002. Duration: 29/02/2008 - 31/12/2013.

Campistol J.M. **Análisis de biomarcadores urinarios en la disfunción crónica del injerto: estudio de validación e implicación de la vía WNT/BETA-CATENINA.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0281. Duration: 01/01/2010 -30/06/2013.

Campistol J.M. **Remodelación tisular en el rechazo crónico.** Sponsored by: Fundación Mútua Madrileña AP92582011. Duration: 26/11/2011 -25/11/2014.

Martorell J. **Curso de formación y promoción: Histocompatibilidad del Laboratorio a la Clínica 2012 LH2C-2012.** Sponsored by: Organización Nacional de Transplantes ONT12_001. Duration: 31/07/2012 - 31/12/2012.

Campistol J.M. **Proteomic analysis of transthyretin post-translational modifications as a disease activity marker in TTR-hereditary amyloidosis: a case-control study.** Sponsored by: Marató TV3 101430. Duration: 03/02/2011 - 02/02/2014.

Diekmann F. **Inhibición de JAK3, de PKC, de proteasas y de mTOR en el rechazo humoral.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/0112. Duration: 01/01/2012 -31/12/2014.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Hypertension, lipids and cardiovascular risk

TEAM INVOLVED IN: ciberobn

GROUP MEMBERS

TEAM LEADER
Emili Ros (Hospital Clínic)
Tel.: 93 227 93 83
E-mail: eros@clinic.cat

RESEARCHERS:
Antonio Coca (Hospital Clínic)
Cristina Sierra (Hospital Clínic)
Daniel Zambón (Hospital Clínic)
Ramón Estruch (Hospital Clínic)
Emilio Sacanella (Hospital Clínic)
Ferran Masanes (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Montserrat Cofán (ISCIII)
Aleix Sala-Vila (ISCIII)
Gemma Chiva (FBG-UB)
Sara Arranz (ISCIII)

PRE-DOCTORAL RESEARCHERS:
Mònica Doménech (ISCIII/Fundació Clínic)
Cinta Valls (ISCIII)
Rosa Casas (ISCIII)
Palmira Valderas (UB)

NURSING STAFF:
Anna López (ISCIII)
Laia de Lama (Fundació Clínic)

DIETITIANS:
Ana Mª Pérez-Heras (Fundació Clínic)
Mercè Serra (ISCIII)
Conxa Viñas (ISCIII)

STATISTICIAN:
Emili Corbella (IDIBELL)

COLLABORATORS:
Núria Bargalló (Hospital Clínic)
Maria Teresa de Caralt (Hospital Clínic)
Rosa Gilabert (Hospital Clínic)
Isabel Núñez (Hospital Clínic)
Miquel Camafort (Hospital Clínic)

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Hypertension, lipids and cardiovascular risk

STRATEGIC OBJECTIVES

The general aim of our group is to gain in-depth knowledge of the epidemiology, pathogenesis,diagnosis, treatment and prevention of arterial hypertension, dyslipidemia and other cardiovascular disease risk factors. The research lines we wish to continue consolidating are the following:

1. Mechanisms and consequences of silent lesions in target organs of hypertension.
2. Interaction of environmental determinants in cardiovascular disease, such as salt intake and the salt sensitivity phenomenon.
3. Candidate genes of hypertension and its complications.
4. Characterization of genetic dyslipidemias.
5. Detection of preclinical atherosclerosis.
6. Study of the intestinal absorption and synthesis of cholesterol.
7. Phytosterolemia as a cardiovascular risk factor.
8. Determination of the fatty acids profile in phospholipids and blood cell membranes, and their associations with diet, metabolic syndrome, cardiovascular risk phenotypes and preclinical atherosclerosis.
9. Study of the cardiovascular functionality of foods.
10. Effects of the Mediterraenan diet on carotid atheroma plaque vulnerability evaluated by MRI (PREDIMED trial).
11. Identification of genetic variants associated with different responses to foods and nutrients (nutrigenetics).
12. Influence of the components of the Mediterranean on cognitive impairment in older people (PREDIMED trial).
13. Effects of Mediterranean diet on blood pressure assessed by ambulatory and home blood pressure monitoring (PREDIMED trial).
14. Study of moderate consumption of wine, beer and the Mediterranean diet in the prevention of cardiovascular diseases (PREDIMED trial).
15. Effects of the Mediterranean diet on the prevention of chronic degenerative diseases and cancer (PREDIMED trial).
16. Study of serum and urine biomarkers in relation to food consumption and changes in cardiovascular disease risk factors.

MAIN LINES OF RESEARCH

1. External arterial ultrasound of femoral and carotid arteries, coronary calcium by CT and carotid plaque MRI. Relationship between preclinical atherosclerosis and conventional and emergent risk factors and biomarkers of the usual diet, including unsaturated fatty acids and in plasma phospholipids, circulating vitamins and phytosterols. Influence of diet on carotid atheroma plaque vulnerability evaluated by sequential MRI.
2. Circadian patterns, arterial pressure variability and target organ damage. Sensitivity to salt in arterial hypertension. Inflammation in hypertension. Hypertension and atrial fibrillation as manifestation of hypertension-induced cardiac damage.
3. Candidate genes for cerebrovascular stroke risk in hypertensive patients. Candidate genes for the development of left ventricular hypertrophy and heart failure in hypertensive patients.
4. Functionality of dietary patterns and whole foods: influence on arterial pressure evaluated by ambulatory and home monitoring, insulin resistance, biological markers of cholesterol absorption and synthesis and vascular risk, dietary biomarkers (unsaturated fatty acids in whole blood, carotenes and vitamin E in plasma, polyphenols in urine) and physicochemical properties of the low-density lipoproteins (LDLs) and high-density lipoproteins (HDLs).
5. Age-associated cognitive impairment in participants in the PREDIMED study after 5 years of intervention with Mediterranean diets or a control diet.
6. Effect of hypercholesterolemia of different origin and severity on cognitive function as assessed by neuropsychological tests and functional brain MRI.
7. Cholesterol absorption and synthesis evaluated by the determination of plasma non-cholesterol sterol levels using gas chromatography: measurement, genetic conditioning factors, influence on cardiovascular risk, and relationship with lipid response to phytosterols, ezetimibe and statins.
8. Influence of plant and marine omega-3 fatty acids on progression of carotid atherosclerosis by B-mode ultrasound and carotid plaque vulnerability by MRI in subjects at high vascular risk; and on 6-months post-ischemic myocardial recovery by MRI-assessed changes in infarct size in myocardial infarction survivors.
9. Study of the pathologic progression of Alzheimer's disease (AD) in relation to the proportion of omega-3 fatty acids in phospholipids of different areas of post-mortem brain samples of AD patients; and study of the fatty acid profile in circulating lipids and/or cerebrospinal fluid (CSF) as predictor of the evolution of cognitive decline and ultimate development of AD.
10. Membrane omega-3 fatty acid enrichment as a factor influencing the organization of membrane microdomains, ensuing changes on virus infectivity and development of cardiometabolic diseases.
11. Effect of diet supplementation with nuts for 2 years on cognitive function, the integrity of the retina, the length of telomeres, and different markers of inflammation, oxidation and cardiovascular risk in old people.
12. Study of the effects of moderate wine and beer consumption, the Mediterranean diet and other polyphenol-rich products such as tomatoes in the primary prevention of cardiovascular disease and other degenerative disorders.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	97.91	21	14	5
2011	78.21	22	9	10
2012	131.94	33	20	12

ORIGINALS
I.F.: 131.94

1 Ortega E.; Gilabert R.; Nunez I.; Cofan M.; Sala-Vila A.; De Groot E.; Ros E. **White blood cell count is associated with carotid and femoral atherosclerosis.** ATHEROSCLEROSIS. 221 (1): 275-281. **I.F.: 3.79.**

2 Jarauta E.; Mateo-Gallego R.; Gilabert R.; Plana N.; Junyent M.; De Groot E.; Cenarro A.;Masana L.; Ros E.; Civeira F. **Carotid atherosclerosis and lipoprotein particle subclasses in familial hypercholesterolaemia and familial combined hyperlipidaemia.** NUTRITION METABOLISM AND CARDIOVASCULAR DISEASES. 22 (7): 591-597. **I.F.: 3.73.**

3 Chiva-Blanch G.; Urpi-Sarda M.; Ros E.; Arranz S.; Valderas-Martinez P.; Casas R.; Sacanella E.; Llorach R.; Lamuela-Raventos R.M.; Andres-Lacueva C.; Estruch R. **Dealcoholized Red Wine Decreases Systolic and Diastolic Blood Pressure and Increases Plasma Nitric Oxide.** CIRCULATION RESEARCH. 111:1065. **I.F.: 9.49.**

4 Chiva-Blanch G.; Ros E.; Urpi-Sarda M.; Estruch R.; Andres-Lacueva C. **The Impact of Red Wine on Blood Pressure Dizziness Continues Reply.** CIRCULATION RESEARCH. 111:e389-e390. **I.F.: 9.49.**

5 Queipo-Ortuno M.I.; Boto-Ordonez M.; Murri M.; Gomez-Zumaquero J.M.; Clemente-Postigo M.; Estruch R.; Cardona Diaz F.; Andres-Lacueva C.; Tinahones F.J. **Influence of red wine polyphenols and ethanol on the gut microbiota ecology and biochemical biomarkers.** AMERICAN JOURNAL OF CLINICAL NUTRITION. 95 (6): 1323-1334. **I.F.: 6.67.**

6 Banegas J.R.; Graciani A.; De la Cruz-Troca J.J.; Leon-Munoz L.M.; Guallar-Castillon P.; Coca A.; Ruilope L.M.; Rodriguez-Artalejo F. **Achievement of Cardiometabolic Goals in Aware Hypertensive Patients in Spain A Nationwide Population-Based Study.** HYPERTENSION. 60: 898-905. **I.F.: 6.21.**

7 Fernandez-Real J.M.; Bullo M.; Moreno-Navarrete J.M.; Ricart W.; Ros E.; Estruch R.; Salas-Salvado J. **A Mediterranean Diet Enriched with Olive Oil Is Associated with Higher Serum Total Osteocalcin Levels in Elderly Men at High Cardiovascular Risk.** JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM. 97: 3792-3798. **I.F.: 5.97.**

8 Diaz-Lopez A.; Bullo M.; Martinez-Gonzalez M.A.; Guasch-Ferre M.; Ros E.; Basora J.; Covas M.I.; Lopez-Sabater, M.C; Salas-Salvado J. **Effects of Mediterranean Diets on Kidney Function: A Report From the PREDIMED Trial.** AMERICAN JOURNAL OF KIDNEY DISEASES. 60(3):380-9. **I.F.: 5.43.**

9 Rotches-Ribalta M.; Urpi-Sarda M.; Llorach R.; Boto-Ordonez M.; Jauregui O.; Chiva-Blanch G.; Perez-Garcia Ll.; Jaeger W.; Guillen M.; Corella D.; Tinahones F.J.; Estruch R.; Andres-Lacueva C. **Gut and microbial resveratrol metabolite profiling after moderate long-term consumption of red wine versus dealcoholized red wine in humans by an optimized ultra-high-pressure liquid chromatography tandem mass spectrometry method.** JOURNAL OF CHROMATOGRAPHY A. 1265: 105-113. **I.F.: 4.53.**

10 Rotches-Ribalta M.; Andres-Lacueva C.; Estruch R.; Escribano E.; Urpi-Sarda M. **Pharmacokinetics of resveratrol metabolic profile in healthy humans after moderate consumption of red wine and grape extract tablets.** PHARMACOLOGICAL RESEARCH. 66: 375-382. **I.F.: 4.44.**

11 Zamora-Ros R.; Urpi-Sarda M.; Lamuela-Raventos R.M.; Martinez-Gonzalez M.A.; Salas-Salvado J.; Aros F.; Fito M.; Lapetra J.; Estruch R.; Andres-Lacueva C. **High urinary levels of resveratrol metabolites are associated with a reduction in the prevalence of cardiovascular risk factors in high-risk patients.** PHARMACOLOGICAL RESEARCH. 65 (6): 615-620. **I.F.: 4.44.**

12 Martinez-Gonzalez M.A.; Garcia-Arellano A.; Toledo E.; Salas-Salvado J.; Buil-Cosiales P.; Corella D.; Covas M.I.; Schroeder H.; Aros F.; Gomez-Gracia E.; Fiol M.; Ruiz-Gutierrez V.; Lapetra J.; Lamuela-Raventos R.M.; Serra-Majem Ll.; Pinto X.; Munoz M.A.; Waernberg J.; Ros E.; Estruch R. **A 14-Item Mediterranean Diet Assessment Tool and Obesity Indexes among High-Risk Subjects: The PREDIMED Trial.** PLOS ONE. 7: e43134/1-10. **I.F.: 4.09.**

13 Corella D.; Ortega-Azorin C.; Sorli J.V.; Covas M.I; Carrasco P.; Salas-Salvado J.; Martinez-Gonzalez M.A.; Aros F.; Lapetra J.; Serra-Majem Ll.; Lamuela-Raventos R.; Gomez-Gracia E.; Fiol M.; Pinto X.; Ros E.; Marti A.; Coltell O.; Ordovas J.M.; Estruch R. **Statistical and Biological Gene-Lifestyle Interactions of MC4R and FTO with Diet and Physical Activity on Obesity: New Effects on Alcohol Consumption.** PLOS ONE. 7: e52344/1-14. **I.F.: 4.09.**

14 Guasch-Ferre M.; Bullo M.; Martinez-Gonzalez M.A.; Corella D.; Estruch R.; Covas M.I.; Aros F.; Waernberg J.; Fiol M.; Lapetra J.; Munoz M.A.; Serra-Majem Ll.; Pinto X.; Babio N.;

Diaz-Lopez A.; Salas-Salvado J. **Waist-to-Height Ratio and Cardiovascular Risk Factors in Elderly Individuals at High Cardiovascular Risk.** PLOS ONE. 7: e43275/1-6. **I.F.: 4.09.**

15 Urpi-Sarda M.; Casas R.; Chiva-Blanch G.; Romero-Mamani E.S.; Valderas-Martinez P.; Salas-Salvado J.; Covas M.I.; Toledo E.; Andres-Lacueva C.; Llorach R.; Garcia-Arellano A.; Bullo M.; Ruiz-Gutierrez V.; Lamuela-Raventos R.M.; Estruch R. **The Mediterranean Diet Pattern and Its Main Components Are Associated with Lower Plasma Concentrations of Tumor Necrosis Factor Receptor 60 in Patients at High Risk for Cardiovascular Disease.** JOURNAL OF NUTRITION. 142 (6): 1019-1025. **I.F.: 3.92.**

16 Sanclemente T.; Marques-Lopes I.; Fajo-Pascual M.; Cofan M.; Jarauta E.; Ros E.; Puzo J.; Garcia-Otin A.L. **Naturally-occurring phytosterols in the usual diet influence cholesterol metabolism in healthy subjects.** NUTRITION METABOLISM AND CARDIOVASCULAR DISEASES. 22: 849-855. **I.F.: 3.73.**

17 Khan N.; Monagas M.; Andres-Lacueva C.; Casas R.; Urpi-Sarda M.; Lamuela-Raventos R.M.; Estruch R. **Regular consumption of cocoa powder with milk increases HDL cholesterol and reduces oxidized LDL levels in subjects at high-risk of cardiovascular disease.** NUTRITION METABOLISM AND CARDIOVASCULAR DISEASES. 22: 1046-1053. **I.F.: 3.73.**

18 Corella D.; Carrasco P.; Sorli J.V.; Coltell O.; Ortega-Azorin C.; Guillen M.; Gonzalez J.I.; Saiz C.; Estruch R.; Ordovas J.M. **Education modulates the association of the FTO rs9939609 polymorphism with body mass index and obesity risk in the Mediterranean population.** NUTRITION METABOLISM AND CARDIOVASCULAR DISEASES. 22 (8): 651-658. **I.F.: 3.73.**

19 Ortega-Azorin C.; Sorli J.V.; Asensio E.M.; Coltell O.; Martinez-Gonzalez M.A.; Salas-Salvado J.; Covas M.I.; Aros F.; Lapetra J.; Serra-Majem Ll.; Gomez-Gracia E.; Fiol M.; Saez-Tormo G.; Pinto X.; Munoz M.A.; Ros E.; Ordovas J.M.; Estruch R.; Corella D. **Associations of the FTO rs9939609 and the MC4R rs17782313 polymorphisms with type 2 diabetes are modulated by diet, being higher when adherence to the Mediterranean diet pattern is low.** CARDIOVASCULAR DIABETOLOGY. 11: 1-12. **I.F.: 3.35.**

20 Vazquez-Fresno R.; Llorach R.; Alcaro F.; Rodriguez M.A.; Vinaixa M.; Chiva-Blanch G.; Estruch R.; Correig X.; Andres-Lacueva C. **1H-NMR-based metabolomic analysis of the effect of moderate wine consumption on subjects with cardiovascular risk factors.** ELECTROPHORESIS. 33: 2345-2354. **I.F.: 3.30.**

21 Medina-Remon A.; Tresserra-Rimbau A.; Arranz S.; Estruch R.; Lamuela-Raventos R.M. **Polyphenols excreted in urine as biomarkers of total polyphenol intake.** BIOANALYSIS. 4: 2705-2713. **I.F.: 3.22.**

22 Mateo-Gallego R.; Perez-Calahorra S.; Cenarro A.; Bea A.M.; Andres E.; Horno J.; Ros E.; Civeira F. **Effect of lean red meat from lamb v. lean white meat from chicken on the serum lipid profile: a randomised, cross-over study in women.** BRITISH JOURNAL OF NUTRITION. 107 (10): 1403-1407. **I.F.: 3.01.**

23 Rodriguez-Padial L.; Rodriguez-Picon B.; Jerez-Valero M.; Casares-Medrano J.; Akerstrom F.O.; Calderon A.; Barrios V.; Sarria-Santamera A.; Gonzalez-Juanatey J.R.; Coca A.; Andres J.; Ruiz-Baena J. **Diagnostic Accuracy of Computer-Assisted Electrocardiography in the Diagnosis of Left Ventricular Hypertrophy in Left Bundle Branch Block.** REVISTA ESPANOLA DE CARDIOLOGIA. 65 (1): 38-46. **I.F.: 2.53.**

24 Sierra C.; Domenech M.; Camafort M.; Coca A. **Hypertension and Mild Cognitive Impairment.** CURRENT HYPERTENSION REPORTS. 14: 548-555. **I.F.: 2.50.**

25 Marrugat J.; Elosua R.; Coca A.; De La Figuera M.; Rubio-Terres C.; Rubio-Rodriguez D.; Ramirez de Arellano A.; Boldeanu A.; Puig-Gilberte J.; Salas E. **Economic evaluation of cardio incode, a genetic platform for the assessment of ischemic heart disease risk.** VALUE IN HEALTH. 15: A375-A375. **I.F.: 2.19.**

26 Marrugat J.; Elosua R.; Coca A.; De La Figuera M.; Rubio-Terres C.; Rubio-Rodriguez D.; Ramirez de Arellano A.; Boldeanu A.; Puig-Gilberte J.; Salas E. **Economic evaluation of thrombo incode, a genetic platform for the assessment of venous thromboembolism (VTE) risk in patients with a pattern of VTE or a condition that suggest a hereditary component.** VALUE IN HEALTH. 15: A374-A374. **I.F.: 2.19.**

27 Sierra C. **Cerebral small vessel disease, cognitive impairment and vascular dementia.** PANMINERVA MEDICA. 54: 179-187. **I.F.: 1.11.**

28 Bosch X.; Palacios F.; Inclan-Iribar G.; Castaneda M.; Jordan A.; Moreno P.; Coca A.; Lopez-Soto A. **Quick diagnosis units or conventional hospitalisation for the diagnostic evaluation of severe anaemia: A paradigm shift in public**

health systems? EUROPEAN JOURNAL OF INTERNAL MEDICINE. 23 (2): 159-164. **I.F.: 2.00.**

29 Bosch X.; Jordan A.; Coca A.; Lopez-Soto A. **Quick diagnosis units versus hospitalization for the diagnosis of potentially severe diseases in Spain.** JOURNAL OF HOSPITAL MEDICINE. 7 (1): 41-47. **I.F.: 1.40.**

30 Valls-Pedret C.; Lamuela-Raventos R.M.; Medina-Remon A.; Quintana M.; Corella D.; Pinto X.; Martinez-Gonzalez M.A.; Estruch R.; Ros E. **Polyphenol-Rich Foods in the Mediterranean Diet are Associated with Better Cognitive Function in Elderly Subjects at High Cardiovascular Risk.** JOURNAL OF ALZHEIMERS DISEASE. 29 (4): 773-782. **I.F.: 3.74.**

31 Mateo-Gallego R.; Perez-Calahorra S.; Cenarro A.; Bea A.M.; Andres E.; Horno J.; Ros E.; Civeira F. **Effect of lean red meat from lamb versus lean white meat from chicken on the serum lipid profile: randomized, crossover study in healthy women.** BRITISH JOURNAL OF NUTRITION. 107(10):1403-7. **I.F.: 3.01.**

32 Solanas-Barca M.; De Castro-Orós I.; Mateo-Gallego R.; Cofán M.; Plana N.; Puzo J.; Burillo E.; Martín-Fuentes P.; Ros E.; Masana L.; Pocoví M.; Civeira F.; Cenarro A. **Apolipoprotein E gene mutations in subjects with mixed hyperlipidemia and a clinical diagnosis of familial combined hyperlipidemia.** ATHEROSCLEROSIS. 222(2):449-55. **I.F.: 3.79.**

33 Casas-Agustench P.; Serra M.; Pérez-Heras A.; Cofán M.; Pintó X.; Trautwein E.A.; Ros E. **Effect of plant sterol esters in skimmed milk and vegetable-fat enriched milk on serum lipids and non-cholesterol sterols in hypercholesterolemic subjects: A randomized, placebo controlled, crossover study.** BRITISH JOURNAL OF NUTRITION. 107 (12): 1766-1775. **I.F.: 3.01.**

REVIEWS
I.F.: 12.03

1 Urpi-Sarda M.; Casas R.; Chiva-Blanch G.; Romero-Mamani E.S.; Valderas-Martinez P.; Arranz S.; Andres-Lacueva C.; Llorach R.; Medina-Remon A.; Lamuela-Raventos R.M.; Estruch R. **Virgin olive oil and nuts as key foods of the Mediterranean diet effects on inflammatory biomarkers related to atherosclerosis.** PHARMACOLOGICAL RESEARCH. 65 (6): 577-583. **I.F.: 4.44.**

2 Manolis A.J.; Rosei E.A.; Coca A.; Cifkova R.; Erdine S.E.; Kjeldsen S.; Lip G.Y.H.; Narkiewicz K.; Parati G.; Redon J.; Schmieder R.; Tsioufis C.; Mancia G. **Hypertension and atrial fibrillation: diagnostic approach, prevention and treatment. Position paper of the Working Group 'Hypertension Arrhythmias and hrombosis' of the European Society of Hypertension.** JOURNAL OF HYPERTENSION. 30 (2): 239-252. **I.F.: 4.02.**

3 Burillo E.; Martin-Fuentes P.; Mateo-Gallego R.; Baila-Rueda L.; Cenarro A.; Ros E.; Civeira F. **Omega-3 Fatty Acids and HDL. How Do They Work in the Prevention of Cardiovascular Disease?** CURRENT VASCULAR PHARMACOLOGY. 10 (4): 432-441. **I.F.: 2.90.**

4 Arranz S.; Chiva-Blanch G.; Valderas-Martinez P.; Medina-Remon A.; Lamuela-Raventos R.M.; Estruch R. **Wine, Beer, Alcohol and Polyphenols on Cardiovascular Disease and Cancer.** NUTRIENTS. 4 (7): 759-781. **I.F.: 0.68.**

EDITORIALS
I.F.: 17.01

1 Ros E. **Olive oil and CVD: accruing evidence of a protective effect.** BRITISH JOURNAL OF NUTRITION. 108: 1931-1933. **I.F.: 3.01.**

2 Sierra C. **Surviving a stroke: is all quiet on the front or the great illusion?** REVISTA CLINICA ESPANOLA. 212 (5): 242-243. **I.F.: 2.01.**

3 Coca A. **Cardiovascular disease based on gender: myths and evidence.** REVISTA CLINICA ESPANOLA. 212 (2): 81-83. **I.F.: 2.01.**

4 Moreno Heitor JR.; Coca A. **Resistant and refractory hypertension: Reflections on pathophysiology and terminology.** BLOOD PRESSURE. 21 (4): 209-210. **I.F.: 1.43.**

5 Camafort M.; Coca A. **Measuring appropriately blood pressure. A precision or a simplicity question?** MEDICINA CLINICA. 138 (14): 612-613. **I.F.: 1.38.**

6 Ros E. **How important is dietary management in hypercholesterolemia?** CLINICAL LIPIDOLOGY. 7: 489-492. **I.F.: 0.75.**

7 Martinez-Gonzalez M.A.; Corella D.; Salas-Salvado J.; Ros E.; Covas M.I.; Fiol M.; Warnberg J.; Aros F.; Ruiz-Gutierrez V.; Lamuela-Raventos R.M.; Lapetra J.; Munoz M.A.; Martinez J.A.; Saez G.; Serra-Majem L.; Pinto X.; Mitjavila M.T.; Tur J.A.; Portillo M.D.; Estruch R. **Cohort Profile: Design and methods of the PREDIMED study.** INTERNATIONAL JOURNAL OF EPIDEMIOLOGY. 41 (2): 377-385. **I.F.: 6.41.**

GRANTS FOR RESEARCH IN PROGRESS

Coca A. **NoE - Integrated Genomics, Clinical Research and Care in Hypertension Centre coordinador: Istituto Auxolico Italiano.** Sponsored by: European Commission LHSM-CT-2006-037093. Duration: 01/11/2006 - 31/12/2012.

Ros E. **Contribución de la variabilidad en el promotor del gen del receptor LDL a la hipercolesterolemia poligénica. Subproyecto 5: Análisis de biomarcadores de absorción y síntesis de colesterol.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1292. Duration: 01/01/2010 - 31/03/2013.

Ros E. **Suproject 2: Effects of a 2-year Mediterranean diet intervention on 3T MRI-monitored carotid plaque progression and vulnerability. A randomized study.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad 06-2007-S02. Duration: 19/02/2008 - 30/05/2012.

Estruch R.; Sacanella E.; Masanes F.; Chiva G.; Casas R.; Urpi M. **Desarrollo de biomarcadores de consumo y de efecto de un patrón de alimentación Mediterranea en la prevención de la enfermedad cardiovascular. Una aproximación metabolómica.** Sponsored by: Ministerio de Ciencia e Innovación, AGL2009-13906-C02-02. Duration: 01/01/2010-31/12/2012.

Estruch R. **Alimentación saludable en la prevención primaria de enfermedades crónicas: la Red PREDIMED.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0045/1003. Duration: 29/02/2008-31/12/2013.

Sacanella E. **Evaluación del efecto antihipertensivo y antiinflamatorio de los polifenoles, carotenos y vitamina C del tomate, según la ración dietética ingerida.** Sponsored by: Ministerio de Ciencia e Innovación, AGL201022319-C03-02. Duration: 01/01/2011-31/12/2013.

Estruch R. **Efectos de la dieta mediterránea sobre la carga arteriosclerótica medida mediante técnicas de imagen y biomarcadores vasculares.** Sponsored by Fundación MAPFRE, MAPFRE10_004. Duration: 16/02/2011-13/04/2012.

Sacanella E. **Efecto del consumo crónico de tomate sobre presión arterial y la función endotelial de sujetos con alto riesgo vascular.** Sponsored by: Ministerio de Economía y Competitividad AGL2010-22319-C03-02. Duration: 01/01/2011-31/12/2013.

Estruch R. **Subproject 1: Effects of Mediterranean diet intervention on the primary prevention of cardiovascular disease. Project: Effects of a mediterranean diet intervention on the atherosclerotic burden measured by imaging techniques and systemic biomarkers. Modulation by genetic variation. The PREDIMED study.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad 06-2007-S01. Duration: 19/02/2008-30/05/2012.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Respiratory biophysics and bioengineering

TEAM INVOLVED IN: ciberes & ciber-bbn

GROUP MEMBERS

TEAM LEADER
Ramon Farré (Universitat de Barcelona)
Tel.: 93 402 45 15
E-mail: rfarre@ub.edu

RESEARCHERS:
Javier Pavía (Hospital Clínic)
Domènec Ros (UB)

POST-DOCTORAL RESEARCHERS:
Elena Garreta (Marie Curie IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Berta Martí (IBEC)
Esther Melo (MEC)
Valentina Isetta (UE)
Foteini Popota (IDIBAPS)
Aida Niñerola (CIBER-BBN)
Juan José Uriarte (UB)
Paula Nonaka (FAPES-Brasil)
Noelia Campillo (IBEC)

TECHNICIANS:
Miguel Rodríguez (UB)
Rocío Nieto (CIBERES)

COLLABORATORS:
Carles Falcón (IDIBAPS)
Raúl Tudela (CIBER-BBN)
Albert Cot (UB-CIBER-BBN)
Jordi Alcaraz (UB)
Xavier Trepat (UB-IBEC)
Daniel Navajas (UB-IBEC)

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Respiratory biophysics and bioengineering

STRATEGIC OBJECTIVES

The general objectives of the group are the study of the biophysical mechanisms determining respiratory function, and the development of models and methods for the processing of biomedical images and signals. The work of the group is based on an interdisciplinary approach, with integration between basic and clinical research. In parallel to the scientific objectives, our group promotes transfer to the industrial setting of the technological advances derived from the research work.

MAIN LINES OF RESEARCH

1. Respiratory mechanics.
The aim of research in respiratory mechanics is to investigate the viscoelastic properties of the airways and lung tissues. At present, the work fundamentally focuses on the study of upper airway collapsibility in obstructive apnea-hypopnea during sleep and in the monitoring of noninvasive mechanical ventilation during respiratory failure. The clinical aim of this research is to obtain improved noninvasive diagnostic techniques, and to optimize the treatment methods based on ventilation assist measures.

2. Molecular and cellular nanomechanics.
The introduction of nanotechnologies allowing the manipulation of materials on the nanometric and pico-Newton scale has opened up new perspectives for the investigation of individual biomolecules and cells. Our group uses atomic force microscopy, magnetic microspheres and traction force microscopy to study cell adhesion and the mechanical properties of lung cells and leukocytes. Studies are also made of the mechanical properties of embryonic and adult stem cells during the differentiation process, and of the way in which mechanical stimuli can enhance differentiation towards the alveolar epithelial phenotype. One of our projects in this setting focuses on organ regeneration. Specifically, work is done on the bioartificial production of functional rat lungs by means of the re-cellularization of the extracellular matrix of the organ with stem cells, and recreation of the mechanical pulmonary micro-nano environment, to optimize cell differentiation.

3. Biomedical imaging analysis.
Research in imaging analysis currently focuses on the processing of photon emission tomography (SPECT) and positron emission tomography (PET) images, with the purpose of securing more precise quantification of gammagraphic (scintigraphic) studies. With this objective in mind, iterative algorithms are being developed for the three-dimensional reconstruction of images and for the fusion of SPECT and magnetic resonance imaging (MRI) images.

PUBLICATIONS

ORIGINALS
I.F.: 65.76

1 Popota F.D.; Aguiar P.; Herance J.R.; Pareto D.; Rojas S.; Ros D.; Pavia J.; Gispert J.D. **Comparison of the Performance Evaluation of the MicroPET R4 Scanner According to NEMA Standards NU 4-2008 and NU 2-2001.** IEEE TRANSACTIONS ON NUCLEAR SCIENCE. 59: 1879-1886. **I.F.: 1.45.**

2 Fernandez-Egea E.; Parellada E.; Sugranyes G.; Horga G.; Lomena F.; Falcon C.; Pavia J.; Bernardo M. **Left amygdalar activation in deficit syndrome compared with non-deficit subjects with schizophrenia during the control task in a facial emotion recognition paradigm.** PSYCHIATRY RESEARCH-NEUROIMAGING. 203: 109-110. **I.F.: 2.96.**

3 Setoain X.; Pavia J.; Seres E.; Garcia R.; Carreno M.M.; Donaire A.; Rubi S.; Bargallo N.; Rumia J.; Boget T.; Pintor L.; Fuster D.; Pons F. **Validation of an Automatic Dose Injection System for Ictal SPECT in Epilepsy.** JOURNAL OF NUCLEAR MEDICINE. 53 (2): 324-329. **I.F.: 6.38.**

4 Guerrero A.; Montserrat J.M.; Farre R.; Masa F.; Duran J.; Embid C. **Automatic CPAP Performance in Patients with Sleep Apnea Plus COPD.** COPD-JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. 9: 382-389. **I.F.: 1.79.**

5 Acerbi I.; Luque T.; Gimenez A.; Puig M.; Reguart N.; Farre R.; Navajas D.; Alcaraz J. **Integrin-Specific Mechanoresponses to Compression and Extension Probed by Cylindrical Flat-Ended AFM Tips in Lung Cells.** PLOS ONE. 7 (2). **I.F.: 4.09.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	48.63	11	7	3
2011	56.27	11	8	2
2012	65.76	14	11	2

6 Chimenti L.; Luque T.; Bonsignore M.R.; Ramirez J.; Navajas D.; Farre R. **Pre-treatment with mesenchymal stem cells reduces ventilator-induced lung injury.** EUROPEAN RESPIRATORY JOURNAL. 40: 939-948. **I.F.: 5.89.**

7 Almendros I.; Montserrat J.M.; Torres M.; Bonsignore M.R.; Chimenti L.; Navajas D.; Farré R. **Obesity and intermittent hypoxia increase tumor growth in a mouse model of sleep apnea.** SLEEP MEDICINE. 13(10):1254-60. **I.F.: 3.40.**

8 Nieto F.J.; Peppard P.E.; Young T.; Finn L.; Hla K.M.; Farré R. **Sleep-disordered breathing and cancer mortality: results from the Wisconsin Sleep Cohort Study.** AM J RESP CRIT CARE. 186(2):190-4. **I.F.: 11.08.**

9 Jobin V., Rigau J.; Beauregard J.; Farre R.; Monserrat J.; Bradley T.D.; Kimoff R.J. **Evaluation of upper airway patency during Cheyne-Stokes breathing in heart failure patients.** EUROPEAN RESPIRATORY JOURNAL. 40(6):1523-30. **I.F.: 5.89.**

10 Acerbi I.; Luque T.; Giménez A.; Puig M.; Reguart N.; Farré R.; Navajas D.; Alcaraz J. **Integrin-specific mechanoresponses to compression and extension probed by cylindrical flat-ended AFM tips in lung cells.** PLOS ONE. 7(2):e32261. **I.F.: 4.09.**

11 Sellarés J.; Loureiro H.; Ferrer M.; Amaro R.; Farré R.; Torres A. **The effect of spontaneous breathing on systemic interleukin-6 during ventilator weaning.** EUROPEAN RESPIRATORY JOURNAL. 39(3):654-60. **I.F.: 5.89.**

12 Tsapikouni T.; Garreta E.; Melo E.; Navajas D.; Farré R. **A bioreactor for subjecting cultured cells to fast-rate intermittent hypoxia.** RESP PHYSIOL NEUROBI. 182(1):47-52. **I.F.: 2.24.**

13 Guamán A.V.; Carreras A.; Calvo D.; Agudo I.; Navajas D.; Pardo A.; Marco S.; Farré R. **Rapid detection of sepsis in rats through volatile organic compounds in breath.** J CHROMATOGR B. 881-882:76-82. **I.F.: 2.89.**

14 Almendros I.; Montserrat J.M.; Ramírez J.; Torres M.; Duran-Cantolla J.; Navajas D.; Farré R. **Intermittent hypoxia enhances cancer progression in a mouse model of sleep apnoea.** EUROPEAN RESPIRATORY JOURNAL. 39(1):215-7. **I.F.: 5.89.**

EDITORIALS
I.F.: 5.89

1 Martínez-García M.Á.; Campos-Rodríguez F.; Farré R. **Sleep apnoea and cancer: current insights and future perspectives.** EUROPEAN RESPIRATORY JOURNAL. 40(6):1315-7. **I.F.: 5.89.**

GRANTS FOR RESEARCH IN PROGRESS

Pavia J. **Estudios de neuroimágen (DENDRIA).** Sponsored by: CDTI 10/157. Duration: 18/05/2010 - 31/12/2013.

Ros D. **Tecnologías de Imagen Molecular Avanzada (AMIT).** Sponsored by: CDTI CENIT 10/192. Duration: 01/01/2010 - 31/12/2013.

Ros D. **Desarrollo del proyecto "Cuantificación de estudios de SPECT cerebral utilizando ligandos del transportador de dopamina en modelos animales y en diagnóstico clínico".** Sponsored by: MICINN SAF2009-08076. Duration: 01/01/2010 - 31/12/2012

Farré R. **Bioingeniería del pulmón mediante cultivo de células madre en la matriz descelularizada del órgano: efecto de los estímulos biofísicos en la optimización del bioreactor.** Sponsored by: MICINN SAF2011-22576 Duration: 01/01/2012 - 31/12/2014.

Farré R. **Clinical trials for elderly patients with Multiple Disease (CHROMED).** Sponsored by: European Commission FP7-HEALTH-2012-INNOVATION-1 306093-2. Duration: 01/10/12 – 31/09/15.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Applied research in infectious respiratory diseases, critically ill patients and lung cancer

TEAM INVOLVED IN: ciberes

GROUP MEMBERS

TEAM LEADER
Antoni Torres (Hospital Clínic)
Tel.: 93 227 55 49
E-mail: atorres@clinic.cat

GROUP LEADER:
Josep Mª Montserrat (Hospital Clínic)

RESEARCHERS:
Carles Agustí (Hospital Clínic)
Joan Ramon Badia (Hospital Clínic)
Miquel Ferrer (Hospital Clínic)
Néstor Soler (Hospital Clínic)
Dolors Soy (Hospital Clínic)
Marc Miravitlles (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Jacob Sellarés (Hospital Clínic)
Eva Polverino (Hospital Clínic)
Gianluigi Li Bassi (IDIBAPS)
Laura Guerrero (IDIBAPS)
Isaac Almendros (Ciberes)

PRE-DOCTORAL RESEARCHERS:
Arnoldo Guerrero (Hospital Clínic)
Arturo Huerta (FIS)
Catia Cillóniz (SGR)
Laia Fernàndez Barat (CibeRes)
Hugo Loureiro (Hospital Clínic)
Carmen Lucena (Hospital Clínic)
Marta Torres (Ciberes)
Joan Daniel Martí (Ciberes)
Beatriz Herrero (Fundació Clínic)
Victoria Alcaraz (Fundació Clínic)
Marta di Pascuale (Universitá degli Studi di Milano)
Elena Prina (Universitá degli Studi di Milano)
Ernesto Crisafulli (Hospital Villa Pineta)
Valeria Giunta (Universitá degli Studi di Milano)
Barbara Piras (Universitá degli Studi di Sassari)
Silvia Terrano (Universitá degli Studi di Milano)
Talitha Comaru (Hospital São Lucas de Porto Alegre, Brasil)
Elisabet Aguilera Xiol (Ciberes)
Sandra Manca (Universitá degli Studi di Sassari)
Mireia Dalmases (Socap)

NURSING STAFF:
Patrícia Fernández (Ciberes)
Encarnación Moreno (Fundació Clínic)
Montserrat Sola (Fundació Clínic)
Rebeca Domingo (FIS)

ADMINISTRATIVE STAFF:
Elisabet Sancho (Ciberes)

STATISTICIAN:
Albert Gabarrús Barri (Ciberes)

COLLABORATORS:
Núria Sànchez (CAPSE)
Pilar Martínez (Clínica Platón)
Montserrat Rigol (IDIBAPS)
Rosanel Amaro (Hospital Clínic)
Mariano Rinaudo (Clínica del Pilar)

Applied research in infectious respiratory diseases, critically ill patients and lung cancer

STRATEGIC OBJECTIVES

- Study of community-acquired respiratory infections, nosocomial infections and infections in immune depressed patients.
- Study of invasive and noninasive mechanical ventilation in acute respiratory failure, particularly in weaning from artificial ventilation.
- Study of the exacerbation of chronic obstructive pulmonary disease (COPD) and the implication of bacterial, viral and fungal infectious agents.
- Physiopathological and treatment studies in an animal model of ventilation associated pneumonia.
- Epidemiology, diagnosis and treatment of adult bronchiectasia not associated with cystic fibrosis: Study of inflammatory response, new treatment modalities and immunoglobulin replacement therapy.
- Human and animal model research in sleep apnea syndrome.
- Multicenter studies in relation to sleep respiratory pathology and cardiovascular disease.

MAIN LINES OF RESEARCH

1. Epidemiology, prevention and new treatments of pneumonias associated with artificial ventilation and new methods of fast diagnosis. Resistances of microorganisms. Study of biofilms in endotracheal tubes. Local and systemic inflammatory response.
2. Epidemiology and diagnosis of community-acquired pneumonia. Multicenter studies in the setting of community-acquired pneumonia. New methods for fast diagnosis. New treatments. Resistances of microorganisms. Local and systemic inflammatory response. S. pneumoniae in the context of new vaccines.
3. Study of the risk factors, microbiology and prognosis of Health Care Associated Pneumonia (HCAP).
4. Etiopathogenesis, bronchial infection and inflammation in the patient with chronic obstructive pulmonary disease (COPD). Role of infections in exacerbation of the disease. Study of bronchial and associated systemic response. Analysis of the risk and prognostic factors in acute episodes. Smoking. Epidemiology and diagnosis of alpha-1-antitrypsin deficiency.
5. Chronic pulmonary infections: bronchiectasia not associated with cystic fibrosis, immune deficiencies and cystic fibrosis in the adult. Control of bronchial colonization. Study of bronchial inflammatory and associated systemic response. New treatment modalities (nebulizer antibiotic treatment). Replacement therapy with immunoglobulins.
6. Infectious lung complications in immune depressed patients. Evaluation of the etiological factors. Optimization of the diagnostic techniques. Study of bronchial inflammatory and associated systemic response. Analysis of prognostic factors.
7. Invasive and noninvasive mechanical ventilation: epidemiology, cost-effectiveness and physiopathology. New techniques. Weaning from mechanical ventilation: role of the inflammatory response and respiratory failure following extubation.
8. Study of the pharmacokinetics of antibiotics and other drugs in the ventilated and non-ventilated patient.
9. Porcine model of acute pulmonary damage due to methicillinresistant P. aeruginosa, S. aureus and S. pneumoniae: study of new coadjuvant drugs in the treatment of pneumonia, study of new antibiotics, prevention of ventilator-associated pneumonia (VAP), and new forms of mechanical ventilation.
10. European studies of respiratory infections. Participation in the GRACE, MOSAR and THERAEDGE projects, which respectively investigate community-acquired respiratory infections, in-hospital respiratory infections and new diagnostic methods.
11. Chronic sleep apnea models.
12. Multicenter Study to assess the effect of CPAP on cardiovascular diseases in patients with sleep apnea.
13. Telematic control of CPAP treatment in sleep apnea syndrome.

RESEARCH GROUP
BREATHING DISTURBANCES IN SLEEP

Team Leader: Josep M. Montserrat (Hospital Clínic)

The main research line of this group is the analysis of respiratory disturbances in sleep. Specifically, the two most important lines are the following: the study of diagnostic methods and effects of treatment in a population of apneic patients in which the indication is not clear; and the study of animal models for exploring the mechanisms underlying the origin and consequences of the disorder. Both lines are carried out in the context of national multicenter clinical trials.

For further information:
www.idibapsrespiratoryresearch.org

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Applied research in infectious respiratory diseases, critically ill patients and lung cancer

PUBLICATIONS

ORIGINALS
I.F.: 256.68

1 Bassi G.L.; Xiol E.A.; Marti J.D.; Rigol M.; Di Pasquale M.F.; Comaru T.; Rinaudo M.; Crisafulli E.; Luque N.; Torres A. **Assessment of cuff-induced tracheal injury by commercially available endotracheal tubes.** CRITICAL CARE MEDICINE. 40: U125-U125. **I.F.: 6.33.**

2 Bassi G.L.; Marti J.D.; Xiol E.A.; Rigol M.; Di Pasquale M.F.; Rinaudo M.; Comaru T.; Luque N.; Crisafulli E.; Torres A. **Effects of high-volume low-pressure cuff design and materials on mucociliary clearance.** CRITICAL CARE MEDICINE. 40: U124-U124. **I.F.: 6.33.**

3 Bassi G.L.; Saucedo L.; Marti J.D.; Rigol M.; Esperatti M.; Luque N.; Ferrer M.; Gabarrus A.; Fernandez L.; Kolobow T.; Torres A. **Effects of duty cycle and positive end-expiratory pressure on mucus clearance during mechanical ventilation.** CRITICAL CARE MEDICINE. 40 (3): 895-902. **I.F.: 6.33.**

4 Guerrero L.; Martinez-Olondris P.; Rigol M.; Esperatti M.; Luque N.; Torres A.; Soy D. **Development and validation of high performance liquid cromatography method to determine vancomycin concentrations in plasma and pig pulmonary tissue.** JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES. 35 (1-4): 240-257 2012. **I.F.: 0.71.**

5 Martinez-Olondris P.; Rigol M.; Soy D.; Guerrero L.; Agusti C.; Quera M.A.; Bassi G.L.; Esperatti M.; Luque N.; Liapikou M.; Filella X.; Marco F.; De la Bellacasa J.P.; Torres A. **Efficacy of linezolid compared to vancomycin in an experimental model of pneumonia induced by methicillin-resistant Staphylococcus aureus in ventilated pigs.** CRITICAL CARE MEDICINE. 40 (1): 162-168. **I.F.: 6.33.**

6 Barbe F.; Duran-Cantolla J.; Sanchez-de-la-Torre M.; Martinez-Alonso M.; Carmona C.; Barcelo A.; Chiner E.; Masa J.F.; Gonzalez M.; Marin J.M.; Garcia-Rio F.; De Atauri J.D.; Teran J.; Mayos M.; De la Pena M.; Monasterio C.; Del Campo F.; Monserrat J.M. **Effect of Continuous Positive Airway Pressure on the Incidence of Hypertension and Cardiovascular Events in Nonsleepy Patients With Obstructive Sleep Apnea A Randomized Controlled Trial.** JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 307 (20): 2161-2168. **I.F.: 30.03.**

7 Campos-Rodriguez F.; Martinez-Garcia M.A.; De la Cruz-Moron I.; Almeida-Gonzalez C.; Catalan-Serra P.; Montserrat J.M. **Cardiovascular Mortality in Women With Obstructive Sleep Apnea With or Without Continuous Positive Airway Pressure Treatment A Cohort Study.** ANNALS OF INTERNAL MEDICINE. 156 (2): 115-W22. **I.F.: 16.73.**

8 Martinez-Garcia M.A.; Campos-Rodriguez F.; Catalan-Serra P.; Soler-Cataluna J.J.; Almeida-Gonzalez C.; De la Cruz Moron I.; Duran-Cantolla J.; Montserrat J.M. **Cardiovascular Mortality in Obstructive Sleep Apnea in the Elderly: Role of Long-Term Continuous Positive Airway Pressure Treatment A Prospective Observational Study.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186: 909-916. **I.F.: 11.08.**

9 Carrillo A.; Ferrer M.; Gonzalez-Diaz G.; Lopez-Martinez A.; Llamas N.; Alcazar M.; Capilla L.; Torres A. **Non-invasive Ventilation in Acute Hypercapnic Respiratory Failure Caused by Obesity Hypoventilation Syndrome and Chronic Obstructive Pulmonary Disease.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186: 1279-1285. **I.F.: 11.08.**

10 Jones H.A.; Soler N. **Quantification of Pulmonary Inflammation by Positron Emission Tomography in Chronic Obstructive Pulmonary Disease A New Horizon in the Era of Biomarkers?** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186: 1071-1073. **I.F.: 11.08.**

11 Tavares Ranzani O.; Ferrer M.; Esperatti M.; Giunta V.; Bassi G.L.; Ribeiro Carvalho C.R.; Torres A. **Association between systemic corticosteroids and outcomes of intensive care unit-acquired pneumonia.** CRITICAL CARE MEDICINE. 40: 2552-2561. **I.F.: 6.33.**

12 Wilson R.; Anzueto A.; Miravitlles M.; Arvis P.; Alder J.; Haverstock D.; Trajanovic M.; Sethi S. **Moxifloxacin versus amoxicillin/clavulanic acid in outpatient acute exacerbations of COPD: MAESTRAL results.** EUROPEAN RESPIRATORY JOURNAL. 40: 17-27. **I.F.: 5.89.**

13 Soler N.; Esperatti M.; Ewig S.; Huerta A.; Agusti C.; Torres A. **Sputum purulence-guided antibiotic use in hospitalised patients with exacerbations of COPD.** EUROPEAN RESPIRATORY JOURNAL. 40: 1344-1353. **I.F.: 5.89.**

14 Martinez-Garcia M.A.; Campos-Rodriguez F.; Soler-Cataluna J.J.; Catalan-Serra P.; Roman-Sanchez P.; Montserrat J.M. **Increased incidence of nonfatal cardiovascular events in stroke patients with sleep apnoea: effect of CPAP treatment.** EUROPEAN RESPIRATORY JOURNAL. 39 (4): 906-912. **I.F.: 5.89.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	197.85	39	21	12
2011	160.67	33	22	6
2012	256.68	49	31	10

15 Bello S.; Lasierra A.B.; Minchole E.; Fandos S.; Ruiz M.A.; Vera E.; De Pablo F.; Ferrer M.; Menendez R.; Torres A. **Prognostic power of proadrenomedullin in community-acquired pneumonia is independent of aetiology.** EUROPEAN RESPIRATORY JOURNAL. 39 (5): 1144-1155. **I.F.: 5.89.**

16 Miravitlles M.; Kruesmann F.; Haverstock D.; Perroncel R.; Choudhri S.H.; Arvis P. **Sputum colour and bacteria in chronic bronchitis exacerbations: a pooled analysis.** EUROPEAN RESPIRATORY JOURNAL. 39 (6): 1354-1360. **I.F.: 5.89.**

17 Carrillo A.; Gonzalez-Diaz G.; Ferrer M.; Martinez-Quintana M.E.; Lopez-Martinez A.; Llamas N.; Alcazar M.; Torres A. **Non-invasive ventilation in community-acquired pneumonia and severe acute respiratory failure.** INTENSIVE CARE MEDICINE. 38 (3): 458-466. **I.F.: 5.40.**

18 Van Vugt S.; Broekhuizen L.; Zuithoff N.; De Jong P.; Butler C.; Hood K.; Coenen S.; Goossens H.; Little P.; Almirall J.; Blasi F.; Chlabicz S.; Davies M.; Godycki-Cwirko M.; Hupkova H.; Kersnik J.; Mierzecki A.; Molstad S.; Moore M.; Schaberg T.; De Sutter A.; Torres A.; Touboul P.; Verheij T. **Incidental Chest Radiographic Findings in Adult Patients With Acute Cough.** ANNALS OF FAMILY MEDICINE. 10: 510-515. **I.F.: 5.35.**

19 Menendez, R.; Sahuquillo-Arce J.M.; Reyes S.; Martinez R.; Polverino E.; Cilloniz C.; Cordoba J.G.; Montull B.; Torres A. **Cytokine Activation Patterns and Biomarkers Are Influenced by Microorganisms in Community-Acquired Pneumonia.** CHEST. 141 (6): 1537-1545. **I.F.: 5.25.**

20 McKenna S.P.; Twiss J.; Crawford S.R.; Oprandi N.C.; Tammaru M.; Miravitlles M. **The living with chronic obstructive pulmonary disease scale was successfully adapted for use in Southern European (Italian and Spanish) and Eastern European (Russian) cultures.** JOURNAL OF CLINICAL EPIDEMIOLOGY. 65: 906-914. **I.F.: 4.27.**

21 Ricard J.D.; Conti G.; Boucherie M.; Hormann C.; Poelaert J.; Quintel M.; Rubertsson S.; Torres A. **A European survey of nosocomial infection control and hospital-acquired pneumonia prevention practices.** JOURNAL OF INFECTION. 65: 285-291. **I.F.: 4.13.**

22 Galante M.; Garin O.; Sicuri E.; Cots F.; Garcia-Altes A.; Ferrer M.; Dominguez A.; Alonso J. **Health Services Utilization, Work Absenteeism and Costs of Pandemic Influenza A (H1N1) 2009 in Spain: A Multicenter-Longitudinal Study.** PLOS ONE. 7 (2). **I.F.: 4.09.**

23 Masa J.F.; Corral J.; Pereira R.; Duran-Cantolla J.; Cabello M.; Hernandez-Blasco L.; Monasterio C.; Alonso-Fernandez A.; Chiner E.; Garcia-Ledesma E.; Rubio M.; Cancelo L.; Carpizo R.; Sacristan L.; Salord N.; Carrera M.; Sancho-Chust J.N.; Embid C.; Vazquez-Polo F.J.; Negrin M.A.; Montserrat J.M. **Cost-Effectiveness of the teletransmission of home respiratory polygraphy for the diagnosis of sleep apnoea and hypopnoea syndrome.** JOURNAL OF SLEEP RESEARCH. 21: 49-49. **I.F.: 3.16.**

24 Schaberg T.; Wilson R.; Anzueto A.; Miravitlles M.; Arvis P.; Alder J.; Haverstock D.; Trajanovic M.; Sethi S. **Prospective, multinational, multicenter, randomized, double blind, double dummy, controlled Trial Comparing the Efficacy and Safety of Moxifloxacin versus Amoxicillin/Clavulanate in Patients with acute Exacerbation of Chronic Bronchitis - Results of the M.** INFECTION. 40: 5-7. **I.F.: 2.66.**

25 Garcia-Polo C.; Alcazar-Navarrete B.; Ruiz-Iturriaga L.A.; Herrejon A.; Ros-Lucas J.A; Garcia-Sidro P.; Tirado-Conde G.; Lopez-Campos J.L.; Martinez-Rivera C.; Costan-Galicia J.; Mayoralas-Alises S.; De Miguel-Diez J.; Miravitlles M. **Factors associated with high healthcare resource utilisation among COPD patients.** RESPIRATORY MEDICINE. 106: 1734-1742. **I.F.: 2.47.**

26 Anzueto A.; Miravitlles M.; Ewig S.; Legnani D.; Heldner S.; Stauch K. **Identifying patients at risk of late recovery (>= 8 days) from acute exacerbation of chronic bronchitis and COPD.** RESPIRATORY MEDICINE. 106: 1258-1267. **I.F.: 2.47.**

27 Diaz-Ravetllat V.; Ferrer M.; Gimferrer-Garolera J.M.; Molins L.; Torres A. **Risk factors of postoperative nosocomial pneumonia after resection of bronchogenic carcinoma.** RESPIRATORY MEDICINE. 106: 1463-1471. **I.F.: 2.47.**

28 Naberan K.; Azpeitia A.; Cantoni J.; Miravitlles M. **Impairment of quality of life in women with chronic obstructive pulmonary disease.** RESPIRATORY MEDICINE. 106 (3): 367-373. **I.F.: 2.47.**

29 Fernandez-Barat L.; Bassi G.L.; Ferrer M.; Bosch A.; Calvo M.; Vila J.; Gabarrus A.; Martinez-Olondris P.; Rigol M.; Esperatti M.; Luque N.; Torres A. **Direct analysis of bacterial viability in endotracheal tube biofilm from a pig model of methicillin-resistant Staphylococcus aureus pneumonia following antimicrobial therapy.** FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY. 65 (2): 309-317 Sp. Iss. **I.F.: 2.44.**

30 Llor C.; Bayona C.; Hernandez S.; Moragas A.; Miravitlles M. **Comparison of adherence between twice- and thrice-daily regimens of oral amoxicillin/clavulanic acid.** RESPIROLOGY. 17 (4): 687-692. **I.F.: 2.42.**

31 Matkovic Z.; Huerta A.; Soler N.; Domingo R.; Gabarrus A.; Torres A.; Miravitlles M. **Predictors of Adverse Outcome in Patients Hospitalised for Exacerbation of Chronic Obstructive Pulmonary Disease.** RESPIRATION. 84 (1): 17-26 2012. **I.F.: 2.26.**

32 Miravitlles M.; Andreu I.; Romero Y.; Sitjar S.; Altes A.; Anton E. **Difficulties in differential diagnosis of COPD and asthma in primary care.** BRITISH JOURNAL OF GENERAL PRACTICE. 62 (595): 72-73. **I.F.: 1.83.**

33 Carcelero E.; Soy D. **Antibiotic dose adjustment in the treatment of MRSA infections in patients with acute renal failure undergoing continuous renal replacement therapies.** ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 30 (5): 249-256. **I.F.: 1.49.**

34 Miravitlles M.; Llor C.; Calvo E.; Diaz S.; Diaz-Cuervo H.; Gonzalez-Rojas N. **Validation of the Spanish version of the Chronic Obstructive Pulmonary Disease-Population Screener (COPD-PS). Its usefulness and that of FEV1/FEV6 for the diagnosis of COPD.** MEDICINA CLINICA. 139: 522-530. **I.F.: 1.38.**

35 Lucena C.M.; Martinez-Olondris P.; Badia J.R.; Xaubet A.; Ferrer M.; Torres A.; Agusti C. **Fiberoptic bronchoscopy in a respiratory intensive care unit.** MEDICINA INTENSIVA. 36: 389-395. **I.F.: 1.07.**

36 Fernandez-Campos F.; Calpena A.; Soy D.; Colom H. **Determination of total and unbound concentrations of valproic acid in human plasma by chromatography-tandem mass spectometry.** JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES. 35 (9): 1171-1183. **I.F.: 0.71.**

37 Miravitlles M.; Soler-Cataluna J.J.; Calle M.; Molina J.; Almagro P.; Quintano J.A.; Riesco J.A.; Trigueros J.A.; Pinera P.; Simon A.; Lopez-Campos J.L.; Soriano J.B.; Ancochea J. **Spanish COPD Guidelines (GesEPOC): Pharmacological treatment of stable COPD.** ATENCION PRIMARIA. 44(7):425-37. **I.F.: 0.63.**

38 Fernandez-Barat L.; Ferrer M.; Sierra J.M.; Soy D.; Guerrero L.; Vila J.; Bassi G.L.; Cortadellas N.; Martinez-Olondris P.; Rigol M.; Esperatti M.; Luque N.; Saucedo L.M.; Agusti C.; Torres A. **Linezolid limits burden of methicillin-resistant Staphylococcus aureus in biofilm of tracheal tubes.** CRITICAL CARE MEDICINE. 40: 2385-2389. **I.F.: 6.33.**

39 Guerrero A.; Montserrat J.M.; Farre R.; Masa F.; Duran J.; Embid C. **Automatic CPAP Performance in Patients with Sleep Apnea Plus COPD.** COPD-JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. 9: 382-389. **I.F.: 1.79.**

40 Cilloniz C.; Ewig S.; Polverino E.; Marcos M.A.; Prina E.; Sellares J.; Ferrer M.; Ortega M.; Gabarrus A.; Mensa J.; Torres A. **Community-acquired pneumonia in outpatients: aetiology and outcomes.** EUROPEAN RESPIRATORY JOURNAL. 40: 931-938. **I.F.: 5.89.**

41 Cilloniz C.; Ewig S.; Menendez R.; Ferrer M.; Polverino E.; Reyes S.; Gabarrus A.; Marcos M.A.; Cordoba J.; Mensa J.; Torres A. **Bacterial co-infection with H1N1 infection in patients admitted with community acquired pneumonia.** JOURNAL OF INFECTION. 65: 223-230. **I.F.: 4.13.**

42 Carcelero E.; Soy D.; Guerrero L.; Poch E.; Fernandez J.; Castro P.; Ribas J. **Linezolid Pharmacokinetics in Patients With Acute Renal Failure Undergoing Continuous Venovenous Hemodiafiltration.** JOURNAL OF CLINICAL PHARMACOLOGY. 52: 1430-1435. **I.F.: 2.91.**

43 Liapikou A.; Polverino E.; Ewig S.; Cilloniz C.; Marcos M.A.; Mensa J.; Bello S.; Martin-Loeches I.; Menendez R.; Torres A. **Severity and outcomes of hospitalised community-acquired pneumonia in COPD patients.** EUROPEAN RESPIRATORY JOURNAL. 39 (4): 855-861. **I.F.: 5.89.**

44 Nogue S.; Cino J.; Civeira E.; Puig-uriguer J.; Burillo-Putze G.; Duenas A.; Soy D.; Aguilar R.; Corominas N. **Digitalis poisoning: the basis for treatment with antidigoxin antibodies.** EMERGENCIAS. 24: 462-475. **I.F.: 2.49.**

45 Almendros I.; Montserrat J.M.; Torres M.; Bonsignore M.R.; Chimenti L.; Navajas D.; Farré R. **Obesity and intermittent hypoxia increase tumor growth in a mouse model of sleep apnea.** SLEEP MEDICINE. 13(10):1254-60. **I.F.: 3.40.**

46 Jobin V.; Rigau J.; Beauregard J.; Farre R.; Monserrat J.; Bradley T.D.; Kimoff R.J. **Evaluation of upper airway patency during Cheyne-Stokes breathing in heart failure patients.** EUROPEAN RESPIRATORY JOURNAL. 40(6):1523-30. **I.F.: 5.89.**

47 Sellarés J.; Loureiro H.; Ferrer M.; Amaro R.; Farré R.; Torres A. **The effect of spontaneous breathing on systemic interleukin-6 during ventilator weaning.** EUROPEAN RESPIRATORY JOURNAL. 39(3):654-60. **I.F.: 5.89.**

48 Almendros I.; Montserrat J.M.; Ramírez J.; Torres M.; Duran-Cantolla J.; Navajas D.; Farré R. **Intermittent hypoxia enhances cancer progression in a mouse model of sleep apnoea.** EUROPEAN RESPIRATORY JOURNAL. 39(1):215-7. **I.F.: 5.89.**

49 Herth F.J.F.; Noppen M.; Valipour A.; Leroy S.; Vergnon J.M.; Ficker J.H.; Egan J.J.; Gasparini S.; Agusti C.; Holmes-Higgin D.; Ernst A. **Efficacy predictors of lung volume reduction with Zephyr valves in a European cohort.** EUROPEAN RESPIRATORY JOURNAL. 39 (6): 1334-1342. **I.F.: 5.89.**

REVIEWS
I.F.: 83.70

1 Decramer M.; Janssens W.; Miravitlles M. **Chronic obstructive pulmonary disease.** LANCET. 379 (9823): 1341-1351. **I.F.: 38.28.**

2 Miravitlles M. **Alpha-1-antitrypsin and other proteinase inhibitors.** CURRENT OPINION IN PHARMACOLOGY. 12 (3): 309-314. **I.F.: 6.86.**

3 Welte T.; Torres A.; Nathwani D. **Clinical and economic burden of community-acquired pneumonia among adults in Europe.** THORAX. 67 (1): 71-79. **I.F.: 6.84.**

4 Bonsignore M.R.; McNicholas W.T.; Montserrat J.M.; Eckel J. **Adipose tissue in obesity and obstructive sleep apnoea.** EUROPEAN RESPIRATORY JOURNAL. 39 (3): 746-767. **I.F.: 5.89.**

5 Ewig S.; Welte T.; Torres A. **Is healthcare-associated pneumonia a distinct entity needing specific therapy?** CURRENT OPINION IN INFECTIOUS DISEASES. 25 (2): 166-175. **I.F.: 4.93.**

6 Ramirez P.; Fernandez-Barat L.; Torres A. **New therapy options for MRSA with respiratory infection/pneumonia.** CURRENT OPINION IN INFECTIOUS DISEASES. 25 (2): 159-165. **I.F.: 4.93.**

7 Sellares J.; Ferrer M.; Torres A. **Predictors of weaning after acute respiratory failure.** MINERVA ANESTESIOLOGICA. 78: 1046-1053. **I.F.: 2.66.**

8 Ramirez P.; Bassi G.L.; Torres A. **Measures to prevent nosocomial infections during mechanical ventilation.** CURRENT OPINION IN CRITICAL CARE. 18 (1): 86-92. **I.F.: 2.51.**

9 Luisetti M.; Balfour-Lynn I.M.; Johnson S.R.; Miravitlles M.; Strange C.; Trapnell B.C.; Van Bronswijk H.; Vogelmeier C. **Perspectives for improving the evaluation and access of therapies for rare lung diseases in Europe.** RESPIRATORY MEDICINE. 106 (6): 759-768. **I.F.: 2.47.**

10 Torres A.; Ramirez P.; Montull B.; Menendez R. **Biomarkers and Community-Acquired Pneumonia: Tailoring Management with Biological Data.** SEMINARS IN RESPIRATORY AND CRITICAL CARE MEDICINE. 33 (3): 266-271. **I.F.: 2.43.**

11 Benito N.; Moreno A.; Miro J.M.; Torres A. **Pulmonary infections in HIV-infected patients: an update in the 21st century.** EUROPEAN RESPIRATORY JOURNAL. 39 (3): 730-745. **I.F.: 5.89.**

EDITORIALS
I.F.: 13.61

1 Torres A. **Antibiotic Treatment Against Methicillin-Resistant Staphylococcus aureus Hospital- and Ventilator-acquired Pneumonia: A Step Forward but the Battle Continues.** CLINICAL INFECTIOUS DISEASES. 54 (5): 630-632. **I.F.: 9.15.**

2 Torres A.; Bassi G.L.; Ferrer M. **Diagnosis of ventilator-associated pneumonia: Do we need surrogate parameters?** CRITICAL CARE MEDICINE. 40: 3311-3312. **I.F.: 6.33.**

3 Artigas A.; Pelosi P.; Dellweg D.; Brochard L.; Ferrer M.; Geiseler J.; Larsson A.; Nava S.; Navalesi P.; Noel J.L.; Orfanos S.; Palange P.; Schoenhofer B.; Vassilakopoulos T.; Simonds A. **Respiratory critical care HERMES syllabus: defining competencies for respiratory doctors.** EUROPEAN RESPIRATORY JOURNAL. 39 (6): 1294-1297. **I.F.: 5.89.**

4 Miravitlles M. **Inflammation, smoking and chronic obstructive pulmonary disease. Too many questions, few responses.** MEDICINA CLINICA. 139 (2): 65-66. **I.F.: 1.38.**

GRANTS FOR RESEARCH IN PROGRESS

Torres A. **Fisiopatologia i tractament de les malalties respiratòries.** Sponsored by: AGAUR 2009_SGR_911. Duration: 15/09/2009 - 31/12/2013.

Torres A. **An integrated platform enabling Theranostic applications at the Point of Primary CareCentre coordinador: NTE.** Sponsored by: European Commission 216027. Duration: 01/03/2008 -31/08/2012.

Ferrer M. **Eficacia de los glucocorticoides en la neumonía asociada a la ventilación médica estudio clínico aleatorizado.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC07/90390. Duration: 29/10/2007 - 31/12/2012.

Soler N. **Utilidad del tratamiento antibiótico en las agudizaciones de la enfermedad pulmonar obstructiva crónica (EPOC) sin purulencia en el esputo: ensayo clinico aleatorizado, controlado y doble ciego de eficacia y seguridad.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC08/00061. Duration: 01/01/2009 - 31/12/2013.

Ferrer M. **Papel de la respuesta inflamatoria y el estrés oxidativo sistémico en la retirada de la ventilación mecánica invasiva.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0232. Duration: 01/01/2009 - 30/09/2012.

Montserrat J.M. **Efectos sistémicos del síndrome de las apneas durante el sueño. Análisis mediante modelos animales y estudios cognitivos en humanos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0277. Duration: 31/12/2008 - 31/03/2012.

Torres A. **Health Care Associated Pneumonia: Etiología microbiana, factores de riesgo y pronóstico.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0240. Duration: 01/01/2009 - 31/12/2012.

Torres A. **Efectos de los flujos insipartorio-respiratorio y la presión positiva al final de la espiración en el aclaramiento de secreciones y la neumonía asociada al ventilador.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1249. Duration: 01/01/2010 - 31/12/2012.

Ballester E. **Efecto del tratamiento con presión continua positiva en la vía aérea (CPAP) sobre las cifras tensionales en pacientes con hipertensión arterial resistente. Estudio multicéntrico y aleatorizado. Estudio hiparco.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1517. Duration: 01/01/2010 - 30/12/2012.

Agusti C. **Complicaciones pulmonares en pacientes receptores de trasplante de progenitores hematopoyéticos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/00507. Duration: 01/01/2011 - 31/12/2013.

Soler N. **Impacto de la infección vírica en las agudizaciones de la enfermedad pulmonar obstructiva crónica (AEPOC): caracterización clínica, gravedad y factores pronósticos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01504. Duration: 01/01/2011 - 31/12/2013.

Soy D. **Estudio farmacocinético y farmacodinámico de los antibióticos de amplio espectro de utilización más frecuente en la unidad de cuidados intensivos (piperacilina/tazobactam, meropenem, ceftriaxona) en pacientes con shock séptico sometidos a depuraciónrenal de alto flujo.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-159. Duration: 01/01/2012 - 31/12/2013.

Montserrat J.M. **Consecuencias y tratamiento de la apnea obstructiva del sueño en la edad avanzada.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01892. Duration: 01/01/2012 -31/12/2014.

DOCTORAL THESES

Torres A. **Impact of guidelines for stratification of community acquired and hospital pneumonia severity and treatment.** PhD student: Adamantia Liapikou.

Torres A. **Neumonia asociada a la ventilación mecánica por staphilococcus aureus meticilin-resistente en un modelo porcino.** PhD student: Maria Del Pilar Martínez Olondris.

Torres A. **Risk factors of postoperative nosocomial pneumonia after resection of bronchogenic carcinoma.** PhD student: Vanessa Díaz Ravetllat.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Physiopathological mechanisms of respiratory illnesses

TEAM INVOLVED IN: ciberes

GROUP MEMBERS

TEAM LEADER
Joan Albert Barberà (Hospital Clínic)
Tel.: 93 227 57 47
E-mail: jbarbera@clinic.cat

RESEARCHERS:
Josep Roca (Hospital Clínic)
Robert Rodríguez-Roisín (Hospital Clínic)
Elizabeth Zavala (Hospital Clínic)
Graciela Martínez-Pallí (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Isabel Blanco (Hospital Clínic-IDIBAPS)
Melina Musri (IDIBAPS)
Olga Tura-Ceide (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Ebymar Arismendi (Fundació Clínic)
Jéssica Garcia (Fundació Clínic)
David Domínguez (Fundació Clínic)
Borja Lobo (Fundació Clínic)
Roberto del Pozo (Fundació Clínic)
Núria Coll (Fundació Clínic)
Maria Lorena Coronel (Fundació Clínic)

TECHNICIANS:
Raquel Puig-Pey (IDIBAPS)
Cristina Bonjoch (Fundació Clínic)

NURSING STAFF:
Conchi Gistau (Hospital Clínic)
Yolanda Torralba (CIBERES)
Maite Simó (Hospital Clínic)
Maria Palomo (Fundació Clínic)
Xavier Alsina (Hospital Clínic)
Beatriz Valeiro (Fundació Clínic)
Laura Villa (Fundació Clínic)

ADMINISTRATIVE STAFF:
Mirjam Hillenius (Fundació Clínic)
Julio Más (Fundació Clínic -CIBERES)

PHYSIOTHERAPISTS:
Anael Barberan (Fundació Clínic)
Ane Arbillaga (Fundació Clínic)

COLLABORATORS:
Albert Alonso (Fundació Clínic)
Felip Burgos (Hospital Clínic)
Federico Gómez (UB)
Carme Hernández (Hospital Clínic)
Victor I. Peinado (CIBERES)
Jordi Vilaró (Fundació Clínic)
Elena Gimeno (IDIBAPS)
Marta Cascante (UB)
Eva Rivas (Hospital Clínic)
Mª José Arguis (Hospital Clínic)

STRATEGIC OBJECTIVES

1. Increase the understanding of the cellular and molecular mechanisms involved in the development of pulmonary vascular diseases.
2. Identification of new biomarkers and therapeutic targets for pulmonary hypertension.
3. Characterization of factors involved in the development of extrapulmonary disorders in chronic obstructive pulmonary disease (COPD).
4. Determination of intra-and extrapulmonary manifestations of severe obesity.
5. Evaluation of the role of stem cells in lung injury and repair mechanisms.
6. Get personalized medical care for chronic respiratory diseases from a systems medicine strategy.

MAIN LINES OF RESEARCH

1. Clinical research in pulmonary hypertension: biomarkers and new therapies.
2. Endothelial dysfunction and vascular remodeling.
3. Experimental models of COPD and pulmonary hypertension.
4. Stem and progenitor cells.
5. Interaction between airway, lung and systemic inflammation in COPD and severe obesity.
6. Pathophysiology of pulmonary gas exchange.
7. Systems medicine.

PUBLICATIONS

ORIGINALS
I.F.: 62.04

1 Fermoselle C.; Rabinovich R.; Ausin P.; Puig-Vilanova E.; Coronell C.; Sanchez F.; Roca J.; Gea J.; Barreiro E. **Does oxidative stress modulate limb muscle atrophy in severe COPD patients?** EUROPEAN RESPIRATORY JOURNAL. 40: 851-862. **I.F.: 5.89.**

2 Burgos F.; Disdier C.; Lopez de Santamaria E.; Galdiz B.; Roger N.; Rivera M.L.; Hervas R.; Duran-Tauleria E.; Garcia-Aymerich J.; Roca J. **Telemedicine enhances quality of forced spirometry in primary care.** EUROPEAN RESPIRATORY JOURNAL. 39 (6): 1313-1318. **I.F.: 5.89.**

3 Rodriguez D.A.; Kalko S.; Puig-Vilanova E.; Perez-Olabarria M.; Falciani F.; Gea J.; Cascante M.; Barreiro E.; Roca J. **Muscle and blood redox status after exercise training in severe COPD patients.** FREE RADICAL BIOLOGY AND MEDICINE. 52 (1): 88-94. **I.F.: 5.42.**

4 Diego A.; Alcarraz-Vizan G.; Diaz-Moralli S.; Reed M.; Gomez F.P.; Falciani F.; Guenther U.; Roca J.; Cascante M. **Plasma metabolic profile in COPD patients: effects of exercise and endurance training.** METABOLOMICS. 8 (3): 508-516. **I.F.: 4.50.**

5 Zock J.P.; Rodriguez-Trigo G.; Rodriguez-Rodriguez E.; Espinosa A.; Pozo-Rodriguez F.; Gomez F.; Fuster C.; Castano-Vinyals G.; Anto J.M.; Barbera J.A. **Persistent respiratory symptoms in clean-up workers 5 years after the Prestige oil spill.** OCCUPATIONAL AND ENVIRONMENTAL MEDICINE. 69 (7): 508-513. **I.F.: 3.02.**

6 Dahlen B.; Gomez F.P.; Casas A.; Howarth P.H.; Dahlen S.E.; Rodriguez-Roisin R. **Salbutamol but not ipratropium abolishes leukotriene D-4-induced gas exchange abnormalities in asthma.** EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY. 68: 1375-1383. **I.F.: 2.84.**

7 Ruiz-Esquide V.; Gómara M.J.; Peinado V.I.; Gómez Puerta J.A.; Barberá J.A.; Cañete J.D.; Haro I.; Sanmartí R. **Anti-citrullinated peptide antibodies in the serum of heavy smokers without rheumatoid arthritis. A differential effect of chronic obstructive pulmonary disease?** CLIN RHEUMATOL. 31(7):1047-50. **I.F.: 2.00.**

8 Escribano-Subias P.; Blanco I.; López-Meseguer M.; Lopez-Guarch C.J.; Roman A.; Morales P.; Castillo-Palma M.J.; Segovia J.; Gómez-Sanchez M.A.; Barberà J.A.; REHAP investigators. **Survival in pulmonary hypertension in Spain: insights from the Spanish registry.** EUROPEAN RESPIRATORY JOURNAL. 40(3):596-603. **I.F.: 5.89.**

9 Jaïs X.; Olsson K.M.; Barbera J.A.; Blanco I.; Torbicki A.; Peacock A.; Vizza C.D.; Macdonald P.; Humbert M.; Hoeper M.M. **Pregnancy outcomes in pulmonary arterial hypertension in the modern management era.** EUROPEAN RESPIRATORY JOURNAL. 40(4):881-5. **I.F.: 5.89.**

10 Domínguez-Fandos D.; Peinado V.I.; Puig-Pey R.; Ferrer E.; Musri M.M.; Ramírez J.; Barberà J.A. **Pulmonary inflammatory reaction and structural changes induced by cigarette smoke exposure in the Guinea pig.** COPD. 9(5):473-84. **I.F.: 1.79.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	121.18	16	11	1
2011	91.96	21	10	3
2012	62.04	16	10	3

11 Olea E.; Ferrer E.; Prieto-Lloret J.; Gonzalez-Martin C.; Vega-Agapito V.; Gonzalez-Obeso E.; Agapito T.; Peinado V.; Obeso A.; Barbera J.A.; Gonzalez C. **Effects of cigarette smoke and chronic hypoxia on ventilation in guinea pigs. Clinical significance.** ADV EXP MED BIOL. 758:325-32. **I.F.: 1.09.**

12 Blasi A.; Beltran J.; Pereira A.; Martinez-Palli G.; Torrents A.; Balust J.; Zavala E.; Taura P.; Garcia-Valdecasas J.C. **An assessment of thromboelastometry to monitor blood coagulation and guide transfusion support in liver transplantation.** TRANSFUSION. 52(9):1989-98. **I.F.: 3.22.**

13 Córdova H.; Guarner-Argente C.; Martínez-Pallí G.; Navarro R.; Rodríguez-D'Jesús A.; Rodríguez de Miguel C.; Beltrán M.; Martínez-Zamora M.À.; Comas J.; Lacy A.M.; Thompson C.C.; Fernández-Esparrach G. **Gastric Emptying is Delayed in Transgastric Notes: A Randomized Study in Swine.** JOURNAL OF SURGICAL RESEARCH. 174 (2): E61-E67. **I.F.: 2.25.**

14 Balderramo D.; Sendino O.; Burrel M.; Real M.I.; Blasi A.; Martinez-Palli G.; Bordas J.M.; Garcia-Valdecasas J.C.; Rimola A.; Navasa M.; Llach J.; Cardenas A. **Risk factors and outcomes of failed endoscopic retrograde cholangiopancreatography in liver transplant recipients with anastomotic biliary strictures: A case-control study.** LIVER TRANSPLANTATION. 18 (4): 482-489. **I.F.: 3.39.**

15 Guarner-Argente C.; Martínez-Pallí G.; Navarro-Ripoll R.; Córdova H.; Beltrán M.; Martínez-Zamora M.A.; Comas J.; De Miguel C.R.; Rodríguez-D'Jesús A.; Filella X.;Hernández-Cera C.; Lacy A.M.; Thompson C.C.; Fernández-Esparrach G. **Inflammatory impact of NOTES peritoneoscopy is not different from that of laparoscopy: a randomized comparative study in a survival porcine model.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (2): 374-380. **I.F.: 4.01.**

16 Navarro-Ripoll R.; Martínez-Pallí G.; Guarner-Argente C.; Córdova H.; Martínez-Zamora M.A.; Comas J.; Rodríguez de Miguel C.; Beltrán M.; Rodríguez-D'Jesús A.; Hernández-Cera C.; Llach J.; Balust J.; Fernández-Esparrach G. **On-demand endoscopic CO2 insufflation with feedback pressure regulation during natural orifice transluminal endoscopic surgery (NOTES) peritoneoscopy induces minimal hemodynamic and respiratory changes.** GASTROINTESTINAL ENDOSCOPY. 76 (2): 388-395. **I.F.: 4.92.**

REVIEWS
I.F.: 1.06

1 Vestbo J.; Hurd S.S.; Rodriguez-Roisin R. **The 2011 revision of the global strategy for the diagnosis, management and prevention of COPD (GOLD) - why and what?** CLINICAL RESPIRATORY JOURNAL. 6: 208-214. **I.F.: 1.06.**

EDITORIALS
I.F.: 11.08

1 Rodriguez-Roisin R.; Llufriu S. **White and Gray Matter Impairment in Chronic Obstructive Pulmonary Disease What's the Matter?** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186: 207-208. **I.F.: 11.08.**

MULTICENTRICS
I.F.: 15.45

1 Sandoval J.; Torbicki A.; Souza R.; Ramírez A.; Kurzyna M.; Jardim C.; Jerjes-Sánchez Díaz C.; Teal S.A.; Hwang L.J.; Pulido T.; STRIDE-4 investigators. **Safety and efficacy of sitaxsentan 50 and 100 mg in patients with pulmonary arterial hypertension.** PULM PHARMACOL THER. 25(1):33-9. **I.F.: 2.80.**

2 Marin A.; Garcia-Aymerich J.; Sauleda J.; Belda J.; Millares L.; García-Núñez M.; Serra I.; Benet M.; Agustí A.; Antó J.M.; Monsó E.; PAC-COPD Study Group. **Effect of Bronchial Colonisation on Airway and Systemic Inflammation in Stable COPD.** COPD-JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. 9 (2): 121-130. **I.F.: 1.79.**

3 De Batlle J.; Mendez M.; Romieu I.; Balcells E.; Benet M.; Donaire-Gonzalez D.; Ferrer J.J.; Orozco-Levi M.; Antó J.M.; Garcia-Aymerich J.; PAC-COPD Study Group. **Cured meat consumption increases risk of readmission in COPD patients.** EUROPEAN RESPIRATORY JOURNAL. 40(3):555-60. **I.F.: 5.89.**

4 De Batlle J.; Sauleda J.; Balcells E.; Gómez F.P.; Méndez M.; Rodriguez E.; Barreiro E.; Ferrer J.J.; Romieu I.; Gea J.; Antó J.M.; Garcia-Aymerich J.; PAC-COPD Study Group. **Association between Ω3 and Ω6 fatty acid intakes and serum inflammatory markers in COPD.** J NUTR BIOCHEM. 23(7):817-21. **I.F.: 3.89.**

5 Herrera-Gutiérrez M.E.; Seller-Pérez G.; Maynar-Moliner J.; Sánchez-Izquierdo Riera J.Á.; Los Investigadores del Estudio COFRADE. **Variability in renal dysfunction defining criteria and detection methods in intensive care units: are the international consensus criteria used for diagnosing renal dysfunction?** MED INTENSIVA. 36(4):264-9. **I.F.: 1.07.**

GRANTS FOR RESEARCH IN PROGRESS

Barbera J.A. **Estudio de nuevas dianas terapéuticas en el tratamiento de la hipertensión pulmonar asociada a la enfermedad pulmonar obstructiva crónica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0536. Duration: 01/01/2010 - 31/12/2012.

Barbera J.A. **RETICS de Biobancos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD09/0076/00038. Duration: 01/01/2010 - 31/12/2013.

Roca J. **SYNERGY-COPD: Modelling and simulation environment for Systems medicine (CHronic Obstructive Pulmonary Disease – COPD- as a use case).** Sponsored by: Comisión Europea. FP7-ICT-270086. Duration: 2011-13.

Roca J. **Indicators for Monitoring COPD and Asthma in the Eu - IMCA 11Centre coordinador: Fundació IMIM.** Sponsored by: European Commission 2005121. Duration: 15/12/2006 - 09/08/2012.

Roca J. **Healthier and Independent Living for Chronic Patients and Elderly - NEXES.** Sponsored by: European Commission 225025. Duration: 01/05/2008 - 31/05/2012.

Roca J. **Servicios innovadores de atención integrada para pacientes crónicos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/90634. Duration: 01/01/2010 - 30/06/2013.

Rodriguez R. **Obesidad mórbida e inflamación sistémica y pulmonar.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0311. Duration: 31/12/2008 - 31/12/2012.

Bastos R. **Estudio de la pérdida de masa muscular en pacientes con Enfermedad Pulmonar Obstructiva Crónica mediante técnicas de genómica y proteómica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0320. Duration: 01/01/2009 - 30/06/2012.

Roca J. **Desarrollo de un sistema de rehabilitación física domiciliario.** Sponsored by: Ministerio de Economía y Competitividad IPT-2011-1193-900000. Duration: 04/05/2011 - 31/12/2013.

Roca J. **Despliegue de nuevos servicios sanitarios soportados por tecnologías de la información y comunicación (DENSSA-TIC).** Sponsored by: Ministerio de Economía y Competitividad IPT-2011-1333-900000. Duration: 05/05/2011 - 31/12/2014.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Clinical and Experimental Respiratory Immunoallergy (IRCE)

GROUP MEMBERS

TEAM LEADER
Joaquim Mullol i Miret (IDIBAPS)
Tel.: 93 227 98 72
E-mail: jmullol@clinic.cat

RESEARCHERS:
César Picado Vallés (Hospital Clínic)
Antoni Xaubet Mir (Hospital Clínic)
Joan Bartra Tomàs (Hospital Clínic)
Antonio Valero Santiago (Hospital Clínic)
Laura Pujols i Tarrés (IDIBAPS)
Isam Alobid (Hospital Clínic)
Margarita Martin Andorra (UB)

POST-DOCTORAL RESEARCHERS:
Josep Maria Guilemany (Hospital Clínic)
Jordi Roca i Ferrer (UB)
Mariona Pascal Capdevila (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Rosa Maria Muñoz Cano (Río Ortega, FIS)
Francisco Garcia Garcia (FIS)
Laura Fernández Bertolin (IDIBAPS)
Francisco de Borja Callejas (FIS)
Marta Gabasa Fernández (CIBERES)
Suha Jabr (Ministeri Assumptes Exteriors i Cooperació)
Jaume Sánchez López (Fundació Clínic)
Maria Rueda Garcia (Fundació Clínic)
Liliana Carvalho (Fundació Clínic)
Franklin Mariño Sánchez (Hospital Clínic)
Erola Ainsua Enrich (Fundació Clínic)
Eduardo Lehrer Coriat (Hospital Clínic)
Inés Tejero Royes (Marató TV3, IDIBAPS)

TECHNICIANS:
Mireia Fuentes Prado (FIS, IDIBAPS)
María Pérez González (Fundació Clínic)

NURSING STAFF:
Sílvia Centellas (Hospital Clínic)
Gemma López Sáiz (Fundació Clínic)
Rosa Cortés Aguilar (Hospital Clínic)

ADMINISTRATIVE STAFF:
Elena Arrufat (Fundació Clínic)

COLLABORATORS:
Assumpció Martínez-Antón (CCMD, NIH)
Yvonne Torres (Ministeri d'Educació, Govern de Panamà)
Rosa Torres (FIS)
María del Carmen Vennera (CIBERES)
Joaquim Ensenyat Nora (Hospital Clínic)
Damiana Alvarez Errico (Juan de la Cierva)
Manuel Bernal Sprekelsen (Hospital Clínic)

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Clinical and Experimental Respiratory Immunoallergy (IRCE)

STRATEGIC OBJECTIVES

1. Investigation of the mechanisms regulating inflammatory response and remodelling in bronchial asthma, rhinosinusitis, and pulmonary interstitial diseases.
2. Investigation of the mechanisms underlying food allergies.
3. Investigation of the mechanisms involved in anaphylaxis of complex etiopathogenesis.
4. Investigation of the mechanisms involved in the loss of smell.

MAIN LINES OF RESEARCH

1. Molecular and cellular bases of the inflammatory response in asthma, rhinosinusitis and pulmonary interstitial diseases.
2. Role of the MUC genes in the modulation of mucosal secretion in respiratory diseases, remodelling of respiratory diseases, and their regulation with glucocorticoids.
3. Role of arachidonic acid metabolites (prostaglandins and leukotrienes) in the etiopathogenesis of asthma, rhinosinusitis, and pulmonary interstitial diseases.
4. Role of the angiotensin system in lung fibrosis.
5. Study of the mechanisms regulating the response to glucocorticoid treatment in inflammatory upper and lower respiratory diseases.
6. Study of the mechanisms involved in severe asthma and relationship with alterations in glucocorticoid receptor function.
7. Study of the relationship between upper airway disorders (nasal and sinuses) and alterations of the lower airway (asthma, bronchiectasis, and chronic obstructive pulmonary disease).
8. Study of the mechanisms regulating the response to food allergens and relationship with non-steroidal anti-inflammatory drugs and arachidonic acid metabolism.
9. New therapeutic modalities (endothelin, proteosome and COX-2 inhibitors; prostaglandin E2 receptor 3 agonists) in asthma, rhinosinusitis, and pulmonary interstitial diseases based on in vitro models and animal models of asthma and pulmonary fibrosis.
10. Study of the mechanisms of anaphylactic reactions of multiple origin (indolent mastocytosis, predisposing genetic alterations).
11. Study of quality of life in nasosinusal pathology.
12. Loss of smell: role of sinonasal inflammation, Traumatic Brain Injury (TBI), Parkinson's disease, and congenital disorders.
13. Identification and characterization of adapter molecules in the signaling of IgE high affinity receptor and KIT receptor.
14. Role of microRNA in the differentiation of human respiratory mucosa, Comparison between nasal and bronchial epithelial cells.

RESEARCH GROUP

NASOSINUSAL INFLAMMATORY AND OLFACTORY RESEARCH GROUP (INGENIO)

Group Leader: Joaquim Mullol (IDIBAPS)

In this group we investigate different aspects of inflammatory sinonasal disorders (allergic and non-allergic rhinitis, chronic rhinosinusitis, nasal polyposis):

- We explore the physiopathological mechanisms of nasosinusal mucosal hypersecretion and the regulation of mucins and MUC genes.
- We analyze the physiopathological and clinical association of nasosinusal disorders with asthma, atopy, NSAID intolerance and bronchiectasia, and their impact upon patient quality of life.
- We evaluate olfactory alterations and their mechanisms of action as diagnostic and severity markers. We have validated a proprietary olfactometric test (BAST-24), and have carried out an epidemiological study (OLFACAT) on olfactory function in the Catalan population.
- We use an eosinophil and epithelial cell culture model for testing and comparing the antiinflammatory action of different drugs employed in situations of respiratory inflammation, such as corticosteroids, antihistamines, and antileukotrienes.

PUBLICATIONS

ORIGINALS
I.F.: 79.70

1 Ros C.; Alobid I.; Centellas S.; Balasch J.; Mullol J.; Castelo-Branco C. **Loss of smell but not taste in adult women with Turner's syndrome and other congenital hypogonadisms.** MATURITAS. 73: 244-250. **I.F.: 2.77.**

2 Bousquet J.; Schuenemann H.J.; Samolinski B.; Demoly P.; Baena-Cagnani C.E.; Bachert C.; Bonini S.; Boulet L.P.; Bousquet P.J.; Brozek J.L.; Canonica G.W.; Casale T.B.; Cruz A.A.; Fokkens W.J.; Fonseca J.A.; Van Wijk R.G.; Grouse L.; Haahtela T.; Khaltaev N.; Kuna P.; Lockey R.F.; Carlsen K.C.L.; Mullol J.; et. al. **Allergic Rhinitis and its Impact on Asthma (ARIA): Achievements in 10 years and future needs.** JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY. 130: 1049-1062. **I.F.: 11.00.**

3 Montoro J.; Del Cuvillo A.; Mullol J.; Molina X.; Bartra J. Davila I.; Ferrer M.; Jauregui I.; Sastre J.; Valero A. **Validation of the modified allergic rhinitis and its impact on asthma (ARIA) severity classification in allergic rhinitis children: the PEDRIAL study.** ALLERGY. 67: 1437-1442. **I.F.: 6.27.**

4 Serra-Pages M.; Olivera A.; Torres R.; Picado C.; De Mora F.; Rivera J. **E-prostanoid 2 receptors dampen mast cell degranulation via cAMP/PKA-mediated suppression of IgE-dependent signaling.** JOURNAL OF LEUKOCYTE BIOLOGY. 92: 1155-1165. **I.F.: 4.99.**

5 Garcia-Garcia F.J.; Mullol J.; Perez-Gonzalez M.; Pujols L.; Alobid I.; Roca-Ferrer J.; Picado C. **Signal Transduction Pathways (MAPKs, NF-kappa B, and C/EBP) Regulating COX-2 Expression in Nasal Fibroblasts from Asthma Patients with Aspirin Intolerance.** PLOS ONE. 7. **I.F.: 4.09.**

6 Pujols L.; Fernández-Bertolín L.; Fuentes-Prado M.; Alobid I.; Roca-Ferrer J.; Agell N.; Mullol J.; Picado C. **Proteasome Inhibition Reduces Proliferation, Collagen Expression, and Inflammatory Cytokine Production in Nasal Mucosa and Polyp Fibroblasts.** JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS. 343(1):184-97. **I.F.: 3.83.**

7 Guilemany J.M.; Garcia-Pinero A.; Alobid I.; Centellas S.; Marino F.S.; Valero A.; Bernal-Sprekelsen M.; Picado C.; Mullol J. **The loss of smell in persistent allergic rhinitis is improved by levocetirizine due to reduction of nasal inflammation but not nasal congestion (the CIRANO study).** INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY. 158 (2): 184-190. **I.F.: 2.40.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	58.14	21	5	7
2011	81.17	28	9	11
2012	79.70	24	13	6

8 Sastre J.; Mullol J.; Valero A.; Valiente R. **Efficacy and safety of bilastine 20 mg compared with cetirizine 10 mg and placebo in the treatment of perennial allergic rhinitis.** CURRENT MEDICAL RESEARCH AND OPINION. 28 (1): 121-130. **I.F.: 2.38.**

9 Davila I.; Rondon C.; Navarro A.; Anton E.; Colas C.; Dordal M.T.; Ibanez M.D.; Fernandez-Parra B.; Lluch-Bernal M.; Matheu V.; Montoro J.; Sanchez M.C.; Valero A. **Aeroallergen sensitization influences quality of life and comorbidities in patients with nasal polyposis.** AMERICAN JOURNAL OF RHINOLOGY & ALLERGY. 26(5):e126-31. **I.F.: 2.30.**

10 Carr W.W.; Ratner P.; Munzel U.; Murray R.; Price D.; Canonica G.W.; Mullol J.; Virchow J.C.; Lieberman P.; Meltzer E.; Bachert C. **Comparison of intranasal azelastine to intranasal fluticasone propionate for symptom control in moderate-to-severe seasonal allergic rhinitis.** ALLERGY AND ASTHMA PROCEEDINGS. 33: 450-458. **I.F.: 2.17.**

11 Vennera M.D.; De Llano L.P.; Bardagi S.; Ausin P.; Sanjuas C.; Gonzalez H.; Gullon J.A.; Martinez-Moragon E.; Carretero J.A.; Vera E.; Medina J.F.; Alvarez F.J.; Entrenas L.M.; Padilla A.; Irigaray R.; Picado C. **Omalizumab Therapy in Severe Asthma: Experience from the Spanish Registry-Some New Approaches.** JOURNAL OF ASTHMA. 49 (4): 416-422. **I.F.: 1.52.**

12 Fokkens W.J.; Lund V.J.; Mullol J.; Bachert C.; Alobid I.; Baroody F.; Cohen N.; Cervin A.; Douglas R.; Gevaert P.; Georgalas C.; Goossens H.; Harvey R.; Hellings P.; Hopkins C.; Jones N.; Joos G.; Kalogjera L.; Kern B.; Kowalski M.; Price D.; Riechelmann H.; Schlosser R.; Senior B.; Thomas M.; Toskala E.; Voegels R.; Wang D.Y.; Wormald P.J. **EPOS 2012: European position paper on rhinosinusitis and nasal polyps 2012. A summary for otorhinolaryngologists.** RHINOLOGY. 50 (1): 1-12. **I.F.: 1.32.**

13 Alobid I.; Benitez P.; Valero A.; Munoz R.; Langdon C.; Mullol J. **Oral and intranasal steroid treatments improve nasal patency and paradoxically increase nasal nitric oxide in patients with severe nasal polyposis.** RHINOLOGY. 50 (2): 171-177. **I.F.: 1.32.**

14 Bousquet J.; Anto J.M.; Demoly P.; Schunemann H.J.; Togias A.; Akdis M.; Auffray C.; Bachert C.; Bieber T.; Bousquet P.J.; Carlsen K.H.; Casale T.B.; Cruz A.A.; Keil T.; Carlsen K.C.L.; Maurer M.; Ohta K.; Papadopoulos N.G.; Rodriguez M.R.; Samolinski B.; (Mullol J.) et. al. **Severe Chronic Allergic (and Related) Diseases: A Uniform Approach - A MeDALL - GA(2)LEN - ARIA Position Paper.** INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY. 158 (3): 216-231. **I.F.: 2.40.**

15 Pascal M.; Munoz-Cano R.; Reina Z.; Palacin A.; Vilella R.; Picado C.; Juan M.; Sanchez-Lopez J.; Rueda M.; Salcedo G.; Valero A.; Yaguee J.; Bartra J. **Lipid transfer protein syndrome: clinical pattern, cofactor effect and profile of molecular sensitization to plant-foods and pollens.** CLINICAL AND EXPERIMENTAL ALLERGY. 42: 1529-1539. **I.F.: 5.03.**

16 Palacín A.; Rivas L.A.; Gómez-Casado C.; Aguirre J.; Tordesillas L.; Bartra J.; Blanco C.; Carrillo T.; Cuesta-Herranz J.; Bonny J.A.; Flores E.; García-Alvarez-Eire M.G.; García-Nuñez I.; Fernández F.J.; Gamboa P.; Muñoz R.; Sánchez-Monge R.; Torres M.; Losada S.V.; Villalba M.; Vega F.; Parro V.; Blanca M.; Salcedo G.; Díaz-Perales A. **The involvement of thaumatin-like proteins in plant food cross-reactivity: a multicenter study using a specificprotein microarray.** PLOS ONE. 7(9):e44088. **I.F.: 4.09.**

17 Valero A.; Muñoz-Cano R.; Sastre J.; Navarro A.M.; Martí-Guadaño E.; Dávila I.; Del Cuvillo A.; Colás C.; Antépara I.; Izquierdo I.; Mullol J. **The impact of allergic rhinitis on symptoms, and quality of life using the new criterion of ARIA severity classification.** RHINOLOGY. 50(1):33-6. **I.F.: 1.32.**

18 Pfaar O.; Mullol J.; Anders C.; Hörmann K.; Klimek L. **Cyclamen europaeum nasal spray, a novel phytotherapeutic product for the management of acute rhinosinusitis: a randomized double-blind, placebo-controlled trial.** RHINOLOGY. 50(1):37-44. **I.F.: 1.32.**

19 Serrano C.D.; Valero A.; Bartra J.; Roca-Ferrer J.; Muñoz-Cano R.; Sánchez-López J.; Mullol J.; Picado C. **Nasal and Bronchial Inflammation After Nasal Allergen Challenge: Assessment Using Noninvasive Methods.** J INVEST ALLERG CLIN. 22(5):351-6. **I.F.: 2.27.**

20 Benito Pescador D.; Isidoro-García M.; García-Solaesa V.; Pascual de Pedro M.; Sanz C.; Hernández-Hernández L.; Sánchez-López J.; Lorente S.F.; Picado C.;Valero A.; Dávila I. **Genetic association study in nasal polyposis.** J INVEST ALLERG CLIN. 22(5):331-40. **I.F.: 2.27.**

21 Ballesteros F.; Tassies D.; Reverter J.C.; Alobid I.; Bernal-Sprekelsen M. **Idiopathic sudden sensorineural hearing loss: classic cardiovascular and new genetic risk factors.** AUDIOL NEURO-OTOL. 17(6):400-8. **I.F.: 2.46.**

22 Ainsua-Enrich E.; Alvarez-Errico D.; Gilfillan A.M.; Picado C.; Sayós J.; Rivera J.; Martín M. **The adaptor 3BP2 is required for early and late events in Fc RI signaling in human mast cells.** J IMMUNOL. 189(6):2727-34. **I.F.: 5.79.**

23 Muñoz-Cano R.; Pascal M.; Lombardero M.; Sánchez-López J.; Bartra J.; Vilella R.; Picado C.; Valero A. **Nasal challenge test in the diagnosis of latex-related systemic reactions.** J INVEST ALLERG CLIN. 22(4):299-300. **I.F.: 2.27.**

24 Palacín A.; Gómez-Casado C.; Rivas L.A.; Aguirre J.; Tordesillas L.; Bartra J.; Blanco C.; Carrillo T.; Cuesta-Herranz J.; De Frutos C.; Alvarez-Eire G.G.; Fernández F.J.; Gamboa P.; Muñoz R.; Sánchez-Monge R.; Sirvent S.; Torres M.J.; Varela-Losada S.; Rodríguez R.; Parro V.; Blanca M.; Salcedo G.; Díaz-Perales A. **Graph based study of allergen cross-reactivity of plant lipid transfer proteins (LTPs) using microarray in a multicenter study.** PLOS ONE. 7(12):e50799. **I.F.: 4.09.**

REVIEWS
I.F.: 15.88

1 Alobid I.; Mullol J. **Role of Medical Therapy in the Management of Nasal Polyps.** CURRENT ALLERGY AND ASTHMA REPORTS. 12 (2): 144-153. **I.F.: 2.50.**

2 Bousquet J.; Ansótegui I.; Canonica G.W.; Zuberbier T.; Baena-Cagnani C.E.; Bachert C.; Cruz A.A.; González S.N.; Kuna P.; Morais-Almeida M.; Mullol J.; Ryan D.P.; Sánchez-Borges M.; Valiente R.; Church M.K. **Establishing the place in therapy of bilastine in the treatment of allergic rhinitis according to ARIA: evidence review.** CURRENT MEDICAL RESEARCH AND OPINION. 28(1):131-9. **I.F.: 2.38.**

3 Rondón C.; Campo P.; Togias A.; Fokkens W.J.; Durham S.R.; Powe D.G.; Mullol J.; Blanca M. **Local allergic rhinitis: concept, pathophysiology, and management.** JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY. 129(6):1460-7. **I.F.: 11.01.**

EDITORIALS
I.F.: 2.27

1 Munoz-Cano R.; Pascal M.; Lombardero M.; Sanchez-Lopez J.; Bartra J.; Vilella R.; Picado C.; Valero A. **Nasal Challenge Test in the Diagnosis of Latex-Related Systemic Reactions.** JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 22 (4): 299-300 2012. **I.F.: 2.27.**

CLINICAL GUIDELINES
I.F.: 8.91

1 Bousquet J.; Heinzerling L.; Bachert C.; Papadopoulos N.G.; Bousquet P.J.; Burney P.G.; Canonica G.W.; Carlsen K.H.; Cox L.; Haahtela T.; Lodrup Carlsen K.C.; Price D., Samolinski B.; Simons F.E.; Wickman M.; Annesi-Maesano I.; Baena-Cagnani C.E.; Bergmann K.C.; Bindslev-Jensen C.; Casale T.B.; Chiriac A.; Cruz A.A.; Dubakiene R.; Durham S.R.; Fokkens W.J.; Gerth-van-Wijk R.; Kalayci O.; Kowalski M.L.; Mari A.; Mullol J.; Nazamova-Baranova L.; O'Hehir R.E.; Ohta K.; Panzner P.; Passalacqua G.; Ring J.; Rogala B.; Romano A.; Ryan D.; Schmid-Grendelmeier P.; Todo-Bom A.; Valenta R.; Woehrl S.; Yusuf O.M.; Zuberbier T.; Demoly P.; GlobalAllergy and Asthma European Network; Allergic Rhinitis and its Impact on Asthma. **Practical guide to skin prick tests in allergy to aeroallergens.** ALLERGY. 67(1):18-24. **I.F.: 6.27.**

2 Hellings P.W.; Scadding G.; Alobid I.; Bachert C.; Fokkens W.J.; Gerth van Wijk R.; Gevaerts P.; Guilemany J.; Kalogjera L.; Lund V.J.; Mullol J., Passalacqua G.; Toskala E.; Van Drunen C.M. **Executive summary of European Task Force document on diagnostic tools in rhinology.** RHINOLOGY. 50(4):339-52. **I.F.: 1.32.**

3 Fokkens W.J.; Lund V.J.; Mullol J.; Bachert C.; Alobid I.; Baroody F.; Cohen N.; Cervin A.; Douglas R.; Gevaert P.; Georgalas C.; Goossens H.; Harvey R.; Hellings P.; Hopkins C.; Jones N.; Joos G.; Kalogjera L.; Kern B.; Kowalski M.; Price D.; Riechelmann H.; Schlosser R.; Senior B.; Thomas M.; Toskala E.; Voegels R.; Wang de Y.; Wormald P.J. **European Position Paper on Rhinosinusitis and Nasal Polyps 2012.** RHINOLOGY. (23):3 Supplement. **I.F.: 1.32.**

MULTICENTRICS
I.F.: 6.84

1 Wells A.U.; Behr J.; Costabel U.; Cottin V.; Poletti V.; Richeldi L.; European IPF Consensus Group. **Hot of the breath: mortality as a primary end-point in IPF treatment trials: the best is the enemy of the good.** THORAX. 67(11):938-40. **I.F.: 6.84.**

GRANTS FOR RESEARCH IN PROGRESS

Picado C. **Inflamació i tractament de les malalties respiratòries.** Sponsored by: AGAUR 2009_SGR_954. Duration: 15/09/2009 - 31/12/2013.

Mullol J. **Global Allergy and Asthma European Network.** Sponsored by: European Commission FOOD-CT-2004-506378. Duration: 01/08/2008 - 02/08/2012.

Bartra J. **Red de Investigación de Reacciones Adversas a Alérgenos y Fármacos (RIRAAF).** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD07/0064/0006. Duration: 29/02/2008 - 31/12/2013.

Mullol J. **Estudio del papel de la inflamación neurógena no alérgica en la expresión de mucinas y en el proceso de remodelado de la mucosa respiratoria nasosinusal.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0188. Duration: 01/01/2009 - 30/06/2013.

Picado C. **Estudio de la regulación epigenética del gen de l Cox-2 en el asma con intolerancia a los antiinflamatorios no esteroideos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0249. Duration: 01/01/2009 - 30/06/2013.

Pujols L. **Papel de la prostsglandina E2 en la determinación de la sensibilidad a los glucocorticoides en enfermedades respiratorias de origen inflamatorio.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0419. Duration: 01/01/2009 - 31/12/2012.

Xaubet A. **Implicación del sistema de la angiotensina en la etiopatogenia de la fibrosis pulmonar idiopática.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0672. Duration: 01/01/2010 - 31/03/2013.

Valero A.L. **Efecto clínico e inflamatorio nasal tras la aplicación del factor de agregación plaquetaria (PAF).** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1202. Duration: 01/01/2010 - 31/12/2013.

Bartra J. **Anafilaxia por alergia alimentaria inducida por AINEs y ejercicio (AAAIA/E): Mecanismos de acción y efecto protector de PGE2.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01326. Duration: 01/01/2012 - 31/12/2014.

Mullol J. **Impact of acute Traumatic Brain Injury on the sense of smell: The role of smell training ang neuroprotection in post-trauma smell recovery.** Sponsored by: Marató TV3 110610. Duration: 03/01/2012 - 02/01/2015.

Martin M. **Modulación de la activación mastocitaria por miembros de la superfamilia de receptores CD150, CD300 y moléculas adaptadoras relacionadas.** Sponsored by: Ministerio de Ciencia e Innovación, SAF2009-07548. Duration: 01/01/2010-31/12/2012.

DOCTORAL THESES

Torres Atencio Y. **Prostaglandina E2 en la activación osmótica inducida por manitol en el mastocito.** Directors: Margarita Martin, Cesar Picado.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Inflammation and repair in respiratory illnesses

GROUP MEMBERS

TEAM LEADER
Alvar Agustí García-Navarro
(Hospital Clínic)
Tel.: 93 227 54 00 (1701)
E-mail: aagusti@clinic.cat

RESEARCHERS:
Eugeni Ballester (Hospital Clínic)
Abel Gomez-Caro (Hospital Clínic)
Ramon Marrades (Hospital Clínic)

COLLABORATORS:
Dra. Rosa Faner (CIBERes)
Sra. Gemma Sunyer (CIBERes)
Nuria Gonzalez (CIBERes)
Tamara Cruz (CIBERes)

TEAM INVOLVED IN:
ciberes

STRATEGIC OBJECTIVES

The general objective of the group is to investigate the inflammatory and tissue repair mechanisms in chronic obstructive pulmonary disease (COPD), their clinical-functional correlation, the diagnostic, prognostic and therapeutic implications of such knowledge, and particularly their relevance in relation to pulmonary oncogenesis. COPD is presently the fourth most common cause of death in the world, and will rank third within a decade. Lung cancer is the most common malignant tumor in males (and soon also will be the most common malignancy in females), and involves one of the poorest prognosis with the currently available treatment options.

MAIN LINES OF RESEARCH

1. Mechanisms of autoimmunity and autoinflammation that may contribute to the pathogenesis of acute outbreaks of the disease (in collaboration with the group headed by Dr. J. Yagüe, of the Department of Immunology of the Clinic Hospital).
2. Mechanisms of abnormal catabasis (resolution of the inflammation) that perpetuate the inflammatory response even after smoking cessation (a necessary yet insufficient treatment measure) (in collaboration with Dr. J. Clària, of the Clinic Hospital Biomedical Diagnostic Center) and Dra. Aina Noguera from Hospital Universitari Son Espases, Mallorca.
3. Mechanisms of oncogenesis in COPD (in collaboration with investigators of the Fundació Caubet-Cimera in Mallorca and the CIBER of respiratory diseases (CIBERES): SINECAN project).
4. Application of the methodology of systems biology ("omic" platforms and bioinformatics) to COPD, with a view to integrate the cellular and molecular alterations with clinical data. This line is developed in the setting of the CIBER of respiratory diseases (www.ciberes.org), involving a strategic alliance with the Institute for Systems Biology (Seattle, USA), Harvard University (USA) and the pharmaceutical industry with an interest in COPD.

PUBLICATIONS

ORIGINALS
I.F.: 136.99

1 Marin J.M.; Agusti A.; Villar I.; Forner M.; Nieto D.; Carrizo S.J.; Barbe F.; Vicente E.; Wei Y.; Nieto F.J.; Jelic S. **Association Between Treated and Untreated Obstructive Sleep Apnea and Risk of Hypertension.** JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 307 (20): 2169-2176. **I.F.: 30.03.**

2 Celli B.R.; Locantore N.; Yates J.; Tal-Singer R.; Miller B.E.; Bakke P.; Calverley P.; Coxson H.; Crim C.; Edwards L.D.; Lomas D.A.; Duvoix A.; MacNee W.; Rennard S.; Silverman E.; Vestbo J.; Wouters E.; Agusti A. **Inflammatory Biomarkers Improve Clinical Prediction of Mortality in Chronic Obstructive Pulmonary Disease.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 185 (10): 1065-1072. **I.F.: 11.08.**

3 Kim D.K.; Cho M.H.; Hersh C.P.; Lomas D.A.; Miller B.E.; Kong X.; Bakke P.; Gulsvik A.; Agusti A.; Wouters E.; Celli B.; Coxson H.; Vestbo J.; MacNee W.; Yates J.C.; Rennard S.; Litonjua A.; Qiu W.; Beaty T.H.; Crapo J.D.; Riley J.H.; Tal-Singer R.; Silverman E.K. **Genome-Wide Association Analysis of Blood Biomarkers in Chronic Obstructive Pulmonary Disease.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186: 1238-1247. **I.F.: 11.08.**

4 Wan E.S.; Qiu W.; Baccarelli A.; Carey V.J.; Bacherman H.; Rennard S.I.; Agusti A.; Anderson W.H.; Lomas D.A.; DeMeo D.L. **Systemic Steroid Exposure Is Associated with Differential Methylation in Chronic Obstructive Pulmonary Disease.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186: 1248-1255. **I.F.: 11.08.**

5 Qiu W.L.; Baccarelli A.; Carey V.J.; Boutaoui N.; Bacherman H.; Klanderman B.; Rennard S.; Agusti A.; Anderson W.; Lomas D.A.; DeMeo D.L. **Variable DNA Methylation Is Associated with Chronic Obstructive Pulmonary Disease and Lung Function.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 185 (4): 373-381. **I.F.: 11.08.**

6 Wan Emily S.; Qiu W.; Baccarelli A.; Carey V.J.; Bacherman H.; Rennard S.I.; Agusti A.; Anderson W.; Lomas D.A.; DeMeo D.L. **Cigarette smoking behaviors and time since quitting are associated with differential DNA methylation across the human genome.** HUMAN MOLECULAR GENETICS. 21 (13): 3073-3082. **I.F.: 7.64.**

7 Albert P.; Agusti A.; Edwards L.; Tal-Singer R.; Yates J.; Bakke P.; Celli B.R.; Coxson H.O.; Crim C.; Lomas D.A.; MacNee W.; Miller B.; Rennard S.; Silverman E.K.; Vestbo J.; Wouters E.; Calverley P. **Bronchodilator responsiveness as a phenotypic characteristic of established chronic obstructive pulmonary disease.** THORAX. 67 (8): 701-708. **I.F.: 6.84.**

8 Barcelo A.; Pierola J.; De la Pena M.; Esquinas C.; Sanchez-De la Torre M.; Ayllon O.; Alonso A.; Agusti A.G.N.; Barbe F. **Day-night variations in endothelial dysfunction markers and haemostatic factors in sleep apnoea.** EUROPEAN RESPIRATORY JOURNAL. 39 (4): 913-918. **I.F.: 5.89.**

9 Jones P.W.; Singh D.; Bateman E.D.; Agusti A.; Lamarca R.; De Miguel G.; Segarra R.; Caracta C.; Gil E.G. **Efficacy and safety of twice-daily aclidinium bromide in COPD patients: the ATTAIN study.** EUROPEAN RESPIRATORY JOURNAL. 40(4):830-6. **I.F.: 5.89.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	99.55	14	6	5
2011	115.32	13	9	2
2012	136.99	20	15	0

10 Yanez A.M.; Guerrero D.; Perez de Alejo R.; Garcia-Rio F.; Alvarez-Sala J.L.; Calle-Rubio M.; Mato de Molina R.; Valle Falcones M.; Ussetti P.; Sauleda J.; Zamora Garcia E.; Rodriguez-Gonzalez-Moro J.M.; Franco Gay M.; Torrent M.; Agusti A. **Monitoring Breathing Rate at Home Allows Early Identification of COPD Exacerbations.** CHEST. 142: 1524-1529. **I.F.: 5.25.**

11 Puente-Maestu L.; Tejedor A.; Lazaro A.; De Miguel J.; Alvarez-Sala L.; Gonzalez-Aragoneses F.; Simon C.; Agusti A. **Site of Mitochondrial Reactive Oxygen Species Production in Skeletal Muscle of Chronic Obstructive Pulmonary Disease and Its Relationship with Exercise Oxidative Stress.** AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY. 47: 358-362. **I.F.: 5.12.**

12 Spruit M.A.; Polkey M.I.; Celli B.; Edwards L.D.; Watkins M.L.; Pinto-Plata V.; Vestbo J.; Calverley P.M.A.; Tal-Singer R.; Agusti A.; Coxson H.O.; Lomas D.A.; MacNee W.; Rennard S.; Silverman E.K.; Crim C.C.; Yates J.; Wouters E.F.M. **Predicting Outcomes from 6-Minute Walk Distance in Chronic Obstructive Pulmonary Disease.** JOURNAL OF THE AMERICAN MEDICAL DIRECTORS ASSOCIATION. 13 (3): 291-297. **I.F.: 4.64.**

13 Pozo-Rodriguez F.; Lopez-Campos J.L.; Alvarez-Martinez C.J.; Castro-Acosta A.; Agueero R.; Hueto J.; Hernandez-Hernandez J.; Barron M.; Abraira V.; Forte A.; Sanchez Nieto J.M.; Lopez-Gabaldon E.; Cosio B.G.; Agusti A. **Clinical Audit of COPD Patients Requiring**

Hospital Admissions in Spain: AUDIPOC Study. PLOS ONE. 7(7):e42156. **I.F.: 4.09.**

14 Agusti A.; Edwards L.D.; Rennard S.I.; MacNee W.; Tal-Singer R.; Miller B.E.; Vestbo J.; Lomas D.A.; Calverley P.M.A.; Wouters E.; Crim C.; Yates J.C.; Silverman E.K.; Coxson H.O.; Bakke P.; Mayer R.J.; Celli B. **Persistent Systemic Inflammation is Associated with Poor Clinical Outcomes in COPD: A Novel Phenotype.** PLOS ONE. 7 (5). **I.F.: 4.09.**

15 Barcelo A.; Pierola J.; De la Pena M.; Frontera G.; Yanez A.; Alonso-Fernandez A.; Ayllon O.; Agusti A.G.N. **Impaired circadian variation of platelet activity in patients with sleep apnea.** SLEEP AND BREATHING. 16 (2): 355-360. **I.F.: 1.84.**

16 Marin A.; Garcia-Aymerich J.; Sauleda J.; Belda J.; Millares L.; Garcia-Nunez M.; Serra I.; Benet M.; Agusti A.; Anto J.M.; Monso E. **Effect of Bronchial Colonisation on Airway and Systemic Inflammation in Stable COPD.** COPD-JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. 9 (2): 121-130. **I.F.: 1.79.**

17 Sanchez-de-la-Torre M.; Mediano O.; Barcelo A.; Pierola J.; De la Pena M.; Esquinas C.; Miro A.; Duran-Cantolla J.; Agusti A.G.; Capote F.; Marin J.M.; Montserrat J.M.; Garcia-Rio F.; Barbe F. **The influence of obesity and obstructive sleep apnea on metabolic hormones.** SLEEP AND BREATHING. 16: 649-656. **I.F.: 1.84.**

18 Gomez-Caro A.; Boada M.; Reguart N.; Vinolas N.; Casas F.; Molins L. **Sleeve lobectomy after induction chemoradiotherapy.** EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY. 41 (5): 1052-1058. **I.F.: 2.55.**

19 Agustí A.; Soler J.J.; Molina J.; Muñoz M.J.; García-Losa M.; Roset M.; Jones P.W.; Badia X. **Is the CAT questionnaire sensitive to changes in health status in patients with severe COPD exacerbations?** COPD. 9(5):492-8. **I.F.: 1.80.**

20 Noguera A.; Gomez C.; Faner R.; Cosio B.; González-Périz A.; Clària J.; Carvajal A.; Agustí A. **An investigation of the resolution of inflammation (catabasis) in COPD.** RESPIR RES.13:101. **I.F.: 3.36.**

REVIEWS
I.F.: 22.16

1 Faner R.; Rojas M.; MacNee W.; Agusti A. **Abnormal Lung Aging in Chronic Obstructive Pulmonary Disease and Idiopathic Pulmonary Fibrosis.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 186(4):306-13. **I.F.: 11.08.**

2 Agusti A.; Barnes P.J. **Update in Chronic Obstructive Pulmonary Disease 2011.** AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 185 (11): 1171-1176. **I.F.: 11.08.**

EDITORIALS
I.F.: 6.84

1 Agusti A.; Macnee W. **The COPD control panel: towards personalised medicine in COPD.** THORAX. 68(7):687-90. **I.F.: 6.84.**

GRANTS FOR RESEARCH

Agusti A. **Cohorte española de pacientes con EPOC Avanzada (CEPA): Inflamosoma, comorbilidad y curso clínico.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0629. Duration: 01/01/2010 - 31/12/2012.

Agusti A. **Riboleucograma en la Enfermedad Pulmonar Obstructiva Crónica.** Sponsored by: Fundación Mútua Madrileña AP103772012. Duration: 22/06/2012 - 21/06/2013.

Agusti A. **Riboleucograma en la Enfermedad Pulmonar Obstruciva Crónica.** Sponsored by: SEPAR, 133/2011. Duration: 01/06/2011 - 30/06/2012.

Agustí A. **Envelliment pulmonar prematur i MPOC.** Sponsored by: Obra Social de la Caixa, RecerCaixa. Duration 2012-2013.

AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

Genetic and urological tumours

GROUP MEMBERS

TEAM LEADER
Antonio Alcaraz (Hospital Clínic)
Tel.: 93 227 55 45
E-mail: aalcaraz@clinic.cat

RESEARCHERS:
Maria José Ribal (Hospital Clínic)
Mireia Musquera (Hospital Clínic)
Lourdes Mengual (Fundació Clínic)

PRE-DOCTORAL RESEARCHERS:
Alexandru Ciudin (Emili Letang award)
Meritxell Pérez (Hospital Clínic)

TECHNICIANS:
Mercedes Ingelmo-Torres (IDIBAPS)

ADMINISTRATIVE STAFF:
Maite Dalet (Fundació Clínic)

COLLABORATORS:
Antoine G. Van Der Heijden (Radboud University Nijmegen Medical Center)
Juan José Lozano (Plataforma de Bioinformática, CIBEREHD)
Laura Izquierdo (Hospital Clínic)

TEAM INVOLVED IN:

STRATEGIC OBJECTIVES

At present, the research group in urological oncology is conducting two main lines of research, based on the two most frequent urological tumors: urothelial and prostate cancer. The objectives are summarized below:

1. Identification of noninvasive molecular markers for the diagnosis and prognosis of bladder and prostate cancer.
2. Study of molecular markers to identify dsseminated tumour cells and the response to chemotherapy in patients with muscle invasive bladder cancer.
3. Determination of molecular prognostic factors in upper urinary tract tumors.

MAIN LINES OF RESEARCH

- Study of gene and micro-RNA expression profiles in urine for noninvasive diagnosis and prognosis of bladder tumors.
- Determination of disseminated tumor disease in patients with muscle invasive bladder cancer, based on evaluation of the gene expression of bladder-specific markers in lymph nodes and peripheral blood.
- Study of the gene expression profile associated with response to neoadjuvant chemotherapy in patients with muscle invasive bladder cancer.
- Study of methylation profiles of urine cells as a method for noninvasive diagnosis of bladder cancer.
- Study of the prognostic factors in upper urinary tract tumors.
- Study of gene expression and miRNA profiles in urine for noninvasive diagnosis and prognosis of prostate tumors.

PUBLICATIONS

ORIGINALS
I.F.: 71.26

1 Soukup V.; Babjuk M.; Bellmunt J.; Dalbagni G.; Giannarini G.; Hakenberg O.W.; Herr H.; Lechevallier E.; Ribal M.J. **Follow-up After Surgical Treatment of Bladder Cancer: A Critical Analysis of the Literature.** EUROPEAN UROLOGY. 62 (2): 290-302. **I.F.: 8.49.**

2 Bellmunt J.; De La Piedra C.; Gomez Caamano A.; Ribal M.J.; Vazquez F.; Anido U.; Solsona E.; Samper P.; Esteban E.; Morote J. **Bone turnover markers ans potencial correlation with outcomes in patients with genitourinary cancer (prstate) and bone metastasis (result of Tugamo study).** ANNALS OF ONCOLOGY. 23: 312-312. **I.F.: 6.42.**

3 Sanchez-Margallo F.M.; Perez F.J.; Sanchez M.A.; Bachiller J.; Juarez A.; Serrano A.; Ribal M.J.; Alcaraz A. **Transvaginal NOTES-assisted laparoscopic nephrectomy: a survival study in a sheep model.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (4): 926-932. **I.F.: 4.01.**

4 Garcia-Cruz E.; Cadenosa O.; Piqueras M.; Luque P.; Alcaraz A. **Metabolic syndrome comorbidity in a cohoert of 1094 men with low testosterone levels.** JOURNAL OF SEXUAL MEDICINE. 9: 372-372. **I.F.: 3.55.**

5 Garcia-Cruz E.; Piqueras M.; Cardenosa O.; Luque P.; Alcaraz A. **Relationship between erectile function and metabolisc syndromje in a cohort of men with low testosterone levels.** Journal of Sexual Medicine. 9: 323-324. **I.F.: 3.55.**

6 Garcia-Cruz E.; Piqueras M.; Cardenosa O.; Luque P.; Alcaraz A. **Relationships between testosterone, Amss ans metabolic sybdrme in a cohort of men with low testosterone levels.** Journal of Sexual Medicine. 9: 386-386. **I.F.: 3.55.**

7 Ciudin A.; Franco A.; Diaconu M.G.; Peri L.; Vivas V.; Gonzalez M.A.; Alcaraz A. **Quality of life of multiple sclerosis patients: Translation and validation of the Spanish version of qualiveen.** NEUROUROLOGY AND URODYNAMICS. 31 (4): 517-520. **I.F.: 2.96.**

8 Gazquez C.; Ribal M.J.; Marin-Aguilera M.; Kayed H.; Fernandez P.L.; Mengual L.; Alcaraz A. **Biomarkers vs conventional histological analysis to detect lymph node micrometastases in bladder cancer: a real improvement?** BJU INTERNATIONAL. 110: 1310-1316. **I.F.: 2.84.**

9 Autorino R.; Kim F.J.; Rassweiler J.; De Sio M.; Ribal M.J.; Liatsikos E.; Damiano R.; Cindolo L.; Bove P.; Schips L.; Rane A.; Quattrone C.; Correia-Pinto J.; Lima E. **Mini-laparoscopy, laparoendoscopic single-site surgery and natural orifice transluminal endoscopic surgery-assisted laparoscopy: novice surgeons' performance and perception in a porcine nephrectomy model.** BJU INTERNATIONAL. 110: E991-E996. **I.F.: 2.84.**

10 Garcia-Cruz E.; Huguet J.; Piqueras M.; Ribal M.J.; Alcaraz A. **Second to fourth digit ratio, adult testosterone level and testosterone deficiency.** BJU INTERNATIONAL. 109 (2): 266-271. **I.F.: 2.84.**

11 Marin-Aguilera M.; Mengual L.; Ribal M.J.; Ars E.; Rios J.; Gazquez C.; Villavicencio H.; Alcaraz A. **Utility of Urothelial mRNA Markers in Blood for Staging and Monitoring Bladder Cancer.** UROLOGY. 79 (1). **I.F.: 2.43.**

12 Garcia-Cruz E.; Huguet J.; Piqueras M.; Perez Marquez M.; Peri Ll.; Izquierdo L.; Franco A.; Alvarez-Vijande R.; Ribal M.J.; Alcaraz A. **Low testosterone bioavailability is related to prostate cancer diagnose in patients submitted to prostate biopsy.** WORLD JOURNAL OF UROLOGY. 30 (3): 361-365. **I.F.: 2.41.**

13 Garcia-Cruz E.; Piqueras M.; Huguet J.; Perez-Marquez M.; Gosalbez D.; Peri L.; Izquierdo L.; Luque P.; Ribal M.J.; Alcarz A. **Hypertension, dyslipidemia and overweight are related to lower testosterone levels in a cohort of men undergoing prostate biopsy.** INTERNATIONAL JOURNAL OF IMPOTENCE RESEARCH. 24 (3): 110-113. **I.F.: 1.71.**

14 Carles J.; Castellano D.; Climent M.A.; Maroto P.; Medina R.; Alcaraz A. **Castration-resistant metastatic prostate cancer: current status and treatment possibilities.** Clinical & Translational Oncology. 14 (3): 169-176 MAR 2012. **I.F.: 1.33.**

15 Ciudin A.; Musquera M.; Huguet J.; Peri L.; Alvarez-Vijande J.R.; Ribal M.J.; Alcaraz A. **Transposition of Iliac Vessels in Implantation of Right Living Donor Kidneys.** TRANSPLANTATION PROCEEDINGS. 44: 2945-2948. **I.F.: 1.00.**

16 Marin-Aguilera M.; Font A.; Gallardo E.; Alcaraz A.; Pereira V.; Ribal M.J.; Areal J.; Hannaoui N.; Gascon P.; Mellado B. **Molecular profiling of high-risk localized prostate cancer (HRLPC) treated with docetaxel (D) and complete androgen blockade (CAB) prior radical prostatectomy.** ANNALS OF ONCOLOGY. 23: 538-538. **I.F.: 6.42.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	42.53	15	4	4
2011	28.86	7	3	3
2012	71.26	19	11	5

17 Ciudin A.; Luque Galvez M.P.; Salvador Izquierdo R.; Franco de Castro A.; Garcia-Cruz E.; Alcover Garcia J.; Alvarez-Vijande Garcia J.R.; Nicolau C.; Alcaraz Asensio A. **Unenhanced CT findings can predict the development of urinary calculi in stone-free patients.** EUROPEAN RADIOLOGY. 22: 2050-2056. **I.F.: 3.22.**

18 Bellmunt J.; De La Piedra C.; Esteban E.; Climent M.; Gonzalez B.; Alvarez-Ossorio J.L.; Chirivella Gonzalez I.; Mellado B.; Lara P.C.; Alcaraz A. **Bone turover markers and potencial correlation with outcomes in patients with genitourinary cancer (Renal ans Bladder) and bone metastasis (Results of the Tugamo study).** ANNALS OF ONCOLOGY. 23: 266-266. **I.F.: 6.42.**

19 Marin-Aguilera M.; Codony-Servat J.; Kalko S.G.; Fernandez P.L.; Bermudo R.; Buxo E.; Ribal M.J.; Gascon P.; Mellado B. **Identification of Docetaxel Resistance Genes in Castration-Resistant Prostate Cancer.** MOLECULAR CANCER THERAPEUTICS. 11 (2): 329-339. **I.F.: 5.22.**

GRANTS FOR RESEARCH IN PROGRESS

Alcaraz A. **miRNAs para el diagnóstico no invasivo del carcinoma urotelial.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01145. Duration: 01/01/2011 - 31/12/2013.

Alcaraz A. **Estudio de validación prospectivo de método no invasivo para el diagnóstico del cáncer de próstata.** Sponsored by: Fundación de Investigación en Urología (FIU) "Beca de Ayuda a la Investigación "Pedro Cifuentes Díaz". Duration: 01/01/2010 – 31/12/2012.

Mengual L. **Identificación del perfil de expresión de miRNAS en orina de pacientes con carcinoma urotelial.** Sponsored by: Fundación de Investigación en Urología (FIU), Beca de Ayuda a la Investigación "Pedro Cifuentes Díaz". Duration: 01/01/2010 – 31/12/2012.

Musquera M. **Identificación de un apanel de microRNAs para el diagnóstico no invasivo del cáncer de próstata.** Sponsored by: Fundación de Investigación en Urología (FIU), Beca de Ayuda a la Investigación "Pedro Cifuentes Díaz". Duration: 01/01/2011 – 31/12/2013.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

GYNECOLOGICAL ENDOCRINOLOGY AND HUMAN REPRODUCTION 156

FETAL AND PERINATAL MEDICINE 160

VIRAL HEPATITIS IN THE IMMUNE COMPETENT HOST AND IN LIVER TRANSPLANT PATIENTS 166

PATHOPHISIOLOGY AND TREATMENT OF ASCITES AND ALTERED RENAL FUNCTION IN LIVER CIRRHOSIS 170

HEPATIC ONCOLOGY 174

LIVER HEMODYNAMICS AND PORTAL HYPERTENSION. DIGESTIVE BLEEDING SECONDARY TO RUPTURED ESOPHAGEAL VARICOSE VEINS 178

INFLAMMATORY BOWEL DISEASE (IBD) 183

CHOLESTASIS AND BONE PATHOLOGY 187

MITOCHONDRIAL REGULATION OF CELL DEATH AND STEATOHEPATITIS 190

LIVER TRANSPLANTATION AND GRAFT VIABILITY 194

GASTROINTESTINAL AND PANCREATIC ONCOLOGY 199

HEREDITARY METABOLIC DISEASES 205

GENOMIC PROGRAMMING OF BETA CELLS AND DIABETES 208

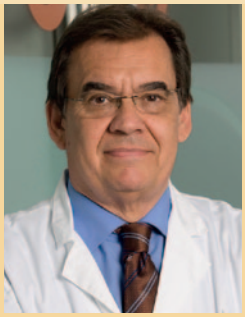
DIABETES: METABOLIC AND MOLECULAR NETWORKS 210

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Gynecological endocrinology and human reproduction

GROUP MEMBERS



TEAM LEADER
Juan Balasch (Hospital Clínic)
Tel.: 93 227 54 36
E-mail: jbalasch@ub.edu

RESEARCHERS:
Francisco Carmona (Hospital Clínic)
Camil Castelo-Branco (Hospital Clínic)
Montserrat Creus (Hospital Clínic)
Dolors Manau Trullás (Fundació Clínic)
Bienvenido Puerto (Hospital Clínic)
Francisco Fábregues (Hospital Clínic)
Jaume Pahisa (Hospital Clínic)
Aureli Torné (Hospital Clínic)
Mª Angels Martínez-Zamora (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Elena Suárez Cisneros (IDIBAPS)

COLLABORATORS:
Gemma Casals (Hospital Clínic)
Roser Casamitjana (Hospital Clínic)
Salvadora Cívico (Hospital Clínic)
Marta Guimerà (Hospital Clínic)
José Luís Ballescá (Hospital Clínic)
Joana Peñarrubia Alonso (Fundació Clínic)
Jaume Ordi (Hospital Clínic)

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. More specifically, the main objectives of our research group are to advance in the existing lines of work, with the purpose of:

1. Determining the most relevant mechanisms in the **pathogenesis of reproductive failure** (sterility, repeated miscarriages, repeated implant failure after in vitro fertilization) **and of the principal female reproductive disease processes** (endometriosis, uterine myoma, genital cancer).
2. Optimizing and innovating as far as possible the **preventive or therapeutic potential** in the aforementioned situations.

MAIN LINES OF RESEARCH

1. **Reproductive failure markers.** Analysis of the possible role of new markers of hemostasis alterations as a new pathogenic mechanism of thrombotic disease in early and advanced pregnancy, in patients with or without antiphospholipid syndrome. Study is also made of the usefulness of immunohistochemical and quantitative and qualitative proteomic parameters in the human endometrium as markers of endometrial receptiveness. In-depth research of the pathogenic mechanisms involved in the block of pre-implantation embryonic development in vitro.

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. Study of the role of LH and the androgens as ovarian sensitizing factors in relation to ulterior stimulation with FSH. Investigation of the possible role of the ovarian follicular cells (granulosum, macrophages) in the pathogenesis of ovarian hyperstimulation syndrome, with the exploration of new ovarian stimulation or endometrial preparation protocols allowing improved results in assisted reproduction techniques.
3. **Optimization of the surgical management of diseases of the reproductive apparatus.**
Designed 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 disorders of the female reproductive apparatus. This also implies defining the prognostic value of HPV (human papillomavirus) detection and viral typing as prognostic and progression markers of precancerous lesions of the cervix, vagina and vulva.

PUBLICATIONS

ORIGINALS
I.F.: 49.19

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	89.86	26	16	3
2011	76.25	21	15	2
2012	49.19	14	8	5

1 Povedano B.; Arjona J.E.; Velasco E.; Monserrat J.A.; Lorente J.; Castelo-Branco C. **Complications of hysteroscopic Essure (R) sterilisation: report on 4306 procedures performed in a single centre.** BJOGAN INTERNATIONAL JOURNAL OF OBSTETRICS AND GYNAECOLOGY. 119 (7): 795-799. **I.F.: 3.41.**

2 Lete I.; Pérez-Campos E.; Correa M.; Robledo J.; de la Viuda E.; Martínez T.; Mendoza N.; Parera N.; González J.V.; Gómez M.A.; Castelo-Branco C.; Lobo P. **Continuation rate of combined hormonal contraception: a prospective multicenter study.** J WOMENS HEALTH. 21(5):490-5. **I.F.: 1.57.**

3 Casals G.; Ordi J.; Creus M.; Fabregues F.; Carmona F.; Casamitjana R.; Balasch J. **Expression pattern of osteopontin and alpha v beta 3 integrin during the implantation window in infertile patients with early stages of endometriosis.** HUMAN REPRODUCTION. 27 (3): 805-813. **I.F.: 4.47.**

4 Prats P.; Rodriguez I.; Comas C.; Puerto B. **First trimester risk assessment for trisomy 21 in twin pregnancies combining nuchal translucency and first trimester biochemical markers.** PRENATAL DIAGNOSIS. 32: 927-932. **I.F.: 2.11.**

5 Fabregues F.; Iraola A.; Casamitjana R.; Carmona F.; Balasch J. **Human chorionic gonadotrophin stimulation test as a predictor of ovarian response and pregnancy in IVF cycles stimulated with GnRH agonist gonadotrophin treatment: a pilot study.** HUMAN REPRODUCTION. 27 (4): 1122-1129. **I.F.: 4.47.**

6 Alonso I.; Felix A.; Torne A.; Fuste V.; del Pino M.; Castillo P.; BALASCH J.; Pahisa J.; RIOS J.; ORDI J. **Human papillomavirus as a favorable prognostic biomarker in squamous cell carcinomas of the vagina.** GYNECOLOGIC ONCOLOGY. 125 (1): 194-199. **I.F.: 3.89.**

7 Miró F.; Vidal E.; Balasch J. **Increased live birth rate in twin pregnancies resulting from embryo assistance.** OBSTETRICS AND GYNECOLOGY. 119(1):44-9. **I.F.: 4.73.**

8 Ros C.; Alobid I.; Centellas S.; Balasch J.; Mullol J.; Castelo-Branco C. **Loss of smell but not taste in adult women with Turner's syndrome and other congenital hypogonadisms.** MATURITAS. 73: 244-250. **I.F.: 2.77.**

9 Carmona F.; Chapron C.; Martínez-Zamora M.Á.; Santulli P.; Rabanal A.; Martínez-Florensa M.; Lozano F.; Balasch J. **Ovarian endometrioma but not deep infiltrating endometriosis is associated with increased serum levels of interleukin-8 and interleukin-6.** JOURNAL OF REPRODUCTIVE IMMUNOLOGY. 95: 80-86. **I.F.: 2.97.**

10 Martinez-Zamora M.A.; Peralta S.; Creus M.; Tassies D.; Reverter J.C.; Espinosa G.; Cervera R.; Carmona F.; Balasch J. **Risk of thromboembolic events after recurrent spontaneous abortion in antiphospholipid syndrome: a case-control study.** ANNALS OF THE RHEUMATIC DISEASES. 71 (1): 61-66. **I.F.: 8.73.**

11 Grande M.; Borrell A.; Garcia-Posada R.; Borobio V.; Munoz M.; Creus M.; Soler A.; Sanchez A.; Balasch J. **The effect of maternal age on chromosomal anomaly rate and spectrum in recurrent miscarriage.** HUMAN REPRODUCTION. 27: 3109-3117. **I.F.: 4.47.**

12 Davis S.R.; Castelo-Branco C.; Chedraui P.; Lumsden M.A.; Nappi R.E.; Shah D.;Villaseca P. **Understanding weight gain at menopause.** CLIMACTERIC. 15: 419-429. **I.F.: 1.99.**

13 Gonzalez-Comadran M.; Duran M.; Sola I.; Fabregues F.; Carreras R.; Checa M.A. **Effects of transdermal testosterone in poor responders undergoing IVF: systematic review and meta-analysis.** REPRODUCTIVE BIOMEDICINE ONLINE. 25(5):450-9. **I.F.: 2.04.**

14 Ros C.; Castelo-Branco C. **Management of Turner's syndrome in adult life: case-series and systematic review.** GYNECOLOGICAL ENDOCRINOLOGY. 28: 726-732. **I.F.: 1.58.**

REVIEWS
I.F.: 10.02

1 Castelo-Branco C. **Cigarette smoking and age of menopause.** CLIMACTERIC. 15: 505-506. **I.F.: 1.99.**

2 Balasch J.; Gratacos E. **Delayed childbearing: effects on fertility and the outcome of pregnancy.** CURRENT OPINION IN OBSTETRICS & GYNECOLOGY. 24 (3): 187-193. **I.F.: 2.38.**

3 Burger H.G.; MacLennan A.H.; Huang K-E.; Castelo-Branco C. **Evidence-based assessment of the impact of the WHI on women's health.** CLIMACTERIC. 15 (3): 281-287. **I.F.: 1.99.**

4 Martinez-Zamora M.A.; Cervera R.; Balasch J. **Recurrent Miscarriage, Antiphospholipid Antibodies and the Risk of Thromboembolic Disease.** CLINICAL REVIEWS IN ALLERGY & IMMUNOLOGY. 43: 265-274. **I.F.: 3.68.**

EDITORIALS
I.F.: 6.72

1 Bornstein, J.; Bentley, J.; Boesze, P.; Girardi, F.; Haefner, H.; Menton, M.; Perrotta, M.; Prendiville, W.; Russell, P.; Sideri, M.; Strander, B.; Tatti, S.; Torne, A.; Walker, P. **Colposcopic Terminology of the International Federation for Cervical Pathology and Colposcopy.** OBSTETRICS AND GYNECOLOGY. 120 (1): 166-172. **I.F.: 4.73.**

2 Castelo-Branco C. **The effect of soy isoflavone on bone mineral density.** CLIMACTERIC. 15 (1): 95-96. **I.F.: 1.99.**

MULTICENTRICS
I.F.: 65.03

1 Bornstein J.; Sideri M.; Tatti S.; Walker P.; Prendiville W.; Haefner H.K.; Nomenclature Committee of International Federation for Cervical Pathology and Colposcopy. Torné A. **Terminology of the vulva of the International Federation for Cervical Pathology and Colposcopy.** J LOW GENIT TRACT DIS. 16(3):290-5. **I.F.: 1.07.**

2 Roura E.; Iftner T.; Vidart J.A.; Kjaer S.K.; Bosch F.X.; Muñoz N.; Palacios S.; Rodriguez M.S.; Morillo C.; Serradell L.; Torcel-Pagnon L.; Cortes J.; Castellsagué X.; CLEOPATRE Spain Study Group. Torné A. **Predictors of human papillomavirus infection in women undergoing routine cervical cancer screening in Spain: the CLEOPATRE study.** BMC INFECT DIS. 12:145. **I.F.: 3.12.**

3 Castellsagué X.; Iftner T.; Roura E.; Vidart J.A.; Kjaer S.K.; Bosch F.X.; Muñoz N.; Palacios S.; San Martin Rodriguez M.; Serradell L.; Torcel-Pagnon L.; Cortes J.; CLEOPATRE Spain Study Group; Torné A. **Prevalence and genotype distribution of human papillomavirus infection of the cervix in Spain: the CLEOPATRE study.** J MED VIROL. 84(6):947-56. **I.F.: 2.82.**

4 Roset Bahmanyar E.; Paavonen J.; Naud P.; Salmerón J.; Chow S.N.; Apter D.; Kitchener H.; Castellsagué X.; Teixeira J.C.; Skinner S.R.; Jaisamrarn U.; Limson G.A.; Garland S.M.; Szarewski A.; Romanowski B.; Aoki F.; Schwarz T.F.; Poppe W.A.; De Carvalho N.S.; Harper D.M.; Bosch F.X.; Raillard A.; Descamps D.; Struyf F.; Lehtinen M.; Dubin G.; HPV PATRICIA Study Group; Torné A. **Prevalence and risk factors for cervical HPV infection and abnormalities in young adult women at enrolment in the multinational PATRICIA trial.** GYNECOL ONCOL. 127(3):440-50. **I.F.: 4.73.**

5 Pearl II Study Group: Barlow D.H.; Baró F.; Barri P.N.; Bergeron C.; Bestel E.; Bornstein J.; Bouchard P.; Caraco Y.; Carmona F.; Caruso A.; Diedrich K.; Donnez J.; Donnez O.; Fauser B.C.; Ferenczy A.; Gilabert J.; Giuliani A.; Glezerman M.; Goettker-Schnetmann W.; Hillemanns P.; Huber J.; Jimenez J.S.; Kay R.; Kiesel L.; Kotarski J.; Layani L.; Lemieszczuk B.; Loumaye E.; Mannering M.; Marshall J.; Martinez S.; McPherson K.; Melis G.B.; Milani R.; Morris E.; Nappi C.; Nisolle M.; Nouri K.; Osterloh I.; Palacios S.; Parrilla J.J.; Paul N.W.; Pawlaczyk A.; Pellicer A.; Perino A.; Selvaggi L.; Sodowski K.; Terrill P.; Tomaszewski J.; Vazquez F.; Williams A.R.; de Ziegler D. **Ulipristal acetate versus leuprolide acetate for uterine fibroids.** N ENGL J MED. 366(5):421-32. **I.F.: 53.30.**

GRANTS FOR RESEARCH IN PROGRESS

Balasch J. **Fisiopatologia de la Reproducció Humana.** Sponsored by: AGAUR 2009_SGR_1099. Duration: 23/7/2009-31/12/2013.

Torne A. **Valor clínico de la infección múltiple por virus del papiloma humano (VPH) en pacientes con lesiones premalignas y cáncer de cuello uterino.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1524. Duration: 1/1/2010-30/6/2013.

Ordi J. **Patrones de expresión de miRNA en la progresión y la transformación maligna de las lesiones precursoras del cáncer de cervix uterino.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/01084. Duration: 1/1/2010-30/6/2013.

Balasch J. **Investigación de las micropartículas procoagulantes como mecanismo patogénico en la patología gestacional precoz y avanzada. Relación con los anticuerpos antifosfolipídicos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01560. Duration: 1/1/2012-31/12/2014

Torne A. **Detección intraoperatoria del VPH en el cervix residual tras la conización como marcador precoz de fracaso terapéutico en la neoplasia cervical intraepitelial.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/01231. Duration: 1/1/2013-30/6/2015.

Ordi J. **Expresión del oncogén E7 del VPH y de la mutilación de los promotores de CADM1 y MAL como biomarcadores de progresión/regresión en lesiones precursoras del cáncer de cervix.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/01165. Duration: 1/1/2013-30/6/2015.

DOCTORAL THESES

Balasch J. **Expressió proteica diferencial en l'endometri humà durant la finestra d'implantació.** PhD student: Helena Suarez Cisneros.

Balasch J. **Repercusiones psicológicas del tratamiento de Fecundación In Vitro (FIV): nivel de estrés, afrontamiento y síntomas emocionales.** PhD student: Dámaris Muñoz Cano.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Fetal and perinatal medicine

TEAM INVOLVED IN: ciberer

GROUP MEMBERS

TEAM LEADER
Eduard Gratacós (Hospital Clínic)
Tel.: 93 227 99 46
E-mail: gratacos@clinic.cat

RESEARCHERS:
Antoni Borrell (Hospital Clínic)
Francesc Botet (Hospital Clínic)
Vicenç Cararach (Hospital Clínic)
Xavier Carbonell (Hospital Clínic)
Elena Casals (Hospital Clínic)
Francesc Figueras (Hospital Clínic)
Josep Figueras (Hospital Clínic)
Josep Maria Martinez-Crespo (Hospital Clínic)
Montserrat Palacio (Hospital Clínic)
Fátima Crispi (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Emilia Ruthy Acosta-Rojas (Fundació Clínic-CIBER-ER)
Magdalena Sanz (IDIBAPS)
Elena Demicheva (Fundació Clínic)
Erwin Van Vliet (Fundació Clínic)
Giuseppe Rattà (Fundació Clínic)
Emma Muñoz (Fundació Clínic)
Elisenda Eixarch (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Anna González (pre-doc IDIBAPS)
Dafnis Batallé (CIBER-ER)
Violeta Tenorio (Fundació Clínic)
Mónica Cruz-Lemini (Fundació Clínic)
Patricia Garcia (Fundació Clínic)
Stefan Savchev (Fundació Clínic)
Miguel Parra (Fundació Clínic)
Elena Scazocchio (Institut Dexeus)
Brenda Valenzuela (Fundació Clínic)
Gabriela Egaña (Fundació Clínic)

TECHNICIANS:
Imma Mercade (Fundació Clínic)
Marina Coll (Fundació Clínic)
Ariadna Arbat (Fundació Clínic)

NURSING STAFF:
Angela Arranz (Fundació Clínic)
Alba Camacho (Fundació Clínic)
Marta García (Fundació Clínic)

ADMINISTRATIVE STAFF:
Luis Enciso (IDIBAPS)
Maite Aguilera (Fundació Clínic)
Estefanía Callado (Fundació Clínic)
Pere Lorente (Fundació Clínic)
Balma Gil (Fundació Clínic)
Belén Sánchez (Fundació Clínic)
Gemma Fornons (Fundació Clínic)

COLLABORATORS:
Jordi Bellart (Hospital Clínic)
Olga Gómez (Hospital Clínic)
Anna Gonce (Hospital Clínic)
Xavier Miracle (Hospital Clínic)
Mª Dolors Salvía (Hospital Clínic)
Joan Junyent (Fundació Clínic)
Teresa Cobo (IDIBAPS - Río Hortega)
Mar Benassar (Hospital Clínic)
Maribel Grande (Fundació Clínic)

VISITING SCIENTISTS:
Iosefine Stergitou (Topiki autodioikisi Kykladon)
Javier Ortiz (Klinikum rechts der Isar, Universidad Técnica)
Mauro Parra (Hospital Clínico de la Universidad de Chile)
Stefania Triunfo (Gemelli Hospital, Rome)
Silvia Lobmaier (Hospital Universitario "rechts der Isar", Munich)
Nuruddin Badruddin (Aga Kan University)
Rozina Nuruddin (Aga Kan University)

STRATEGIC OBJECTIVES

The principal strategic objective is to search for solutions to prenatal diseases, identifying the mechanisms involved in fetal brain and cardiac reprogramming, developing new technologies allowing an early diagnosis, and identifying potential therapeutic targets.

Other objectives of the team are the development and consolidation of the existing lines of work in different fields, such as perinatal infections, HIV and neonatal infection, fetal therapy and surgery, screening strategies and prediction of fetal and maternal pathology in large populations, preeclampsia and prematureness.

MAIN LINES OF RESEARCH

1. Neurological damage of fetal and perinatal origin. Characterization of the physiopathology and development of methods for the diagnosis and treatment of prenatal brain damage, with preferential use of fetal growth retardation as a model. The group possesses an important interdisciplinary structure for the characterization and prediction of perinatal brain damage, with special attention to the fetal reprogramming mechanisms secondary to chronic hypoxia. The line is structured into major interrelated areas: fetal and neonatal brain imaging (ultrasound, moving blood fraction and MRI- DTI-RMS), neurological damage biomarkers, and follow-up of neurological development over the long term.
2. Cardiac function and cardiovascular programming in the fetus. The aim of this research line is to characterize cardiac function and develop methods for the prediction and treatment of fetal programming in the context of cardiac dysfunction in fetuses and infants. This includes new echocardiographic markers of fetal myocardial function, biochemical and genomic markers of ischemia and immune/endothelial hyperactivation.
3. Fetal therapy and surgery. As members of the European Eurofoetus group, we study the fetal surgical treatment of complications of monochorial gestation and congenital diaphragmatic herniation, and the tissue engineering repair of fetal membranes. Screening of aneuploidy and maternal disease markers.
4. Perinatal pathology. This is a mixed line that groups projects relating to prematureness (chorioamnionitis, aggressive nutrition), clinical pathology (diabetes, autoimmune diseases), preeclampsia and placental disorders (developing methods for early prediction), HIV and pregnancy, neonatal respiratory disease (study of pulmonary inflammation and prevention of bronchopulmonary dysplasia), and investigation of neonatal infection (perinatal and nosocomial infections, respiratory syncytial virus infection, etc.).

PUBLICATIONS

ORIGINALS
I.F.: 108.65

1 Cobo T.; Kacerovsky M.; Palacio M.; Hornychova H.; Hougaard D.M.; Skogstrand K.; Jacobsson B. **A prediction model of histological chorioamnionitis and funisitis in preterm prelabor rupture of membranes: analyses of multiple proteins in the amniotic fluid.** JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE. 25: 1995-2001. **I.F.: 1.49.**

2 Wald N.J.; Bestwick J.P.; Borrell A. **Adding ductus venosus blood flow as a categorical variable to the Combined and Integrated tests in Down's syndrome screening.** JOURNAL OF MEDICAL SCREENING. 19 (1): 49-50 2012. **I.F.: 1.69.**

3 Batalle D.; Eixarch E.; Figueras F.; Munoz-Moreno E.; Bargallo N.; Illa M.; Acosta-Rojas R.; Amat-Roldan I.; Gratacos E. **Altered small-world topology of structural brain networks in infants with intrauterine growth restriction and its association with later neurodevelopmental outcome.** NEUROIMAGE. 60 (2): 1352-1366. **I.F.: 5.89.**

4 Lopez M.; Figueras F.; Hernandez S.; Lonca M.; Garcia R.; Palacio M.; Coll O. **Association of HIV infection with spontaneous and iatrogenic preterm delivery: effect of HAART.** AIDS. 26 (1): 37-43. **I.F.: 6.24.**

5 Crispi F.; Figueras F.; Cruz-Lemini M.; Bartrons J.; Bijnens B.; Gratacos E. **Cardiovascular programming in children born small for gestational age and relationship with prenatal signs of severity.** AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY. 207 (2). **I.F.: 3.47.**

6 Munoz-Cortes M.; Arigita M.; Falguera G.; Seres A.; Guix D.; Baldrich E.; Acera A.; Torrent A.; Rodriguez-Veret A.; Lopez-Quesada E.; Garcia-Moreno R.; Gonce A.; Borobio V.; Borrell A. **Contingent screening for Down syndrome completed in the first trimester: a multicenter study.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (4): 396-400. **I.F.: 3.01.**

7 Martinez-Gonzalez I.; Moreno R.; Petriz J.; Gratacos E.; Aran J.M. **Engraftment Potential of Adipose Tissue-Derived Human Mesenchymal Stem Cells After Transplantation in the Fetal Rabbit.** STEM CELLS AND DEVELOPMENT. 21: 3270-3277. **I.F.: 4.46.**

8 Savchev S.; Figueras F.; Cruz-Martinez R.; Illa M.; Botet F.;Gratacos E. **Estimated weight centile as a predictor of perinatal outcome in small-for-gestational-age pregnancies with normal fetal and maternal Doppler indices.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (3): 299-303. **I.F.: 3.01.**

9 Cobo T.; Bonet-Carne E.; Martinez-Terron M.; Perez-Moreno A.; Elias N.; Luque J.; Amat-Roldan I.; Palacio M. **Feasibility and Reproducibility of Fetal Lung Texture Analysis by Automatic Quantitative Ultrasound Analysis and Correlation with Gestational Age.** FETAL DIAGNOSIS AND THERAPY. 31 (4): 230-236 2012. **I.F.: 1.05.**

10 Figueroa H.; Carolna Silva M.; Kottmann C.; Viguera S.; Valenzuela I.; Hernandez-Andrade E.; Gratacos E.; Antonio Arraztoa J.; Illanes S.E. **Fetal evaluation of the modified-myocardial performance index in pregnancies complicated by diabetes.** PRENATAL DIAGNOSIS. 32: 943-948. **I.F.: 2.11.**

11 Moreno R.; Martinez-Gonzalez I.; Rosal M.; Nadal M.; Petriz J.; Gratacos E.; Aran J.M. **Fetal Liver-Derived Mesenchymal Stem Cell Engraftment After Allogeneic In Utero Transplantation into Rabbits.** STEM CELLS AND DEVELOPMENT. 21 (2): 284-295. **I.F.: 4.46.**

12 Valsky D.V.; Eixarch E.; Martinez-Crespo J.M.; Acosta E.R.; Lewi L.; Deprest J.; Gratacos E. **Fetoscopic Laser Surgery for Twin-to-Twin Transfusion Syndrome after 26 Weeks of Gestation.** FETAL DIAGNOSIS AND THERAPY. 31 (1): 30-34. **I.F.: 1.05.**

13 Grande M.; Arigita M.; Borobio V.; Jimenez J.M.; Fernandez S.; Borrell A. **First-trimester detection of structural abnormalities and the role of aneuploidy markers.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (2): 157-163. **I.F.: 3.01.**

14 Dadvand P.; de Nazelle A.; Figueras F.; Basagana X.; Su J.; Amoly E.; Jerrett M.; Vrijheid M.; Sunyer J.; Nieuwenhuijsen M.J. **Green space, health inequality and pregnancy.** ENVIRONMENT INTERNATIONAL. 40: 110-115. **I.F.: 5.30.**

15 Mula R.; Gonce A.; Bennasar M.; Arigita M.; Meler E.; Nadal A.; Sanchez A.; Botet F.; Borrell A. **Increased nuchal translucency and normal karyotype: perinatal and pediatric outcomes at 2 years of age.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (1): 34-41. **I.F.: 3.01.**

16 Cobo T.; Kacerovsky M.; Palacio M.; Hornychova H.; Hougaard D.M.; Skogstrand K.; Jacobsson B. **Intra-Amniotic Inflammatory Response in Subgroups of Women with Preterm Prelabor Rupture of the Membranes.** PLOS ONE. 7: e43677. **I.F.: 4.09.**

17 Figueroa H.; Lozano M.; Suazo C.; Eixarch E.; Illanes S.E.; Eduardo Carreno J.; Villanueva S.; Hernandez-Andrade E.; Gratacos E.; Irarrazabal C.E. **Intrauterine growth restriction modifies the normal gene expression in kidney from rabbit fetuses.** EARLY HUMAN DEVELOPMENT. 88: 899-904. **I.F.: 2.05.**

18 Siso C.; Gonce A.; Bosch J.; Salvia M.D.; Hernandez S.; Figueras F. **Listeriosis in pregnancy: a secular trend in a tertiary referral hospital in Barcelona.** EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES. 31: 2125-2132. **I.F.: 2.86.**

19 Cudmore M.J.; Ahmad S.; Sissaoui S.; Ramma W.; Ma B.; Fujisawa T.; Al-Ani B.; Wang K.Q.; Cai M.; Crispi F.; Hewett P.W.; Gratacos E.; Egginton S.; Ahmed A. **Loss of Akt activity increases circulating soluble endoglin release in preeclampsia: identification of inter-dependency between Akt-1 and heme oxygenase-1.** EUROPEAN HEART JOURNAL. 33 (9): 1150-1158. **I.F.: 10.48.**

20 Gonce A.; Angeles Marcos M.; Borrell A.; Lopez M.; Nadal A.; Figueras F.; Gratacos E. **Maternal IgM antibody status in confirmed fetal cytomegalovirus infection detected by sonographic signs.** PRENATAL DIAGNOSIS. 32: 817-821. **I.F.: 2.11.**

21 Mademont-Soler I.; Morales C.; Soler A.; Clusellas N.; Margarit E.; Martinez-Barrios E.; Martinez J.M.; Sanchez A. **MLPA: A prenatal diagnostic tool for the study of congenital heart defects?** GENE. 500 (1): 151-154. **I.F.: 2.34.**

22 Tenorio V.; Alarcon A.; Garcia-Alix A.; Arca G.; Camprubi M.; Agut T.; Figueras J. **Moderate cerebral hypothermia in hypoxic-ischaemic encephalopathy: Experience after one year.** ANALES DE PEDIATRIA. 77: 88-97. **I.F.: 0.77.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	120.82	38	25	4
2011	116.03	43	21	11
2012	108.65	34	18	9

23 Eixarch E.; Batalle D.; Illa M.; Munoz-Moreno E.; Arbat-Plana A.; Amat-Roldan I.; Figueras F.; Gratacos E. **Neonatal Neurobehavior and Diffusion MRI Changes in Brain Reorganization Due to Intrauterine Growth Restriction in a Rabbit Model.** PLOS ONE. 7 (2). **I.F.: 4.09.**

24 Van Mieghem T.; Cruz-Martinez R.; Allegaert K.; DeKoninck P.; Castanon M.; Sandaite I.; Claus F.; Devlieger R.; Gratacos E.; Deprest J. **Outcome of fetuses with congenital diaphragmatic hernia and associated intrafetal fluid effusions managed in the era of fetal surgery.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (1): 50-55. **I.F.: 3.01.**

25 Palacio M.; Cobo T.; Martinez-Terron M.; Ratta G.A.; Bonet-Carne E.; Amat-Roldan I.; GratacosE. **Performance of an automatic quantitative ultrasound analysis of the fetal lung to predict fetal lung maturity.** AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY. 207: 504-e1-5. **I.F.: 3.47.**

26 Benn P.; Borrell A; Cuckle H.; Dugoff L.; Gross S.; Johnson J.A.; Maymon R.; Odibo A.; Schielen P.; Spencer K.; Wright D.; Yaron Y. **Prenatal Detection of Down Syndrome using Massively Parallel Sequencing (MPS): a rapid response statement from a committee on behalf of the Board of the International Society for Prenatal Diagnosis.** PRENATAL DIAGNOSIS. 32 (1): 1-2. **I.F.: 2.11.**

27 Ortiz Collado M.A.; Cararach V.; Tourne C.E. **Preventing the risk of postpartum depression and premature childbirth by a psychosomatic approach: a randomized multicenter study.** MEDICINA CLINICA. 139: 385-392. **I.F.: 1.38.**

28 Minguillon M.C.; Schembari A.; Triguero-Mas M.; de Nazelle A.; Dadvand P.; Figueras F.; Salvado J.A.; Grimalt J.O.; Nieuwenhuijsen M.; Querol X. **Source apportionment of indoor, outdoor and personal PM2.5 exposure of pregnant women in Barcelona, Spain.** ATMOSPHERIC ENVIRONMENT. 59: 426-436. **I.F.: 3.46.**

29 Dadvand P.; de Nazelle A.; Triguero-Mas M.; Schembari A.; Cirach M.; Amoly E.; Figueras F.; Basagana X.; Ostro B.; Nieuwenhuijsen M. **Surrounding Greenness and Exposure to Air Pollution During Pregnancy: An Analysis of Personal Monitoring Data.** ENVIRONMENTAL HEALTH PERSPECTIVES. 120: 1286-1290. **I.F.: 7.04.**

30 Grande M.; Borrell A.; Garcia-Posada R.; Borobio V.; Munoz M.; Creus M.; Soler A.; Sanchez A.; Balasch J. **The effect of maternal age on chromosomal anomaly rate and spectrum in recurrent miscarriage.** HUMAN REPRODUCTION. 27: 3109-3117. **I.F.: 4.47.**

31 Carbonell X.; Fullarton J.R.; Gooch K.L.; Figueras-Aloy J. **The evolution of risk factors for respiratory syncytial virus-related hospitalisation in infants born at 32-35 weeks' gestational age: time-based analysis using data from the FLIP-2 study.** JOURNAL OF PERINATAL MEDICINE. 40: 685-691. **I.F.: 1.70.**

32 Botet F.; Figueras-Aloy J.; Miracle-Echegoyen X.; Rodriguez-Miguelez J.M.; Salvia-Roiges M.D.; Carbonell-Estrany X. **Trends in survival among extremely-low-birth-weight infants (less than 1000 g) without significant bronchopulmonary dysplasia.** BMC PEDIATRICS. 12: 63. **I.F.: 1.88.**

33 Gratacós E.; Ortiz J.U.; Martinez J.M. **A systematic approach to the differential diagnosis and management of the complications of monochorionic twin pregnancies.** FETAL DIAGNOSIS AND THERAPY . 32(3):145-55. **I.F.: 1.05.**

34 Sabria J.; Comas C.; Barceló-Vidal C.; Garcia-Posada R.; Echevarria M.; Gomez-Roig M.D.; Borrell A. **Updated reference ranges for the ductus venosus pulsatility index at 11-13 weeks.** FETAL DIAGN THER. 2012;32(4):271-6. **I.F.: 1.05.**

REVIEWS
I.F.: 2.38

1 Balasch J.; Gratacos E. **Delayed childbearing: effects on fertility and the outcome of pregnancy.** CURRENT OPINION IN OBSTETRICS & GYNECOLOGY. 24 (3): 187-193. **I.F.: 2.38.**

EDITORIALS
I.F.: 3.56

1 Gratacos E. **Fetoscopy and Risk of Iatrogenic Preterm Premature Rupture of Membranes: Not as High as It May Seem (in Experienced Hands).** FETAL DIAGNOSIS AND THERAPY. 31 (1): 10-11. **I.F.: 1.05.**

2 Mula R.; Gonce A.; Bennasar M.; Arigita M.; Meler E.; Nadal A.; Anchez A.S. Botet F.; Borrell A. **Increased Nuchal Translucency and Normal Karyotype: Perinatal and Pediatric Outcomes at 2 Years of Age EDITORIAL COMMENT.** OBSTETRICAL & GYNECOLOGICAL SURVEY. 67 (5): 279-280. **I.F.: 2.51.**

GRANTS FOR RESEARCH IN PROGRESS

Gratacós E. **A multidisciplinary research programme for the evaluation of diagnostic techniques and intervention measures for prenatal brain damage using growth restriction as a model.** Sponsored by: CEREBRA FOUNDATION 07_001. Duration: 01/10/2007 - 31/09/2013.

Gratacós E. **eVV- endoVascularVision: new endoscopic tools for real time vascular assisted vision.** Sponsored by: European Commission 251356. Duration: 01/09/2010 - 30/08/2014.

Gratacós E. **u-volumes. Novel Ultrasound-based Tridimensional Tools for Structural and Functional Evaluation of Volumes of Interest in Human Organs.** Sponsored by: European Commission 217911. Duration: 01/08/2008 - 30/07/2012.

Gratacós E. **Biomarcadors quantitatius d'imatge: Nous mètodes per a la predicció del neurodesenvolupament anormal en nens amb retard de creixement fetal basats en connectòmica.** Sponsored by: LA CAIXA. Duration: 03/12/2010 - 02/12/2014.

Gratacós E. **Desarrollo de marcadores predictivos y búsqueda de mecanismos moleculares responsables de la reprogramación cardíaca en la restricción de crecimiento fetal.** Sponsored by: Ministerio de Economía y Competitividad SAF2009_08815. Duration: 01/01/2010 - 31/12/2012.

Gratacós E. **Gestión del remodelado cardiovascular mediante integración de tecnologías de monitorización ubicua y conceptos del cuerpo humano fisiológico virtual (cvREMOD).** Sponsored by: CDTI 09/398 - 10/079. Duration: 16/9/2009-31/12/2012.

Gratacós E. **IP- Soft tissue engineering for congenital birth defects in children: new treatment modalities for spina bifida, urogenital and abdominal wall defects (EuroSTEC) Centre coordinador: Stichting Katholieke Universiteit - Radboud University Nijmegen.** Sponsored by: European Commission LSHB-CT-2006-037409. Duration: 01/01/2007-17/07/2012.

Crispi F. **Efecto de la terapia antihipertensiva prenatal sobre el remodelado cardiovascular en la restricción de crecimiento intrauterino.** Sponsored by: Instituto Salud Carlos III PI11/00051. Duration: 01/01/2012 - 31/12/2014.

Sanz M. **Estudio del neurodesarrollo a través de distintas técnicas de resonancia nuclar magnética, (Espectroscopia, DTI Y análisis de texturas) y su asociación con el neurodesarrollo.** Sponsored by: Fundación Dexeus Salud de la Mujer. Duration: 07/03/2012 - 06/03/2014.

Gratacós E. **Monochorionic Multiple Pregnancies: Complications and Management Options.4th international symposium of the Eurofoetus network.** Sponsored by: AGAUR- Generalitat de Catalunya. Duration: 01/11/2012 - 01/11/2012.

Borrell A. **Aplicación clínica del genotipado RHD fetal en sangre materna en una población general de estantes RHD negativas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/90539. Duration: 01/01/2010-31/01/2012.

Palacio M. **Evaluación del valor predictivo de mal resultado perinatal del perfil proteómico y metabolómico cérvico-vaginal en pacientes con amenaza de parto prematuro y rotura prematura de membranas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01308. Duration: 01/01/2011-31/12/2013.

Crispi F. **Efecto de la terapia antihipertensiva prenatal sobre el remodelado cardiovascular en la restricción de crecimiento intrauterino.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00051. Duration: 01/01/2012-31/12/2014.

Borrell A. **Papel de la hormona antimuleriana como marcador de edad ovárica en el cribado prenatal de síndrome de down.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00685. Duration: 01/01/2012-31/12/2014.

Gratacós E.; Oliveros L. **Marcadores tempranos de Cardiopatía fetal: Correlación entre Microarreglos de RNA.** Sponsored by: Fundación Carolina-Fundación BBVA. Duration: 30/01/2012 - 28/12/2012.

Palacio M. **Progesterona vaginal como tratamiento de mantenimiento de gestantes con amenaza de parto pretérmino.(Promesa).** Sponsored by: Instituto de Salud Carlos II EC07/90023I. Duration: 29/10/2007 - 31/12/2012.

Gratacós E. **Clinical use of assessing regional brain circulation perfusion to identify long term neurodevelopmental anomalies in small for gestational age fetuses (SGA).** Sponsored by: Thrasher Research Fund 02828-7. Duration: 01/04/2009 - 31/03/2012.

Palacio M. **Evaluación de la utilidad de la indometacina como tratamiento de soporte en pacientes con amenaza de parto pretérmico y alto riesgo d inflamación intraamniótica: EUDRA-CT: INDOGEST 2010-022998-33.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad, EC10-065. Duration: 01/01/2011-31/12/2013.

Botet F. **Prevención de la Nefrocalcinosis del prematuro extremo mediante suplementos de citrato de potasio oral.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-161. Duration: 01/01/2012-31/12/2013.

Figueras F. **Ácido acetilsalicílico para la mejora de la invasión trofoblástica en gestantes con Doppler patológico de las uterinas a las 11-14 semanas de gestación.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-169. Duration: 01/01/2012-31/12/2012.

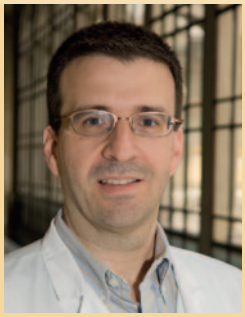
Gratacos E. **Diagnóstico precoz en niños con daño cerebral y trastornos del aprendizaje.** Sponsored by: Caja Navarra 14802-2012. Duration: 1/1/2012-31/12/2012.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Viral hepatitis in the immune competent host and in liver transplant patients

GROUP MEMBERS



TEAM LEADER
Xavier Forns (Hospital Clínic)
Tel.: 93 227 54 99
E-mail: xforns@clinic.cat

RESEARCHERS:
Jose M Sánchez-Tapias (Hospital Clínic)
Josep Maria Barrera (Hospital Clínic)
Miquel Bruguera (Hospital Clínic)
Josep Costa (Hospital Clínic)
Miquel Navasa (Hospital Clínic)
Noelia Caro (Fundació Clínic)
Martina Gambato (University of Padua)

PRE-DOCTORAL RESEARCHERS:
Mairene Coto (Fundació Clínic)
Gonzalo Crespo (Hospital Clínic)
Laura Mensa (IDIBAPS, Beca PFIS)
Carlos Fernández (Fundació Clínic)
Sabela Lens (Hospital Clínic)
Zoe Mariño (CIBERehd)

TECHNICIANS:
Patricia González (CIBERehd)

NURSING STAFF:
Concepció Bartrés (Fundació Clínic)

COLLABORATORS:
Sofia Pérez del Pulgar (CIBERehd)
Georgios Koutsoudakis (CIBERehd)
Marta Montero (Fundació Clínic)

TEAM INVOLVED IN: ciberehd

STRATEGIC OBJECTIVES

Investigation of epidemiological, pathogenic, diagnostic and therapeutic aspects of hepatitis virus infections in immune competent patients and liver transplant recipients.

MAIN LINES OF RESEARCH

1. **Development of models for the in vitro study of the hepatitis C virus (HCV).** At present there is only a single model for studying the complete life cycle of HCV. This is a limited model, since it is based on the culture of a single cell line, in which only one viral strain replicates. Over the last year we have characterized the entry receptors in several cell lines and assessed viral entry in these cell systems. Moreover, we have improved the detection of viral replication in Huh7 modified cells in order to be able to screen biological samples in a simple manner. The ultimate aim of these studies is to establish one or more HCV culture systems allowing the growth and adaptation of viruses from biological samples, and which are therefore more representative of in vivo situations. We have established a collaboration with the team of Hepatic Oncology, lead by Dr Jordi Bruix, who has provided us with the new cell lines.
2. **Detection of HCV antigens in liver tissue.** During 2012 we have been able to establish a system to detect HCV antigens in liver tissue from HCV-infected liver transplant patients in formalin-fixed paraffin-embedded liver biopsies. The system has been validated by assessing HCV antigens using confocal microscopy and we have been able to confirm our results in samples provided by other transplant centers. This method might be helpful to establish the diagnosis of severe hepatitis C recurrence after liver transplantation in cases where the histopahtological findings are not conclusive and will be validated prospectively in 2013.

3. **Ultradeep pyrosequencing (UDPS) is a new technology that allows massive sequencing with a relatively short time.** We have started a collaboration with our CIBEREHD partners in Hospital Universitari Vall d'Hebron to study the competition of hepatitis C viral strains in HCV-infected patients who underwent liver transplantation and received a liver from an HCV-infected donor. This study will allow us to dissect in detail the equilibrium of both coexisting virus over time. In addition, our laboratory will try to implement this methodology during 2013 to further analyze viral evolution in patients suffering from severe hepatitis C recurrence after transplantation.
4. **Study of host factors in relation to the natural history and treatment response among patients with chronic hepatitis C**. In this setting, mention should be made of the studies which the group is carrying out on the influence of polymorphisms of the IL28B gene (which encodes for interferon lambda-3) upon the natural history and antiviral treatment response of chronic hepatitis C (in immune competent individuals and liver transplant recipients). In transplant patients with hepatitis C, our group has shown that the presence of a favorable IL28B polymorphism in the recipient, if associated with the favorable polymorphism in the donor liver, significantly increases the antiviral treatment response. We are currently in the process of evaluating if this polymorphism influences the natural history of chronic hepatitis C virus infection.
5. **Noninvasive diagnosis of chronic hepatitis C.** In 2012 we have obtained new results of the LiverBiomark Project, funded by CIBERehd. The project applies metabolomics techniques in an attempt to secure the early identification of those patients with hepatitis C presenting a risk of developing severe forms of the disease (in both immune competent individuals and in liver transplant recipients). In immunocompetent patients we have observed a distinct pattern of metabolites (i.e. biliary acids) in patients with advanced fibrosis (F3 and F4) as compared to those with mild fibrosis (F1). During the next months we would like to see if these results can be extrapolated to liver transplant patients with recurrent hepatitis C.
6. **Treatment of chronic hepatitis C.** Our group continues to focus on improving the efficacy and safety of antiviral therapy in patients with chronic HCV infection. Different areas of clinical research are: **1)** participation in clinical trials using new antiviral molecules (in both early stages of drug development and in pre-marketing phases) in immunocompetent patients, **2)** we are leading some studies using new direct acting antivirals in special populations: decompensated cirrhotics, cirrhotics awaiting liver transplantation and liver transplant recipients, and **3)** during 2012 we finished a prospective study evaluating the safety and efficacy of intravenous silibinin in the peri-transplant setting, demonstrating a strong antiviral effect both before and after liver transplantation.

PUBLICATIONS

ORIGINALS
I.F.: 81.79

1 Udina M.; Castellvi P.; Moreno-Espana J.; Navines R.; Valdes M.; Forns X.; Langohr K.; Sola R.; Vieta E.; Martin-Santos R. **Interferon-Induced Depression in Chronic Hepatitis C: A Systematic Review and Meta-Analysis.** JOURNAL OF CLINICAL PSYCHIATRY. 73:1128-1138. **I.F.: 5.80.**

2 Corradi F.; Brusasco C.; Fernandez J.; Vila J.; Ramirez M.J.; Seva-Pereira T.; Fernandez-Varo G.; Ben Mosbah I.; Acevedo J.; Silva A.; Rocco P.R.M.; Pelosi P.; Gines P.;Navasa M. **Effects of pentoxifylline on intestinal bacterial overgrowth, bacterial translocation and spontaneous bacterial peritonitis in cirrhotic rats with ascites.** DIGESTIVE AND LIVER DISEASE. 44 (3): 239-244. **I.F.: 3.05.**

3 Crespo G.; Fernandez-Varo G.; Marino Z.; Casals G.; Miquel R.; Martinez S.M.; Gilabert R.; Forns X.; Jimenez W.; Navasa M. **ARFI, FibroScan (R), ELF, and their combinations in the assessment of liver fibrosis: A prospective study.** JOURNAL OF HEPATOLOGY. 44: 239-244. **I.F.: 9.26.**

4 Serfaty L.; Forns X.; Goeser T.; Ferenci P.; Nevens F.; Carosi G.; Drenth J.P.; Lonjon-Domanec I.; DeMasi R.; Picchio G.; Beumont M.; Marcellin P. **Insulin resistance and response to telaprevir plus peginterferon alpha and ribavirin in treatment-naive patients infected with HCV genotype 1.** GUT. 61:1473-1480. **I.F.: 10.11.**

5 Coto-Llerena M.; Crespo G; Gonzalez P.; Koutsoudakis G.; Miquel R.; Navasa M.; Forns X.;

Perez-del-Pulgar S. **Determination of IL28B polymorphisms in liver biopsies obtained after liver transplantation.** JOURNAL OF HEPATOLOGY. 56 (2): 355-358. **I.F.: 9.26.**

6 Winston D.J.; Saliba F.; Blumberg E.; Abouljoud M.; Garcia-Diaz J.B.; Goss J.A.; Clough L.; Avery R.; Limaye A.P.; Ericzon B.G.; Navasa M.; Troisi R.I.; Chen H.; Villano S.A.; Uknis M.E. **Efficacy and Safety of Maribavir Dosed at 100 mg Orally Twice Daily for the Prevention of Cytomegalovirus Disease in Liver Transplant Recipients: A Randomized, Double-Blind, Multicenter Controlled Trial.** AMERICAN JOURNAL OF TRANSPLANTATION. 12(11):3021-30. **I.F.: 6.39.**

7 Koutsoudakis G.; Dragun J.; Perez-del-Pulgar S.; Coto-Llerena M.; Mensa L.; Crespo G.; Gonzalez P.; Navasa M.; Forns X. **Interplay between Basic Residues of Hepatitis C Virus Glycoprotein E2 with Viral Receptors, Neutralizing Antibodies and Lipoproteins.** PLOS ONE. 7: e52651. **I.F.: 4.09.**

8 Martinez S.M.; Foucher J.; Combis J.M.; Metivier S.; Brunetto M.; Carpon D.; Bourliere M.; Bronowicki J.P.; Thong D.; Maynard-Muet M.; Lucidarme D.; Merrouche W.; Forns X.; de Ledinghen V. **Longitudinal Liver Stiffness Assessment in Patients with Chronic Hepatitis C Undergoing Antiviral Therapy.** PLOS ONE. 7: e47715. **I.F.: 4.09.**

9 Koutsoudakis G.; Perez-del-Pulgar S.; Gonzalez P.; Crespo G.; Navasa M.; Forns X. **A Gaussia Luciferase Cell-Based System to Assess the Infection of Cell Culture- and Serum-Derived Hepatitis C Virus.** PLOS ONE. 7(12): e53254. **I.F.: 4.09.**

10 Borras E.; Urbiztondo L.; Costa J.; Batalla J.; Torner N.; Plasencia A.; Salleras L.; Dominguez A. **Measles antibodies and response to vaccination in children aged less than 14 months: implications for age of vaccination.** EPIDEMIOLOGY AND INFECTION. 140: 1599-1606. **I.F.: 2.84.**

11 Esteve M.; Dominguez A.; Urbiztondo L.; Borras E.; Costa J.; Broner S.;Campins M.; Bayas J.M. **Prevalence of susceptibility to tetanus and diphtheria in health care workers in Catalonia.** AMERICAN JOURNAL OF INFECTION CONTROL. 40: 896-898. **I.F.: 2.40.**

12 De Gottardi A.; Seijo S.; Mila M.; Alvarez M.I.; Bruguera M.; Abraldes J.G.; Bosch J.; Garcia-Pagan J.C. **Bone morphogenetic protein receptor 2 in patients with idiopathic portal hypertension.** JOURNAL OF CELLULAR AND MOLECULAR MEDICINE. 16: 2017-2021. **I.F.: 4.12.**

13 Bruguera M.; Delgado S.; Viger M.; Benet J.; Bruguera R.; Arimany J. **Medicolegal analysis of legal claims in bariatric surgery.** CIRUGIA ESPANOLA. 90 (4): 254-259. **I.F.: 0.87.**

14 Marti J.; Fuster J.; Navasa M.; Ferrer J.; Rimola A.; Pelegrina A.; Fondevila C.; Garcia-Valdecasas J.C. **Effects of Graft Quality on Non-Urgent Liver Retransplantation Survival: Should We Avoid High-Risk Donors?** WORLD JOURNAL OF SURGERY. 36: 2914-2922. **I.F.: 2.36.**

15 Balderramo D.; Sendino O.; Burrel M.; Real M.I.; Blasi A.; Martinez-Palli G.; Bordas J.M.; Garcia-Valdecasas J.C.; Rimola A.; Navasa M.; Llach J.; Cardenas A. **Risk factors and outcomes of failed endoscopic retrograde cholangiopancreatography in liver transplant recipients with anastomotic biliary strictures: A case-control study.** LIVER TRANSPLANTATION. 18 (4): 482-489. **I.F.: 3.39.**

16 Laguno M.; Martinez-Rebollar M.; Perez I.; Costa J.; Larrousse M.; Calvo M.; Lonca M.; Munoz A.; Gonzalez-Cordon A.; Blanco J.L.; Martinez E.; Gatell J.M.; Mallolas J. **Low Rate of Sustained Virological Response in an Outbreak of Acute Hepatitis C in HIV-Infected Patients.** AIDS RESEARCH AND HUMAN RETROVIRUSES. 28: 1297-1300. **I.F.: 2.25.**

17 Fondevila C.; Hessheimer A.J.; Flores E.; Ruiz A.; Mestres N.; Calatayud D.; Paredes D.; Rodriguez C.; Fuster J.; Navasa M.; Rimola A.; Taura P.; Garcia-Valdecasas J.C. **Applicability and Results of Maastricht Type 2 Donation After Cardiac Death Liver Transplantation.** AMERICAN JOURNAL OF TRANSPLANTATION. 12 (1): 162-170. **I.F.: 6.39.**

18 Hoyo I.; Sanclemente G.; Cervera C.; Cofán F.; Ricart M.J.; Perez-Villa F.; Navasa M.; Marcos M.A.; Puig de la Bellacasa J.; Moreno A. **Opportunistic pulmonary infections in solid organ transplant recipients.** TRANSPL P. 44:2673-2375 **I.F.: 1.01.**

REVIEWS
I.F.: 11.67

1 Crespo G.; Marino Z.; Navasa M.; Forns X. **Viral Hepatitis in Liver Transplantation.** GASTROENTEROLOGY. 142 (6): 1373. **I.F.: 11.67.**

EDITORIALS
I.F.: 13.08

1 Bruguera M. **Being a physician... "getting close to retirement".** REVISTA CLINICA ESPANOLA. 212(6): 311-6. **I.F.: 2.01.**

2 Bessone F.; Hernandez N.; Davalos M.; Parana R.; Schinoni M.I.; Lizarzabal M.; Kershenobich D.; Loaeza A.; Arrese M.; Chirino R.; Mendez-Sanchez N.; Fay F.; Bruguera M.; Stephens C.; Lucena M.I.; Andrade R.J. **Building a Spanish-Latin American network on drug induced liver injury: much to get from a joint collaborative initiative.** ANNALS OF HEPATOLOGY. 11 (3): 544-549. **I.F.: 1.81.**

3 Villanueva A.; Forns X.; Llovet J.M. **Molecular epidemiology in HCV-related hepatocellular carcinoma: First steps.** JOURNAL OF HEPATOLOGY. 57 (1): 213-214. **I.F.: 9.26.**

CLINICAL GUIDELINES
I.F.: 5.54

1 Buti M.; Garcia-Samaniego J.; Prieto M.; Rodriguez M.; Sanchez-Tapias, J.M.; Suarez E.; Esteban R. **Consensus document of the spanish association for the study of the liver on the treatment of Hepatitis B infection (2012).** GASTROENTEROLOGIA Y HEPATOLOGIA. 35: 512-528. **I.F.: 0.73.**

2 Jacobson I.M.; Pawlotsky J.M.; Afdhal N.H.; Dusheiko G.M.; Forns X.; Jensen D.M.; Poordad F.; Schulz J. **A practical guide for the use of boceprevir and telaprevir for the treatment of hepatitis C.** J VIRAL HEPATITIS. 19 Suppl 2:1-26. **I.F.: 4.09.**

3 Bruguera M.; Esteban R.; FornsX.; Planas R.; Quer J.C.; Sola R.; Vergara M. **Position paper of the Catalan Society of Gastroenterology: treatment of Genotype 1 Chronic Hepatitis C Virus with Triple Therapy.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35: 667-674. **I.F.: 0.73.**

MULTICENTRICS
I.F.: 13.42

1 Buti M.; Morillas R.M.; Prieto M.; Diago M.; Pérez J.; Solà R.; Bonet L.; Palau A.; Testillano M.; García-Samaniego J.; Rodríguez M.; Oriente Study Group. **Efficacy and safety of entecavir in clinical practice in treatment-naive Caucasian chronic hepatitis B patients.** EUR J GASTROEN HEPAT. 24(5):535-42. **I.F.: 1.76.**

2 Wedemeyer H.; Jensen D.M.; Godofsky E.; Mani N.; Pawlotsky J.M.; Miller V.; Definitions/ Nomenclature Working Group* of the HCV DrAG (HCV Drug Development Advisory Group), under the auspices of the Forum for Collaborative HIV Research. **Recommendations for standardized nomenclature and definitions of viral response in trials of hepatitis C virusinvestigational agents.** HEPATOLOGY. 56(6):2398-403. **I.F.: 11.66.**

GRANTS FOR RESEARCH IN PROGRESS

Forns X.J. **Hepatitis víriques a l'hoste immunocompetent i al trasplantat hepàtic.** Sponsored by: AGAUR 2009_SGR_1503. Duration: 23/9/2009-31/12/2013.

Navasa M. **Infección del injerto por el virus de la hepatitis C (VHC) en el trasplante hepático: cinética viral precoz, mecanismos de entrada e histopatología y diagnóstico no invasivo de la fibrosis.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01551. Duration: 01/01/2011-31/12/2013.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	90.08	15	11	1
2011	77.73	15	8	2
2012	81.79	18	13	1

Forns X. **Cultivo de virus de la hepatitis C (genotipos 1 y 3) a partir de suero de pacientes trasplantados hepáticos (TH). Estudio del efecto del TH en la cuasispecie viral mediante pirosecuenciación.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01907. Duration: 01/01/2012-31/12/2015

Forns X. **Early identification of severe hepatitis C recurrence after liver transplantation.** Sponsored by: Roche Organ Transplantation Research Foundation INT_ROTRF_11_01. Duration: 1/10/2011-30/11/2013

DOCTORAL THESES

Forns X. **Infección por el virus de la hepatitis C: estudio de los receptores de entrada en el hepatocito y utilidad de los métodos no invasivos en el diagnóstico de la fibrosis.** PhD student: Gonzalo Crespo Conde.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Pathophysiology and treatment of ascites and altered renal function in liver cirrhosis

GROUP MEMBERS

TEAM LEADER
Vicente Arroyo (Hospital Clínic)
Tel.: 93 227 1724
E-mail: varroyo@clinic.cat

RESEARCHERS:
Ramón Bataller (IDIBAPS)
Joan Clària (Hospital Clínic)
Pere Ginès (Hospital Clínic)
Mónica Guevara (IDIBAPS)
Wladimiro Jiménez (Hospital Clínic)
Manuel Morales-Ruiz (Hospital Clínic)
Javier Fernández-Gómez (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Ana González-Périz (CIBERehd)
Esther Titos (CIBERehd)
Guillermo Fernandez Varó (CIBERehd)
Pau Sancho (IDIBAPS)
Gregori Casals (Fundació Clínic)
Mar Coll (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Montserrat Pauta (FPI-MEC)
Jordi Ribera (CIBERehd)
Marcos Martínez-Clemente (MEC)
Eva Morán (FPU-MEC)
Juan Acevedo (Hospital Clínic)
Cristina López Vicario (IDIBAPS)
Vedrana Reichemback (Fundació Clínic)
Silvia Affò (IDIBAPS)
Oriol Morales (CIBERehd)
José Altamirano (IDIBAPS)
Bibiana Rius Boadas (Fundació Clínic)
Verónica García Alonso (FPI MEC)
Daniel Rodrigo Torres (FPU-MEC)
Javier Michelena (CIBERehd)
Denisse Oro Bozzini (Fundació Clínic)
Ezequiel Rodriguez (Fundació Clínic)
Rogelio Barreto (Fundació Clinic)
Chiara Elia (EASL)
Isabel Graupera (IDIBAPS)
Xavier Ariza (Fundació Clínic)
Valeria Tubita (Fundació Clínic)
Delia Blaya (IDIBAPS)

TECHNICIANS:
Montse Bernat (Hospital Clínic)
Cristina Díez (Hospital Clínic)
Cristina Millán (IDIBAPS)
Carmen Cano (Hospital Clínic)

NURSING STAFF:
Miriam Castro (CIBERehd)
Raquel Cela (Hospital Clínic)
Rebeca Moreira (Fundació Clinic)

COLLABORATORS:
Jordi Colmenero (Hospital Clínic)
Elsa Solà- Verges (Hospital Clínic)
Marco Pavesi (CIBERehd)
Nuria Fabrellas (Universitat de Barcelona)

TEAM INVOLVED IN: ciberehd

STRATEGIC OBJECTIVES

This is an interdisciplinary group that investigates the mechanisms of progression and treatment of liver fibrotic inflammation leading to cirrhosis, as well as the pathogenesis and treatment of the multiorgan complications derived from the existence of established liver cirrhosis.

MAIN LINES OF RESEARCH

1. Molecular determinants of liver inflammation. Role of the Kupffer cells.
2. Acute bacterial infections in cirrhosis.
3. Pathophysiology and treatment of hepatorenal syndrome and renal failure associated with bacterial infections.
4. Evaluation of cirrhotic myocardiopathy.
5. Relationship between hepatic encephalopathy and alterations in renal function in cirrhosis.
6. Pathogenesis, clinical implications and treatment of hyponatremia.
7. Evaluation of different brain MRI techniques in cirrhotic patients. Relationship to hepatic encephalopathy.
8. Role of endogenous cannabinoids in the physiopathology of arterial vasodilatation.
9. Application of genomics and gene therapy to liver dysfunction.
10. Angiogenesis, endothelial dysfunction, edema and vascular remodeling in liver cirrhosis.
11. Pathogenesis of liver fibrosis: cellular bases and identification of new therapeutic strategies.
12. Physiopathology and treatment of arterial vasodilatation.
13. Physiopathology and treatment of ascites.
14. Artificial liver support systems.
15. Identification of new therapeutic targets in alcoholic hepatitis.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	240.97	28	23	3
2011	94.79	12	10	2
2012	178.78	24	21	2

ORIGINALS
I.F.: 178.78

1 Pauta M.; Melgar-Lesmes P.; Ribera J.; Casals G.; Jimenez W.; Morales-Ruiz M. **Induction of endothelial-to-mesenchymal transition in fibrotic livers of CCl4-treated mice.** HEPATOLOGY. 56: 1127A-1128A. **I.F.: 11.66.**

2 Wong F.; Watson H.; Gerbes A.; Vilstrup H.; Badalamenti S.; Bernardi M.; Gines P.; Grp S.I. **Satavaptan for the management of ascites in cirrhosis: efficacy and safety across the spectrum of ascites severity.** GUT. 61 (1): 108-116. **I.F.: 10.11.**

3 Jalan R.; Gines P.; Olson J.C.; Mookerjee R.P.; Moreau R.; Garcia-Tsao G.; Arroyo V.; Kamath P.S. **Acute-on chronic liver failure.** JOURNAL OF HEPATOLOGY. 57: 1336-1348. **I.F.: 9.26.**

4 Reichenbach V.; Fernandez-Varo G.; Casals G.; Oro D.; Ros J.; Melgar-Lesmes P.; Weiskirchen R.; Morales-Ruiz M.; Jimenez W. **Adenoviral dominant-negative soluble PDGFR beta improves hepatic collagen, systemic hemodynamics, and portal pressure in fibrotic rats.** JOURNAL OF HEPATOLOGY. 57: 967-973. **I.F.: 9.26.**

5 Guevara M.; Terra C.; Nazar A.; Sola E.; Fernandez J.; Pavesi M.; Arroyo V.; Gines P. **Albumin for bacterial infections other than spontaneous bacterial peritonitis in cirrhosis. A randomized, controlled study.** JOURNAL OF HEPATOLOGY. 57: 759-765. **I.F.: 9.26.**

6 Sola E.; Watson H.; Graupera I.; Turon F.; Barreto R.; Rodriguez E.; Pavesi M.; Arroyo V.; Guevara M.; Gines P. **Factors related to quality of life in patients with cirrhosis and ascites: Relevance of serum sodium concentration and leg edema.** JOURNAL OF HEPATOLOGY. 57: 1199-1206. **I.F.: 9.26.**

7 Angeli P.; Gines P. **Hepatorenal syndrome, MELD score and liver transplantation: An evolving issue with relevant implications for clinical practice.** JOURNAL OF HEPATOLOGY. 57: 1135-1140. **I.F.: 9.26.**

8 Cardenas A.; Gines P.; Marotta P.; Czerwiec F.; Oyuang J.; Guevara M.; Afdhal N.H. **Tolvaptan, an oral vasopressin antagonist, in the treatment of hyponatremia in cirrhosis.** JOURNAL OF HEPATOLOGY. 56 (3): 571-578. **I.F.: 9.26.**

9 Cirera-Salinas D.; Pauta M.; Allen R.M.; Salerno A.G.; Ramirez C.M.; Chamorro-Jorganes A.; Wanschel A.C.; Lasuncion M.A.; Morales-Ruiz M.; Suarez Y.; Baldan A.; Esplugues E.; Fernandez-Hernando C. **Mir-33 regulates cell proliferation and cell cycle progression.** CELL CYCLE. 11 (5): 922-933. **I.F.: 5.36.**

10 Zhang P.; Huang A.; Morales-Ruiz M.; Starcher B.C.; Huang Y.; Sessa W.C.; Niklason L.E.; Giordano F.J. **Engineered Zinc-Finger Proteins Can Compensate Genetic Haploinsufficiency by Transcriptional Activation of the Wild-Type Allele: Application to Willams-Beuren Syndrome and Supravalvular Aortic Stenosis.** HUMAN GENE THERAPY. 23: 1186-1199. **I.F.: 4.22.**

11 Garcia-Ayllon M.S.; Millan C.; Serra-Basante C.; Bataller R.; Saez-Valero J. **Readthrough Acetylcholinesterase Is Increased in Human Liver Cirrhosis.** PLOS ONE. 7. **I.F.: 4.09.**

12 Hoijman E.; Rocha-Viegas L.; Kalko S.G.; Rubinstein N.; Morales-Ruiz M.; Joffe E.B.D.; Kordon E.C.; Pecci A. **Glucocorticoid alternative effects on proliferating and differentiated mammary epithelium are associated to opposite regulation of cell-cycle inhibitor expression.** JOURNAL OF CELLULAR PHYSIOLOGY. 227 (4): 1721-1730. **I.F.: 3.87.**

13 Reichenbach V.; Ros J.; Fernandez-Varo G.; Casals G.; Melgar-Lesmes P.; Campos T.; Makriyannis A.; Morales-Ruiz M.; Jimenez W. **Prevention of Fibrosis Progression in CCl4-Treated Rats: Role of the Hepatic Endocannabinoid and Apelin Systems.** JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS. 340 (3): 629-637. **I.F.: 3.83.**

14 Schrier R.W.; Shchekochikhin D.; Gines P. **Renal failure in cirrhosis: prerenal azotemia, hepatorenal syndrome and acute tubular necrosis.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (7): 2625-2628. **I.F.: 3.40.**

15 Noguera A.; Gomez C.; Faner R.; Cosio B.; Gonzalez-Periz A.; Claria J.; Carvajal A.; Agusti A. **An investigation of the resolution of inflammation (catabasis) in COPD.** RESPIRATORY RESEARCH. 13. **I.F.: 3.36.**

16 Corradi F.; Brusasco C.; Fernandez J.; Vila J.; Ramirez M.J.; Seva-Pereira T.; Fernandez-Varo G.; Ben Mosbah I.; Acevedo J.; Silva A.; Rocco P.R.M.; Pelosi P.; Gines P.; Navasa M. **Effects of pentoxifylline on intestinal**

bacterial overgrowth, bacterial translocation and spontaneous bacterial peritonitis in cirrhotic rats with ascites. DIGESTIVE AND LIVER DISEASE. 44 (3): 239-244. **I.F.: 3.05.**

17 Fagundes C.; Pepin M.N.; Guevara M.; Barreto R.; Casals G.; Sola E.; Pereira G.; Rodriguez E.; Garcia E.; Prado V.; Poch E.; Jimenez W.; Fernandez J.; Arroyo V.; Gines P. **Urinary neutrophil gelatinase-associated lipocalin as biomarker in the differential diagnosis of impairment of kidney function in cirrhosis.** JOURNAL OF HEPATOLOGY. 57: 267-273. **I.F.: 9.26.**

18 Pereira G.; Guevara M.; Fagundes C.; Sola E.; Rodriguez E.; Fernandez J.; Pavesi M.; Arroyo V.; Gines P. **Renal failure and hyponatremia in patients with cirrhosis and skin and soft tissue infection. A retrospective study.** JOURNAL OF HEPATOLOGY. 56 (5): 1040-1046. **I.F.: 9.26.**

19 Altamirano J.; Bataller R.; Cardenas A.; Michelena J.; Freixa N.; Monras M.; Rios J.; Liccioni A.; Caballeria J.; Gual A.; Lligona A. **Predictive factors of abstinence in patients undergoing liver transplantation for alcoholic liver disease.** ANNALS OG HEPATOLOGY. 11 (2): 213-221. **I.F.: 1.81.**

20 Sancho-Bru P.; Altamirano J.; Rodrigo-Torres D.; Coll M.; Millan C.; Lozano J.J.; Miquel R.; Arroyo V.; Caballeria J.; Gines P.; Bataller R. **Liver progenitor cell markers correlate with liver damage and predict short-term mortality in patients with alcoholic hepatitis.** HEPATOLOGY. 55 (6): 1931-1941. **I.F.: 11.66.**

21 Altamirano J.; Fagundes C.; Dominguez M.; Garcia E.; Michelena J.; Cardenas A.; Guevara M.; Pereira G.; Torres-Vigil K.; Arroyo V.; Caballeria J.; Gines P.; Bataller R. **Acute Kidney Injury Is an Early Predictor of Mortality for Patients With Alcoholic Hepatitis.** CLINICAL GASTROENTEROLOGY AND HEPATOLOGY. 10 (1): 65-U147. **I.F.: 5.63.**

22 Kribben A.; Gerken G.; Haag S.; Herget-Rosenthal S.; Treichel U.; Betz C.; Sarrazin C.; Hoste E.; Van Vlierberghe H.; Escorsell A.; Hafer C.; Schreiner O.; Galle P.R.; Mancini E.; Caraceni P.; Karvellas C.J.; Salmhofer H.; Knotek M.; Gines P.; Kozik-Jaromin J.; Rifai K. **Effects of Fractionated Plasma Separation and Adsorption on Survival in Patients With Acute-on-Chronic Liver Failure.** GASTROENTEROLOGY. 142 (4): 782-U197. **I.F.: 11.67.**

23 Crespo G.; Fernandez-Varo G.; Marino Z.; Casals G.; Miquel R.; Martinez S.M.; Gilabert R.; Forns X.; Jimenez W.; Navasa M. **ARFI, FibroScan (R), ELF, and their combinations in the assessment of liver fibrosis: A prospective study.** JOURNAL OF HEPATOLOGY. 57: 281-287. **I.F.: 9.26.**

24 Fernandez J.; Acevedo J.; Castro M.; Garcia O.; De Lope C.; Roca D.; Pavesi M.; Sola E.; Moreira L.; Silva A.; Seva-Pereira T.; Corradi F.; Mensa J.; Gines P.; Arroyo V. **Prevalence and risk factors of infections by multiresistant bacteria in cirrhosis: A prospective study.** HEPATOLOGY. 55 (5): 1551-1561. **I.F.: 11.66.**

REVIEWS
I.F.: 16.88

1 Fagundes C.; Gines P. **Hepatorenal Syndrome: A Severe, but Treatable, Cause of Kidney Failure in Cirrhosis.** AMERICAN JOURNAL OF KIDNEY DISEASES. 59 (6): 874-885. **I.F.: 5.43.**

2 Altamirano J.; Michelena J.; Prado V.; Caballeria J.; Bataller R. **Early liver transplantation in alcoholic hepatitis: an option in the treatment of steroid-unresponsive patients.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35: 457-459. **I.F.: 0.73.**

3 Arroyo V.; Fernandez J. **Physiopathological bases for the use of human albumin in liver cirrhosis.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35 (1): 42-49. **I.F.: 0.73.**

4 Abraldes J.G.; Pique J.M.; Arroyo V. **Clinical practice guidelines in gastroenterology and hepatology. A resource underused by the Spanish Association for the Study of the Liver and the Spanish Association of Gastroenterology.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 681-683. **I.F.: 0.73.**

5 Ginès P.; Fernández J.; Durand F.; Saliba F. **Management of Critically ill Cirrhotic patients.** JOURNAL OF HEPATOLOGY. 56 Suppl 1:S13-24. **I.F.: 9.26.**

EDITORIALS
I.F.: 10.11

1 Claria J. **Natural killer cell recognition and killing of activated hepatic stellate cells.** GUT. 61 (6): 792-793. **I.F.: 10.11.**

GRANTS FOR RESEARCH IN PROGRESS

Gines P. **Grup de recerca en hepatologia clinica.** Sponsored by: AGAUR 2009_SGR_1401. Duration: 23/9/2009-31/12/2013.

Arroyo V. **Investigació hepàtica: recerca bàsica i experimental.** Sponsored by: AGAUR 2009_SGR_1484. Duration: 15/9/2009-31/12/2013.

Jimenez W. **Grupo de Investigación traslacional en nuevas estrategias de diagnóstico y tratamiento de la enfermedad hepática.** Sponsored by: AGAUR 2009_SGR_1496. Duration: 20/8/2009-31/12/2013.

Sancho P. **Hepatic Microfluidic Bioreactor.** Sponsored by: European Commission FP7-2010-TESTING_1. Duration: 1/1/2011-31/12/2015.

Gines P. **Efecto de la administración prolongada de albúmina y midodrina en la prevención de complicaciones en pacientes en lista de espera de transplante hepático.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC07/90077. Duration: 29/10/2007-31/12/2013.

Gines P. **Disfunción renal en la cirrosis hepática. Investigación de nuevos métodos diagnósticos y terapéuticos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI080126. Duration: 1/1/2009-31/12/2013.

Fernandez J. **Polimorfismos genéticos del sistema inmune innato (MBL/MASP-2 y TLR2/4) y riesgo de infecciones bacterianas en la cirrosis avanzada.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01373. Duration: 1/1/2011-31/12/2013.

Bataller R. **Enfermedad hepática en pacientes con consumo de riesgo de alcohol: Identificación de los factores genéticos y ambientales y de nuevas dianas terapéuticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01990. Duration: 1/1/2012-31/12/2014.

Morales M. **Función fisiopatológica de la activación de las células endoteliales hepáticas en la cirrosis. Posibles implicaciones terapéuticas.** Sponsored by: Ministerio de Economía y Competitividad SAF2007-63069. Duration: 1/10/2007-30/8/2012.

Claria J. **Papel de los mediadores lipídicos en la inflamación del tejido adiposo y su influencia sobre la respuesta esteatogénica del higado en la obesidad.** Sponsored by: Ministerio de Economía y Competitividad SAF2009_08767. Duration: 1/1/2010-30/6/2013.

Jimenez W. **Remodelado tisular y disfunción circulatoria en modelos experimentales de enfermedad hepática. Identificación y caracterización de nuevas dianas terapeuticas.** Sponsored by: Ministerio de Economía y Competitividad SAF2009_08839. Duration: 1/1/2010-31/12/2012.

Bataller R. **Desarrollo de un test genético para predecir la progresión de la fibrosis en pacientes con hepatitis crónica C.** Sponsored by: Ministerio de Economía y Competitividad PET2008_0304. Duration: 1/3/2009-2/11/2012.

Morales M. **Implicaciones básicas y traslacionales del estudio de las alteraciones funcionales y moleculares del endotelio hepático en la cirrosis.** Sponsored by: Ministerio de Economía y Competitividad SAF2010-19025. Duration: 1/1/2011-31/12/2013.

Sancho P. **MIF in progression and treatment of ALD.** Sponsored by: National Institutes of Health 1U01AA020821-01A1. Duration: 1/9/2012-31/8/2013.

DOCTORAL THESES

Gines P. **Avaluació d'un programa d'infermeria d'atenció immediata a persones amb problemes de salut aguts lleus.** PhD student: Núria Fabrellas Padrés.

Jiménez W. **Hepatic remodeling, serum biomarkers and prevention of fibrosis progression in liver disease.** PhD student: Vedrana Reichenbach Marinkovic.

Morales M. **Caracterización de la disfunción vascular sanguínea y linfática en la cirrosis hepática: evaluación de la inhibición del factor de crecimiento placentario y del óxido nítrico como estrategias terapéuticas.** PhD student: Jordi Ribera Sabaté.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Hepatic oncology

GROUP MEMBERS

TEAM LEADER
Jordi Bruix (Hospital Clínic)
Tel.: 93 227 98 03
E-mail: jbruix@clinic.cat

GROUP LEADER:
Josep M. Llovet (ICREA-IDIBAPS)

RESEARCHERS:
M. Carmen Ayuso (Hospital Clínic)
Concepció Bru (Hospital Clínic)
Josep Fuster (Hospital Clínic)
Ramon Vilana (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Clara Alsinet (Fundació Clínic)
María Reig (IDIBAPS)
Carlos Rodriguez de Lope (Hospital Clínic)
Helena Cornella (IDIBAPS)

TECHNICIANS:
Juan M. López (Fundació Clínic)
Ingrid Rengel (CIBERehd)

NURSING STAFF:
Neus Llarch (Fundació Clínic)

ADMINISTRATIVE STAFF:
Núria Pérez (Fundació Clínic)
Ariadna Farré (IDIBAPS)

COLLABORATORS:
Loreto Boix (CIBERehd)
Judit Peix (CIBERehd)
Manel Solé (Hospital Clínic)
Victoria Tovar (IDIBAPS)
Alejandro Forner (CIBERehd)
Jordi Rimola (CDIC)
Marta Burrel (CDIC)
Lluís Bianchi (CDIC)
Augusto Villanueva (Ciberehd)
M. Angeles García-Criado (Hospital Clínic)

TEAM INVOLVED IN: ciberehd

STRATEGIC OBJECTIVES

It is a multidisciplinary team, known internationally as "Barcelona Clinic Liver Cancer (BCLC) group", which develops an intense clinical and translational research in liver cancer. The aim of the team is to investigate the efficacy of clinical and therapeutic interventions as well as the mechanisms regulating the disease progression.

MAIN LINES OF RESEARCH

At clinical level, work is done in the definition of new diagnostic tools and, with a view to evaluating treatment efficacy, the optimum criteria for indicating radical treatment are perfected (surgical resection, transplantation, percutaneous approach with ablation) – with the aim of ensuring maximum efficacy in terms of both survival and associated morbidity. In the treatment setting, evaluations are made of the options for improving the efficacy of non-curative therapies which have been shown to improve survival (arterial chemical embolization, sorafenib). In this sense, phase 1, 2 and 3 studies are carried out and led at international level, with a view to determining the efficacy of new molecular agents. At the same time, evaluations are being made of the efficacy of antiangiogenic treatment to prevent relapse after surgical treatment or ablation. Likewise,cancer prevention studies are being conducted in patients with liver cirrhosis. In relation to translational research, studies are being made of the pathogenesis of hepatocellular carcinoma, together with the analysis of new signaling pathways and genomic aberrations implicated in the development of the tumor, as well as the identification of novel therapeutic targets. An international genomic research consortium has been created in hepatocellular carcinoma, in collaboration with the Mount Sinai Medical School, Harvard University and the Instituto di Tumori in Milan, which has consolidated a tissue bank of capital importance.

RESEARCH GROUP
TRANSLATIONAL RESEARCH IN HEPATIC ONCOLOGY

Group Leader:
Josep M. Llovet
(ICREA-IDIBAPS)

The group was created in the year 2006 with the purpose of conducting genomic studies in hepatocellular carcinoma and of identifying therapeutic targets and new molecular treatments. We have established two lines of research in the context of an international consortium (HCC Genomic Project), organized by Dr. Llovet, and involving the participation of the BCLC-Clínic-IDIBAPS, the Mount Sinai School of Medicine (NY), the Dana-Farber Cancer Institute and the Broad Institute (Boston), and the National Tumor Institute (Milan):

1. Genomics. Identification of the genomic alterations in hepatocellular carcinoma (HCC), and clarification of their implications in relation to diagnosis and treatment. Integral analysis of the transcriptome (oligonucleotide microarrays) and of the genomic aberrations (SNP arrays). Identification of markers for the early diagnosis of HCC.
2. Signaling pathways and molecular therapies. Identification of the role of the signal transduction pathways in the pathogenesis of HCC, and identification of new therapeutic targets and new molecular treatments. We are currently studying the signaling pathways corresponding to Akt/mTOR, EGFR-Ras-MAPK, IGF and Wnt, in human samples, cell lines and experimental animals.

The group coordinates a European Project, FP-7HEALTH (HEPTROMIC) with 6 academic centers and two companies, with the purpose of exploring the prognostic oncogenes and potential treatment targets in liver cancer. The group has received a 5 years grant as a stable group of the Spanish Association Against Cancer (AECC) to investigate about integrated genomic analysis of intrahepatic colangiocarcionma.

PUBLICATIONS

ORIGINALS
I.F.: 149.73

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	62.23	11	7	1
2011	81.94	10	8	1
2012	149.73	16	15	1

1 Llop E.; Berzigotti A.; Reig M.; Erice E.; Reverter E.; Seijo S.; Abraldes J.G.; Bruix J.; Bosch J.; Garcia-Pagan J.C. **Assessment of portal hypertension by transient elastography in patients with compensated cirrhosis and potentially resectable liver tumors.** JOURNAL OF HEPATOLOGY. 56 (1): 103-108. **I.F.: 9.26.**

2 Toffanin S.; Hoshida Y.; Kojima K.; Villanueva A.; Alsinet C.; Cabellos L.; Cornella H.; Mazzaferro V.; Llovet J.M. **Aberrant Expression of DLK-DIO3 snoRNAs with Oncogenic Activity in a Subclass of Hepatocellular Carcinoma with Aggressive Phenotype.** HEPATOLOGY. 56: 608A-609A. **I.F.: 11.66.**

3 Villanueva A.; Hoshida Y.; Du J.; Kojima K.; Moieni A.; Zender L.; Bruix J.; Esteller M.; Zucman-Rossi J.; Mazzaferro V.; Golub T.R.; Llovet J.M. **Identification of candidate new targets for therapies in hepatocellular carcinoma using kinome profiling.** HEPATOLOGY. 56: 610A-610A. **I.F.: 11.66.**

4 Toffanin S.; Cabellos L.; Alsinet C.; Harrington A.N.; Cornella H.; Reddy M.V.R.; Reddy E.P.; Llovet J.M. **Screening of Novel Kinase Inhibitors Identifies ARK5 as a Novel Therapeutic Target for the Treatment of Hepatocellular Carcinoma.** HEPATOLOGY. 56: 622A-623A. **I.F.: 11.66.**

5 Vetter D.; Cohen-Naftaly M.; Villanueva A.; Lee Y.A.; Kocabayoglu P.; Hannivoort R.; Narla G.; Llovet J.M.; Thung S.N.; Friedman S.L. **Enhanced hepatocarcinogenesis in mouse models and human hepatocellular carcinoma by coordinate KLF6 depletion and increased messenger RNA splicing.** HEPATOLOGY. 56(4):1361-70. **I.F.: 11.66.**

6 Bruix J.; Raoul J.L.; Sherman M.; Mazzaferro V.; Bolondi L.; Craxi A.; Galle P.R.; Santoro A.; Beaugrand M.; Sangiovanni A.; Porta C.; Gerken G.; Marrero J.A.; Nadel A.; Shan M.; Moscovici M.; Voliotis D.; Llovet J.M. **Efficacy and safety of sorafenib in patients with advanced hepatocellular carcinoma: Subanalyses of a phase III trial.** JOURNAL OF HEPATOLOGY. 57: 821-829. **I.F.: 9.26.**

7 Raoul J.L.; Bruix J.; Greten T.F.; Sherman M.; Mazzaferro V.; Hilgard P.; Scherubl H.; Scheulen M.E.; Germanidis G.; Dominguez S.; Ricci S.; Nadel A.; Moscovici M.; Voliotis D.; Llovet J.M. **Relationship between baseline hepatic status and outcome, and effect of sorafenib on liver function: SHARP trial subanalyses.** JOURNAL OF HEPATOLOGY. 56 (5): 1080-1088. **I.F.: 9.26.**

8 Lachenmayer A.; Toffanin S.; Cabellos L.; Alsinet C.; Hoshida Y.; Villanueva A.; Minguez B.; Tsai H.W.; Ward S.C.; Thung S.; Friedman S.L.; Llovet J.M. **Combination therapy for hepatocellular carcinoma: Additive preclinical efficacy of the HDAC inhibitor panobinostat with sorafenib.** JOURNAL OF HEPATOLOGY. 56 (6): 1343-1350. **I.F.: 9.26.**

9 Burrel M.; Reig M.; Forner A.; Barrufet M.; Rodriguez de Lope C.; Tremosini S.; Ayuso C.; Llovet J.M.; Real M.I.; Bruix J. **Survival of patients with hepatocellular carcinoma treated by transarterial chemoembolisation (TACE) using Drug Eluting Beads. Implications for clinical practice and trial design.** JOURNAL OF HEPATOLOGY. 56 (6): 1330-1335. **I.F.: 9.26.**

10 Llovet J.M.; Pena C.E.A.; Lathia C.D.; Shan M.; Meinhardt G.; Bruix J. **Plasma Biomarkers as Predictors of Outcome in Patients with Advanced Hepatocellular Carcinoma.** CLINICAL CANCER RESEARCH. 18 (8): 2290-2300. **I.F.: 7.74.**

11 Lachenmayer A.; Alsinet C.; Savic R.; Cabellos L.; Toffanin S.; Hoshida Y.; Villanueva A.; Minguez B.; Newell P.; Tsai H.W.; Barretina J.; Thung S.; Ward S.C.; Bruix J.; Mazzaferro V.; Schwartz M.; Friedman S.L.; Llovet J.M. **Wnt-Pathway Activation in Two Molecular Classes of Hepatocellular Carcinoma and Experimental Modulation by Sorafenib.** CLINICAL CANCER RESEARCH. 18(18):4997-5007. **I.F.: 7.74.**

12 Torres L.B.; Urrutia N.E.; Aguilar N.B.; Ramos D.F.; Gutierrez de Juan V.; Bruix J.; Boix L.; Bustamante F.J.; Mato J.M.; Martinez-Chantar M.L. **New Oncogenic drivers in hepatocellular carcinoma development: neddylation and its inhibition as new therapeutical approach.** FEBS JOURNAL. 279: 182-183. **I.F.: 3.79.**

13 Tremosini S.; Forner A.; Boix L.; Vilana R.; Bianchi L.; Reig M.; Rimola J.; Rodriguez-Lope C.; Ayuso C.; Sole M.; Bruix J. **Prospective validation of an immunohistochemical panel (glypican 3, heat shock protein 70 and glutamine synthetase) in liver biopsies for diagnosis of very early hepatocellular carcinoma.** GUT. 61: 1481-1487. **I.F.: 10.11.**

14 Rimola J.; Forner A.; Tremosini S.; Reig M.; Vilana R.; Bianchi L.; Rodriguez-Lope C.; Sole M.; Ayuso C.; Bruix J. **Non-invasive diagnosis of hepatocellular carcinoma <= 2 cm in cirrhosis. Diagnostic accuracy assessing fat, capsule and signal intensity at dynamic MRI.** JOURNAL OF HEPATOLOGY. 56 (6): 1317-1323. **I.F.: 9.26.**

15 Villanueva A.; Alsinet C.; Yanger K.; Hoshida Y.; Zong Y.; Toffanin S.; Rodriguez-Carunchio L.; Sole M.; Thung S.; Stanger B.Z.; Llovet J.M. **Notch Signaling Is Activated in Human Hepatocellular Carcinoma and Induces Tumor Formation in Mice.** GASTROENTEROLOGY. 143: 1660. **I.F.: 11.67.**

16 Fondevila C.; Hessheimer A.J.; Flores E.; Ruiz A.; Mestres N.; Calatayud D.; Paredes D.; Rodriguez C.; Fuster J.; Navasa M.; Rimola A.; Taura P.; Garcia-Valdecasas J.C. **Applicability and Results of Maastricht Type 2 Donation After Cardiac Death Liver Transplantation.** AMERICAN JOURNAL OF TRANSPLANTATION. 12 (1): 162-170. **I.F.: 6.39.**

REVIEWS
I.F.: 111.15

1 Forner A.; Llovet J.M.; Bruix J. **Hepatocellular carcinoma.** LANCET. 379 (9822): 1245-1255. **I.F.: 38.28.**

2 Forner A.; Bruix J. **Biomarkers for early diagnosis of hepatocellular carcinoma.** LANCET ONCOLOGY. 13: 750-751. **I.F.: 22.59.**

3 Sherman M.; Bruix J. **Screening for Liver Cancer: The Rush to Judgment.** ANNALS OF INTERNAL MEDICINE. 157: 300-301. **I.F.: 16.73.**

4 Sherman M.; Bruix J.; Porayko M.; Tram T. **Screening for hepatocellular carcinoma: The rationale for the American Association for the Study of Liver Diseases recommendations.** HEPATOLOGY. 56: 793-796. **I.F.: 11.66.**

5 Forner A.; Llovet J.M.; Bruix J. **Chemoembolization for intermediate HCC: Is there proof of survival benefit?** JOURNAL OF HEPATOLOGY. 56 (4): 984-986. **I.F.: 9.26.**

6 Bruix J. **Hepatocellular carcinoma in the EU.** ANNALS OF ONCOLOGY. 23: 6363. **I.F.: 6.42.**

7 De Cecco C.N.; Darnell A.; Rengo M.; Muscogiuri G.; Bellini D.; Ayuso C.; Laghi A. **Dual-Energy CT: Oncologic Applications.** AMERICAN JOURNAL OF ROENTGENOLOGY. 199: S98-S105. **I.F.: 2.77.**

8 Ayuso C.; Rimola J.; Garcia-Criado A. **Imaging of HCC.** ABDOMINAL IMAGING. 37 (2): 215-230. **I.F.: 1.72.**

9 Rimola J.; Rodriguez S.; Cabanas M.L.; Ayuso C.; Panes J.; Cuatrecasas M. **MRI of Crohn's disease: from imaging to pathology.** ABDOMINAL IMAGING. 37 (3): 387-396. **I.F.: 1.72.**

EDITORIALS
I.F.: 26.27

1 Villanueva A.; Forns X.; Llovet J.M. **Molecular epidemiology in HCV-related hepatocellular carcinoma: First steps.** JOURNAL OF HEPATOLOGY. 57 (1): 213-214. **I.F.: 9.26.**

2 Alsinet C.; Villanueva A.; Llovet J.M. **Cell population genetics and deep sequencing: A novel approach for drivers discovery in hepatocellular carcinoma.** JOURNAL OF HEPATOLOGY. 56 (5): 1198-1200. **I.F.: 9.26.**

3 Villanueva A.; Llovet J.M. **Second-Line Therapies in Hepatocellular Carcinoma: Emergence of Resistance to Sorafenib.** CLINICAL CANCER RESEARCH. 18 (7): 1824-1826. **I.F.: 7.74.**

CLINICAL GUIDELINES
I.F.: 15.87

1 Abdo A.A.; Hassanain M.; AlJumah A.; Al Olayan A.; Sanai F.M.; Alsuhaibani H.A.; Abdulkareem H.; Abdallah K.; AlMuaikeel M.; Al Saghier M.; Babatin M.; Kabbani M.; Bazarbashi S.; Metrakos P.; Bruix J.; Saudi Association for the Study of Liver Diseases and Transplantation; Saudi Oncology Society. **Saudi guidelines for the diagnosis and management of hepatocellular carcinoma: technical review and practice guidelines.** ANN SAUDI MED. 32(2):174-99. **I.F.: 1.07.**

2 European Association for Study of Liver; European Organisation for Research and Treatment of Cancer. **EASL-EORTC clinical practice guidelines: management of hepatocellular carcinoma.** EUROPEAN JOURNAL OF CANCER. 48(5):599-641. **I.F.: 5.54.**

3 European Association For The Study Of The Liver; European Organisation For Research And Treatment Of Cancer. **EASL-EORTC clinical practice guidelines: management of hepatocellular carcinoma.** JOURNAL OF HEPATOLOGY. 56(4):908-43. **I.F.: 9.26.**

GRANTS FOR RESEARCH IN PROGRESS

Bruix J. **Oncologia Hepàtica- Barcelona Clinic Liver Cancer (BCLC).** Sponsored by: AGAUR 2009_SGR_1100. Duration: 15/9/2009-31/12/2013.

Llovet J.M. **Recerca translacional en oncología hepàtica.** Sponsored by: AGAUR 2009_SGR_1186 Duration: 22/07/2009 - 31/12/2013.

Llovet J.M. **Oncogenic addiction and gatekeepper genes in hepatocellular carcinoma.** Sponsored by: American Association for Cancer Research 09-60-27-LLOV Duration: 01/07/2009 - 30/06/2012.

Llovet J.M. **HEPTROMIC - Genomic predictors and oncogenic drivers in hepatocellular carcinoma.** Sponsored by: European Commission CE-FP7-HEALTH-2ST-10 259744 Duration: 01/11/2010 - 30/10/2013.

Llovet J.M. **Integrative Genomic Analysis of Human Intrahepatic Cholangiocarcinoma.** Sponsored by: Asociación Española Contra el Cáncer (AECC) GCA110347LLOV Duration: 01/09/2011- 31/08/2014.

Llovet J.M. **GENOMICS - HCC Predictores genómicos pronósticos y nuevas dianas moleculares en el carcinoma hepatocelular.** Sponsored by: Ministerio de Economía y Competitividad SAF2010-16055 Duration: 01/01/2011-1/12/2013.

Bruix J. **Antiangiónesis en el carcinoma hepatocelular (CHC). Seguridad a largo plazo, nuevos criterios de respuesta y mecanismos moleculares de evasión al tratamiento.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01830. Duration: 1/1/2012-31/12/2014.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Liver hemodynamics and portal hypertension. Digestive bleeding secondary to ruptured esophageal varicose veins

GROUP MEMBERS

TEAM LEADER
Jaume Bosch (Hospital Clínic)
Tel.: 93 227 57 90
E-mail: jbosch@clinic.cat

GROUP LEADERS:
Joan C. García-Pagán (Hospital Clínic)
Mercè Fernández Lobato (IDIBAPS)

RESEARCHERS:
Ramon Deulofeu (Hospital Clínic)
Àngels Escorsell (Hospital Clínic)
Mª Rosa Gilabert (Hospital Clínic)
Carles Nicolau (Hospital Clínic)
Juan González-Abraldes (Hospital Clínic)
Jordi Gracia-Sancho (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Aina Rodríguez (CIBERehd)
Vincenzo La Mura (Fundació Clínic)
Marc Mejías (FIS)
Marcos Pasarín (FIS)

PRE-DOCTORAL RESEARCHERS:
Susana Seijó (Fundació Clínic)
Andrea Ribeiro (Fundació Clínic)
Giusi Marrone (ISCIII)
Javier Gallego (CIBERehd)
Eugeni Rosado (CIBERehd)
Marco di Pascoli (EASL)
Enric Reverter (Beca Río Hortega/ CIBERehd)
Federica Cerini (EASL)
Cintia de Meireles (MRLD)
Dinesh Mani Tripathi (ACI-COLABORA)
Sith Siramolpiwat (Hospital Clínic)
Diana Hide (CIBERehd)
Marina Vilaseca (Fundació Clínic)
Stefania Casu (Universitá degli Studi di Cagliari)
Sergi Guix (UB)
Raquel Maeso (UB)
Laura Coch (IDIBAPS)

TECHNICIANS:
Ester García (CIBERehd)
Héctor García (CIBERehd)
Montse Monclús (IDIBAPS)
Sergi Vila (CIBERehd)

NURSING STAFF:
Rosa Sáez (CIBERehd)
Lara Orts (CIBERehd)

COLLABORATORS:
Annalisa Berzigotti (Hospital Clínic)

TEAM INVOLVED IN: ciberehd

STRATEGIC OBJECTIVES

The gaining of in-depth knowledge of the mechanisms underlying portal hypertension –the main complication of liver diseases– and development of new treatments for this syndrome, and new noninvasive assessment techniques.

MAIN LINES OF RESEARCH

1. Factors regulating liver microcirculation under normal conditions and in cirrhosis, based on isolated liver perfusion studies and studies in liver sinusoid endothelial cells.
2. Post-transcriptional regulation of endothelial nitric oxide synthase (eNOS) activity. Relevance in the treatment of portal hypertension.
3. Regulation of the transcription of liver sinusoid endothelial cell protecting genes: relevance in the physiopathology of portal hypertension, in ex vivo liver preservation and in cirrhosis complications.
4. Angiogenesis and portal hypertension: contribution to regulation of the development of collateral circulation, hyperdynamic circulation and liver fibrogenesis.
5. New noninvasive methods for evaluating cirrhosis.
6. Randomized clinical studies of novel treatments for portal hypertension.
7. Hepatic vascular diseases.
8. Prevention of decompensation of cirrhosis.
9. Discovery of response to treatment diagnostic biomarkers.
10. Role of sinusoidal endothelium in ischemia-reperfusion hepatic injury.

RESEARCH GROUP
REGULATION OF LIVER MICROCIRCULATION IN CIRRHOSIS AND HEPATIC VASCULAR DISEASES

Group Leader:
Juan Carlos García-Pagán (Hospital Clínic)

One of the mechanisms responsible for the development of portal hypertension and its serious consequences is the increase in portal resistance observed within the cirrhotic liver. Part of this increase is dynamic and amenable to modification by means of drugs. Therefore, improved knowledge based on experimental models in animals of the cellular, biochemical and molecular mechanisms regulating this dynamic component will allow us to design new strategies for the treatment of these disorders.
Liver vascular disorders, particularly Budd-Chiari syndrome and non-cirrhotic portal thrombosis, are infrequent causes of portal hypertension. This complicates progress in our knowledge of these illnesses, their prognosis and treatments. This circumstance is of particular relevance, since these diseases mainly affect young patients with a potentially long life expectancy. For a number of years, our group has served as a reference center for these illnesses – thus allowing us to propose new treatment options and to advance in furthering our knowledge.

RESEARCH GROUP
ANGIOGENESIS IN LIVER DISEASES

Group Leader:
Mercè Fernadez Lobato (IDIBAPS)

We focus our research on the implication and regulation mechanisms of angiogenesis in the physiopathology of portal hypertension and liver cirrhosis. Our research project is also aimed to experimentally evaluate new therapeutic strategies to treat these diseases. Studies from our group in experimental models of portal hypertension and cirrhosis have shown that angiogenesis or the formation of new blood vessels is crucial to two of the most important components of the physiopathology of these diseases: the formation of portosystemic collateral vessels and the development of hyperdynamic splanchnic circulation. In addition, we found that angiogenesis is closely related to liver cirrhosis inflammation and fibrogenesis and contributes very significantly to the disease progression. These findings have turned the control of new blood vessels formation into a promising therapeutic target.
These studies may contribute valuable information with a view to improving our knowledge of the molecular and cellular mechanisms involved in the regulation of angiogenesis and implicated in the physiopathology of portal hypertension and chronic liver diseases – these being a leading cause of mortality and an important indication for liver transplantation both in this country and worldwide. Our aim is that our projects lead to the development of new therapeutic approaches designed to reduce the morbidity and mortality of patients diagnosed with these disorders.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	211.11	30	19	4
2011	161.36	22	17	3
2012	170.26	33	24	5

ORIGINALS
I.F.: 170.26

1 Tsochatzis E.A.; Bosch J.; Burroughs A.K. **New therapeutic paradigm for patients with cirrhosis.** HEPATOLOGY. 56: 1983-1992. **I.F.: 11.66.**

2 Russo L.; Gracia-Sancho J.; Garcia-Caldero H.; Marrone G.; Garcia-Pagan J.C.; Garcia-Cardena G.; Bosch J. **Addition of simvastatin to cold storage solution prevents endothelial dysfunction in explanted rat livers.** HEPATOLOGY. 55 (3): 921-930. **I.F.: 11.66.**

3 Garcia-Pagan J.C.; Gracia-Sancho J.; Bosch J. **Functional aspects on the pathophysiology of portal hypertension in cirrhosis.** JOURNAL OF HEPATOLOGY. 57: 458-461. **I.F.: 9.26.**

4 Rodriguez-Vilarrupla A.; Lavina B.; Garcia-Caldero H.; Russo L.; Rosado E.; Roglans N.; Bosch J.; Garcia-Pagan J.C. **PPAR alpha activation improves endothelial dysfunction and reduces fibrosis and portal pressure in cirrhotic rats.** JOURNAL OF HEPATOLOGY. 56 (5): 1033-1039. **I.F.: 9.26.**

5 De Gottardi A.; Berzigotti A.; Seijo S.; D'Amico M.; Thormann W.; Abraldes J.G.; Garcia-Pagan J.C.; Bosch J. **Postprandial effects of dark chocolate on portal hypertension in patients with cirrhosis: results of a phase 2, double-blind,**

randomized controlled trial. AMERICAN JOURNAL OF CLINICAL NUTRITION. 96: 584-590. **I.F.: 6.67.**

6 Gilabert R.; Bunesch L.; Real M.I.; Garcia-Criado A.; Burrel M.; Ayuso J.A.; Barrufet M.; Montana X.; Riambau V. **Evaluation of Abdominal Aortic Aneurysm after Endovascular Repair: Prospective Validation of Contrast-enhanced US with a Second-Generation US Contrast Agent.** RADIOLOGY. 264 (1): 269-277. **I.F.: 5.73.**

7 Gabriela Delgado M.; Seijo S.; Yepes I.; Achecar L.; Vega C.M.; Garcia-Criado A.; Abraldes J.G.; de la Pena J.; Banares R.; Albillos A.; Bosch J.; Garcia-Pagan J.C. **Efficacy and Safety of Anticoagulation on Patients With Cirrhosis and Portal Vein Thrombosis.** CLINICAL GASTROENTEROLOGY AND HEPATOLOGY. 10 (7): 776-783. **I.F.: 5.63.**

8 Ribeiro de Souza A.; La Mura V.; Reverter E.; Seijo S.; Berzigotti A.; Askenazhi E.; Garcia-Pagan J.C.; Abraldes J.G.; Bosch J. **Patients Whose First Episode of Bleeding Occurs While Taking a beta-Blocker Have High Long-term Risks of Rebleeding and Death.** CLINICAL GASTROENTEROLOGY AND HEPATOLOGY. 10 (6): 670-676. **I.F.: 5.63.**

9 Rosado E.; Rodriguez-Vilarrupla A.; Gracia-Sancho J.; Monclus M.; Bosch J.; Garcia-Pagan J.C. **Interaction between NO and COX pathways modulating hepatic endothelial cells from control and cirrhotic rats.** JOURNAL OF CELLULAR AND MOLECULAR MEDICINE. 16: 2461-2470. **I.F.: 4.12.**

10 Huang H.C.; Haq O.; Utsumi T.; Sethasine S.; Abraldes J.G.; Groszmann R.J.; Iwakiri Y. **Intestinal and plasma VEGF levels in cirrhosis: the role of portal pressure.** JOURNAL OF CELLULAR AND MOLECULAR MEDICINE. 16 (5): 1125-1133. **I.F.: 4.12.**

11 Pasarin M.; La Mura V.; Gracia-Sancho J.; Garcia-Caldero H.; Rodriguez-Vilarrupla A.; Garcia-Pagan J.C.; Bosch J.; Abraldes J.G. **Sinusoidal Endothelial Dysfunction Precedes Inflammation and Fibrosis in a Model of NAFLD.** PLOS ONE. 7 (4). **I.F.: 4.09.**

12 Garcia-Roca R.; Samame J.; Garcia-Criado M.A.; Real M.I.; Gilabert R.; Ricart M.J. **Preservation of Pancreas Graft Function After Complete Venous Thrombosis: Report of Four Cases Treated Conservatively.** TRANSPLANTATION. 93 (2): 214-218. **I.F.: 4.00.**

13 Chandok N.; Kamath P.S.; Blei A.; Bosch J.; Carey W.; Grace N.; Kowdley K.V.; Benner K.; Groszmann R.J. **Randomised clinical trial: the safety and efficacy of long-acting octreotide in patients with portal hypertension.** ALIMENTARY PHARMACOLOGY & THERAPEUTICS. 35 (8): 904-912. **I.F.: 3.77.**

14 D'Amico M.; Mejias M.; Garcia-Pras E.; Abraldes J.G.; Garcia-Pagan J.C.; Fernandez M.; Bosch J. **Effects of the combined administration of propranolol plus sorafenib on portal hypertension in cirrhotic rats.** AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY. 302 (10): G1191-G1198. **I.F.: 3.43.**

15 Seijo S.; Reverter E.; Miquel R.; Berzigotti A.; Abraldes J.G.; Bosch J.; Garcia-Pagan J.C. **Role of hepatic vein catheterisation and transient elastography in the diagnosis of idiopathic portal hypertension.** DIGESTIVE AND LIVER DISEASE. 44: 855-860. **I.F.: 3.05.**

16 Sebastia C.; Quiroga S.; Bunesch L.; Boye R.; Salvador R.; Nicolau C. **Usefulness of computed tomography performed immediately after excretory urography in patients with delayed opacification or dilated upper urinary tract of unknown cause.** ABDOMINAL IMAGING. 37 (3): 482-493. **I.F.: 1.72.**

17 Nicolau C.; Ripolles T. **Contrast-enhanced ultrasound in abdominal imaging.** ABDOMINAL IMAGING. 37 (1): 1-19. **I.F.: 1.72.**

18 Shneider B.L.; Bosch J.; de Franchis R.; Emre S.H.; Groszmann R.J.; Ling S.C.; Lorenz J.M.; Squires R.H.; Superina R.A.; Thompson A.E.; Mazariegos G.V. **Portal Hypertension in Children: Expert Pediatric Opinion on the Report of the Baveno V Consensus Workshop on Methodology of Diagnosis and Therapy in Portal Hypertension.** PEDIATRIC TRANSPLANTATION. 16 (5): 426-437. **I.F.: 1.47.**

19 Escorsell A.; Mas A.; Fernandez J.; Garcia-Valdecasas J.C. **Limitations of Use of the Noninvasive Clearance of Indocyanine Green as a Prognostic Indicator of Graft Function in Liver Transplantation.** TRANSPLANTATION PROCEEDINGS. 44: 1539-1541. **I.F.: 1.00.**

20 Abraldes J.G.; Araujo Isis K.; Turon F.; Berzigotti A. **Diagnosing and monitoring cirrhosis: Liver biopsy, hepatic venous pressure gradient and elastography.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 488-495. **I.F.: 0.73.**

21 Bosch J.; Abraldes J.G.; Albillos A.; Aracil C.; Banares R.; Berzigotti A.; Calleja J.L.; de la Pena J.; Escorsell A.; Garcia-Pagan J.C.; Genesca J.; Hernandez-Guerra M.; Ripoll C.; Planas R.; Villanueva C. **Portal hypertension: Recommendations for evaluation and treatment Con-**

sensus document sponsored by the Spanish Association for the Study of the Liver (AEEH) and the Biomedical Research Network Center for Liver and Digestive Diseases (CIBERehd). GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 421-450. **I.F.: 0.73.**

22 Erice E.; Llop E.; Berzigotti A.; Abraldes J.G.; Conget I.; Seijo S.; Reverter E.; Albillos A.; Bosch J.; Garcia-Pagan J.C. **Insulin resistance in patients with cirrhosis and portal hypertension.** AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY. 302 (12): G1458-G1465. **I.F.: 3.43.**

23 Kribben A.; Gerken G.; Haag S.; Herget-Rosenthal S.; Treichel U.; Betz C.; Sarrazin C.; Hoste E.; Van Vlierberghe H.; Escorsell A.; Hafer C.; Schreiner O.; Galle P.R.; Mancini E.; Caraceni P.; Karvellas C.J.; Salmhofer H.; Knotek M.; Gines P.; Kozik-Jaromin J.; Rifai K. **Effects of Fractionated Plasma Separation and Adsorption on Survival in Patients With Acute-on-Chronic Liver Failure.** GASTROENTEROLOGY. 142 (4): 782-U197. **I.F.: 11.67.**

24 Ciudin A.; Luque Galvez M.P.; Salvador Izquierdo R.; Franco de Castro A.; Garcia-Cruz E.; Alcover Garcia J.; Alvarez-Vijande Garcia J.R.; Nicolau C.; Alcaraz Asensio A. **Unenhanced CT findings can predict the development of urinary calculi in stone-free patients.** EUROPEAN RADIOLOGY. 22: 2050-2056. **I.F.: 3.22.**

25 Crespo G.; Fernandez-Varo G.; Marino Z.; Casals G.; Miquel R.; Martinez S.M.; Gilabert R.; Forns X.; Jimenez W.; Navasa M. **ARFI, FibroScan (R), ELF, and their combinations in the assessment of liver fibrosis: A prospective study.** JOURNAL OF HEPATOLOGY. 57: 281-287. **I.F.: 9.26.**

26 Ortega E.; Gilabert R.; Nunez I.; Cofan M.; Sala-Vila A.; De Groot E.; ROS E. **White blood cell count is associated with carotid and femoral atherosclerosis.** ATHEROSCLEROSIS. 221 (1): 275-281. **I.F.: 3.79.**

27 Jarauta E.; Mateo-Gallego R.; Gilabert R.; Plana N.; Junyent M.; de Groot E.; Cenarro A.; Masana L.; Ros E.; Civeira F. **Carotid atherosclerosis and lipoprotein particle subclasses in familial hypercholesterolaemia and familial combined hyperlipidaemia.** NUTRITION METABOLISM AND CARDIOVASCULAR DISEASES. 22 (7): 591-597. **I.F.: 3.73.**

28 Abraldes J.G.; Pique J.M.; Arroyo V. **Clinical practice guidelines in gastroenterology and hepatology. A resource underused by the Spanish Association for the Study of the Liver and the Spanish Association of Gastroenterology.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 681-683. **I.F.: 0.73.**

29 Llop E.; Berzigotti A.; Reig M.; Erice E.; Reverter E.; Seijo S.; Abraldes J.G.; Bruix J.; Bosch J.; Garcia-Pagan J.C. **Assessment of portal hypertension by transient elastography in patients with compensated cirrhosis and potentially resectable liver tumors.** JOURNAL OF HEPATOLOGY. 56 (1): 103-108. **I.F.: 9.26.**

30 Bohne F.; Martinez-Llordella M.; Lozano J.J.; Miguel R.; Benitez C.; Londono M.C.; Manzia T.M.; Angelico R.; Swinkels D.W.; Tjalsma H.; Lopez M.; Abraldes J.G.; Bonaccorsi-Riani E.; Jaeckel E.; Taubert R.; Pirenne J.; Rimola A.; Tisone G.; Sanchez-Fueyo A. **Intra-graft expression of genes involved in iron homeostasis predicts the development of operational tolerance in human liver transplantation.** JOURNAL OF CLINICAL INVESTIGATION. 122 (1): 368-382. **I.F.: 13.07.**

31 Raffa S.; Reverter J.C.; Seijo S.; Tassies D.; Abraldes J.G.; Bosch J.; Garcia-Pagan J.C. **Hypercoagulability in Patients With Chronic Noncirrhotic Portal Vein Thrombosis.** CLINICAL GASTROENTEROLOGY AND HEPATOLOGY. 10 (1): 72-78. **I.F.: 5.63.**

32 De Gottardi A.; Seijo S.; Mila M.; Alvarez M.I.; Bruguera M.; Abraldes J.G.; Bosch J.; Garcia-Pagan J.C. **Bone morphogenetic protein receptor 2 in patients with idiopathic portal hypertension.** JOURNAL OF CELLULAR AND MOLECULAR MEDICINE. 16: 2017-2021. **I.F.: 4.12.**

33 Lebrec D.; Bosch J.; Jalan R.; Dudley F.J.; Jessic R.; Moreau R.; Garcia-Pagan J.C.; Mookerjee R.P.; Chiossi E.; Van Giersbergen P.L.; Kusic-Pajic A.; Dingemanse J. **Hemodynamics and pharmacokinetics of tezosentan, a dual endothelin receptor antagonist, in patients with cirrhosis.** EUR J CLIN PHARMACOL. 68(5):533-41. **I.F.: 2.84.**

REVIEWS
I.F.: 12.42

1 Castera L.; Pinzani M.; Bosch J. **Non invasive evaluation of portal hypertension using transient elastography.** JOURNAL OF HEPATOLOGY. 56 (3): 696-703. **I.F.: 9.26.**

2 Seijo S.; Garcia-Criado A.; Darnell A.; Garcia-Pagan J.C. **Diagnosis and treatment of portal thrombosis in liver cirrhosis.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35(9):660-6. **I.F.: 0.73.**

3 García-Pagán J.C.; Reverter E.; Abraldes J.G.; Bosch J. **Acute variceal bleeding.** SEMIN RESP CRIT CARE. 33(1):46-54. **I.F.: 2.43.**

EDITORIALS
I.F.: 11.67

1 Garcia-Pagan J.C.; Shah Vijay H. **Microparticles and Paracrine Signaling in Portal Hypertension: Crucial Conversations or Idle Chat?** GASTROENTEROLOGY. 143 (1): 22-25. **I.F.: 11.67.**

GRANTS FOR RESEARCH IN PROGRESS

Bosch J. **Hemodinamica hepática i hipertensió portal.** Sponsored by: AGAUR 2009_SGR_1108. Duration: 15/9/2009-31/12/2013.

Bosch J. **Estudio multicéntrico, aleatorizado, doble-ciego, controlado con placebo, sobre la eficacia del tratamiento con beta-bloqueantes para la prevención de la descompensación de la cirrosis con hipertensión portal.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC08/00091. Duration: 1/1/2009-30/6/2013.

Escorsell M.A. **Hemorragia por varices esofágicas: optimización del tratamiento en situaciones complejas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI080504. Duration: 1/1/2009-31/12/2012.

Bosch J. **Hepatic hemodynamics and portal hypertension in cirrhosis. Advances in the pathophysiology, non-invasive evaluation and therapy. (Clinical & experimental studies).** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1261. Duration: 1/1/2010-31/12/2013.

Gracia J. **Protección endotelial durante la preservación de órganos para trasplante: Mecanismos implicados y nuevas dianas terapéuticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00235. Duration: 1/2/2012-31/12/2014.

Gonzalez Abraldes J. **Disfunción hepática asociada a la hemorragia por varices en la cirrosis: mecanismos y nuevas perspectivas terapéuticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00883. Duration: 1/1/2012-31/12/2014.

Bosch J. **Mecanismos celulares y moleculares en la hipertensión portal no-cirrótica.** Sponsored by: Ministerio de Economía y Competitividad ACI2009-0938. Duration: 1/12/2009-31/3/2013.

Bosch J. **A randomized, controlled multicenter clinical trial comparing endoscopic band ligation versus oral carvedilol in the primary prophylaxis of esophageal variceal bleeding in patients with cirrhosis.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-234. Duration: 12/9/2012-31/12/2013.

Fernández Lobato M. **Mecanismos reguladores moleculares y celulares de la angiogénesis en la hipertensión portal y la cirrosis hepática: base racional para nuevas estrategias terapéuticas.** Sponsored by: Ministerio de Economía e Innovación. SAF2011-29491. Duration: 01/01/2012-31/12/2014.

Gilabert R. **Grosor de intima media (GIMC) y presencia de placa carotídea (PC) como discriminador de riesgo cardiovascular al diagnóstico de la diabetes tipo 2 y tras tratamiento de la enfermedad.** Sponsored by: FIS 2011. PI 11/01723. Duration: 3 years (2012-2014).

Abraldes J.G. **SIMPRO. Prevención de la progresión de la hipertensión portal en la cirrosis compensada mediante el uso de vasodilatadores hepáticos selectivos. Estudio multicéntrico, aleatorizado y doble-ciego.** Número EudraCT 2010-021593-11. Promotor: Fundació Privada del Hospital de Sant Pau.

García-Pagán J.C. **Concesión ayuda del Ministerio de Ciencia e Innovación. Proyecto: "Mecanismos moleculares de la disfunción endotelial intrahepática en la cirrosis. Nuevas dianas terapéuticas de la hipertensión portal".** Ref: SAF2010-17043. Duration: 2010-2013.

Nicolau C. **Evaluación funcional de riñón trasplantado mediante ecografía con contraste.** Sponsored by: Instituto de Salud Carlos III (ISCIII). Duration: 01/01/2009-21/12/2012.

Bosch J. **Proyecto: "Desarrollo de biomarcadores del grado de fibrosis hepática y del pronóstico de pacientes con enfermedades hepáticas avanzadas mediante el uso de herramientas metabolómicas" (LIVERBIOMARK).** Convocatoria INNPACTO 2010 del CDTI (Ministerio de Ciencia e Innovación). Duración 2010-2012. Organismos participantes: CIBERehd, CICBiogune, OWL Genomics y Fundación MD Renal. Jaume Bosch es Investigador Principal por el CIBERehd. Extension till 30.06.2013.

DOCTORAL THESES

Bosch J. **Nuevos métodos en el diagnóstico y evaluación no invasiva de la cirrosis hepática y la hipertensión portal.** PhD student: Annalisa Berzigotti.

González-Abraldes J.; Bosch J. **Resistència a la insulina i disfunció endotelial sinusoïdal a la malaltia hepàtica per dipòsit de greix.** PhD student: Marcos Pasarín Castellanos.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Inflammatory bowel disease (IBD)

GROUP MEMBERS

TEAM LEADER
Julián Panés (Hospital Clínic)
Tel.: 93 227 54 18
E-mail: jpanes@clinic.cat

RESEARCHERS:
Faust Feu (Hospital Clínic)
Glòria Lacima (Hospital Clínic)
Josep Llach (Hospital Clínic)
Josep M. Piqué (Hospital Clínic)
Azucena Salas (IDIBAPS)
Elena Ricart (Hospital Clínic)
Salvadora Delgado (Hospital Clínic)
Miquel Sans (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Elisabeth Calderón (IDIBAPS)
Isabella Dotti (IDIBAPS)
Raquel Franco Leal (visiting fellow IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Maria del Carme Masamunt (Fundació Clínic)
Raquel Cabezón (Fundació Clínic)
Rut Mora (IDIBAPS)
Núria Planell (CIBERhed)

TECHNICIANS:
Carolina España (CIBERhed)
Miriam Esteller (CIBERehd)

NURSING STAFF:
Susana Pinó (Fundació Clínic)
Marta Gallego (Hospital Clínic)
Anna Ramírez (CIBERehd)

COLLABORATORS:
Ingrid Ordás (Hospital Clínic)
Daniel Benítez (CIBERehd)
Arantza Jauregui-Amezaga (Hospital Clínic)

TEAM INVOLVED IN: ciberehd

STRATEGIC OBJECTIVES

This IDIBAPS research team has a translational orientation, aimed at generating knowledge in the area of inflammatory bowel diseases to provide a direct benefit to patients suffering from Crohn's disease or ulcerative colitis in the near future. The team's research plan includes three main strategic objectives:

- The development of new treatments for Crohn's disease and ulcerative colitis, focused on cell therapy and the identification of new therapeutic targets susceptible to pharmacological modulation.
- Further in-depth knowledge of the genetic and environmental factors responsible for susceptibility and the course of the disease, with a view to designing personalized therapies.
- Study of acquired immune responses against commensal bacteria in patients suffering from Crohn's disease.
- Optimization of the radiological and biochemical diagnostic techniques with the aim of adapting treatment to the needs of each individual patient.

PUBLICATIONS

MAIN LINES OF RESEARCH

1. Hematopoietic stem cell autotransplantation in refractory Crohn's disease. Characterization of host and intestinal microbiota related factors in the therapeutic response.
2. Evaluation of the efficacy and safety of treatment with autologous tolerogenic dendritic cells derived from peripheral blood monocytes in refractory Crohn's disease.
3. Development and optimization of intestinal epithelium stem cells production. Evaluation of the therapeutic potential of intestinal stem cell transplantation in severe Crohn's disease and ulcerative colitis.
4. Optimization of magnetic resonance imaging and ultrasound techniques with contrast injection, for evaluation of the extent, severity and prognosis of the inflammatory lesions in Crohn's disease and ulcerative colitis.
5. Characterization of the genetic factors determining susceptibility and phenotype in Crohn's disease and ulcerative colitis. Construction of diagnostic genetic-based tests.
6. advanced endoscopic techniques for diagnosis and treatment of IBD.

ORIGINALS
I.F.: 197.00

1 Abraldes J.G.; Pique J. M.; Arroyo V. **Clinical practice guidelines in gastroenterology and hepatology. A resource underused by the Spanish Association for the Study of the Liver and the Spanish Association of Gastroenterology.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 681-683. **I.F.: 0.73.**

2 Sandborn W.J.; Ghosh S.; Panes J.; Vranic I.; Su C.; Rousell, S.; Niezychowski W. **Tofacitinib, an Oral Janus Kinase Inhibitor, in Active Ulcerative Colitis.** NEW ENGLAND JOURNAL OF MEDICINE. 367 (7): 616-624. **I.F.: 53.30.**

3 Laharie D.; Bourreille A.; Branche J.; Allez M.; Bouhnik Y.; Filippi J.; Zerbib F.; Savoye G.; Nachury M.; Moreau J.; Delchier J.C.; Cosnes J.; Ricart E.; Dewit O.; Lopez-Sanroman A.; Dupas J.L.; Carbonnel F.; Bommelaer G.; Coffin B.; Roblin X.; Van Assche G.; Esteve M.; Farkkila M.; Gisbert J.; Marteau P.; Nahon S.; De Vos M.; Franchimont D.; Mary J.I.; Colombel, J.F.; Lemann M. **Ciclosporin versus infliximab in patients with severe ulcerative colitis refractory to intravenous steroids: a parallel, open-label randomised controlled trial.** LANCET. 380(9857):1909-15. **I.F.: 38.28.**

4 Rath E.; Berger E.; Messlik A.; Nunes T.; Liu B.; Kim S.C.; Hoogenraad N.; Sans M.; Sartor, R.B.; Haller D. **Induction of dsRNA-activated protein kinase links mitochondrial unfolded protein response to the pathogenesis of intestinal inflammation.** GUT. 61: 1269-1278. **I.F.: 10.11.**

5 Gisbert, J.P.; Calvet X.; Cosme A.; Almela P.; Feu F.; Bory F.; Santolaria S.; Aznarez R.; Castro M.; Fernandez N.; Garcia-Gravalos R.; Benages A.; Canete N.; Montoro M.; Borda F.; Perez-Aisa A.; Pique J.M. **Long-Term Follow-Up of 1,000 Patients Cured of Helicobacter pylori Infection Following an Episode of Peptic Ulcer Bleeding.** AMERICAN JOURNAL OF GASTROENTEROLOGY. 107: 1197-1204. **I.F.: 7.28.**

6 Navarro-Ripoll R.; Martinez-Palli G.; Guarner-Argente C.; Cordova H.; Martinez-Zamora M.A.; Comas J.; Rodriguez de Miguel C.; Beltran M.; Rodriguez-D'Jesus A.; Hernandez-Cera C.; Ilach J.; Balust J.; Fernandez-Esparrach G. **On-demand endoscopic CO2 insufflation with feedback pressure regulation during natural orifice transluminal endoscopic surgery (NOTES) peritoneoscopy induces minimal hemodynamic and respiratory changes.** GASTROINTESTINAL ENDOSCOPY. 76 (2): 388-395. **I.F.: 4.92.**

7 Chaparro M.; Panes J.; Garcia V.; Merino O.; Nos P.; Domenech E.; Penalva M.; Garcia-Planella E.; Esteve M.; Hinojosa J.; Andreu M.; Munoz F.; Gutierrez A.; Mendoza J.L.; Barrio J.; Barreiro-de Acosta M.; Vera I.; Vilar P.; Cabriada J.L.; Montoro M.A.; Aldeguer X.; Saro C.; Gisbert J.P. **Long-term durability of response to adalimumab in Crohn's disease.** INFLAMMATORY BOWEL DISEASES. 18 (4): 685-690. **I.F.: 4.85.**

8 Cabezon R.; Ricart E.; Espana C.; Panes J.; Benitez-Ribas D. **Gram-Negative Enterobacteria Induce Tolerogenic Maturation in Dexamethasone Conditioned Dendritic Cells.** PLOS ONE. 7. **I.F.: 4.09.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	115.79	19	8	4
2011	110.31	19	8	6
2012	197.00	24	12	8

9 Chaparro M.; Burgueno P.; Iglesias E.; Panes J.; Munoz F.; Bastida G.; Castro L.; Jimenez C.; Mendoza J.L.; Acosta M.B.D.; Senent S.G.; Gomollon F.; Calvet X.; Garcia-Planella E.; Gomez M.; Hernandez V.; Hinojosa J.; Manosa M.; Nyssen O.P.; Gisbert J.P. **Infliximab salvage therapy after failure of ciclosporin in corticosteroid-refractory ulcerative colitis: a multicentre study.** ALIMENTARY PHARMACOLOGY & THERAPEUTICS. 35 (2): 275-283. **I.F.: 3.77.**

10 Ordas I.; Rimola J.; Rodriguez S.; Gallego M.; Ricart E.; Panes J. **Imaging of the Colon in Inflammatory Bowel Disease: Ready for Prime Time?** CURRENT DRUG TARGETS. 13: 1252-1260. **I.F.: 3.55.**

11 Rieder F.; Karrasch T.; Ben-Horin S.; Schirbel A.; Ehehalt R.; Wehkamp J.; De Haar C.; Velin D.; Latella G.; Scaldaferri F.; Rogler G; Higgins P.; Sans M. **Results of the 2nd Scientific Workshop of the ECCO (III): Basic mechanisms of intestinal healing.** JOURNAL OF CROHNS & COLITIS. 6 (3): 373-385. **I.F.: 2.57.**

12 Ferrante M.; Karmiris K.; Newnham E.; Siffledeen J.; Zelinkova Z.; Van Assche G.; Lakatos P.L.; Panes J.; Sturm A.; Travis S.; Van der Woude C.J.; Reinisch W.; Colombel J.F.; Panaccione R. **Physician perspectives on unresolved issues in the use of conventional therapy in Crohn's disease: Results from an international survey and discussion programme.** JOURNAL OF CROHNS & COLITIS. 6 (1): 116-131. **I.F.: 2.57.**

13 Chaparro M.; Andreu M.; Barreiro-de Acosta M.; Garcia-Planella E.; Ricart E.; Domenech E.; Esteve M.; Merino O.; Nos P.; Penalva M.; Gisbert J.P. **Effectiveness of infliximab after adalimumab failure in Crohn's disease.** WORLD JOURNAL OF GASTROENTEROLOGY. 18(37):5219-24. **I.F.: 2.47.**

14 Schreiber S.; Panes, J.; Louis E.; Holley D.; Buch M.; Paridaens K. **Perception gaps between patients with ulcerative colitis and healthcare professionals: an online survey.** BMC GASTROENTEROLOGY. 12. **I.F.: 2.42.**

15 Ricart E. **Current Status of Mesenchymal Stem Cell Therapy and Bone Marrow Transplantation in IBD.** DIGESTIVE DISEASES. 30 (4): 387-391. **I.F.: 2.37.**

16 Rimola J.; Ordas I.; Rodriguez S.; Ricart E.; Panes, J. **Imaging indexes of activity and severity for Crohn's disease: current status and future trends.** ABDOMINAL IMAGING. 37: 958-966. **I.F.: 1.72.**

17 Rodriguez-D'Jesus A.; Cordova H.; Ignasi Elizalde J.; Cuatrecasas M.; Saperas E.; Ilach J.; Fernandez-Esparrach G. **Usefulness of endoscopic biopsy in Barrett's esophagus.** MEDICINA CLINICA. 139 (3): 103-106. **I.F.: 1.38.**

18 Perez Aisa A.; Nuevo J.; Lopez Morante A.A.; Gonzalez Galilea A.; Martin de Argila C.; Avinoa Arreal D.; Feu F.; Borda Celaya F.; Gisbert J.P.; Perez Roldan F.; Gonzalvo Sorribes J.M.; Palazon Azorin J.M.; Ponce Romero M.; Castro Fernandez M.; Catalina Rodriguez M.V.; Gallego Montanes S.; Calvet X.; Rodrigo Saez L.; Montoro Huguet M.; Gonzalez Mendez Y.; Sierra Hernandez A.; Sanchez Hernandez E.; Dominguez Munoz E.; Perez Cuadrado E.; Munoz M.; Lanas A. **Current management of nonvariceal upper gastrointestinal bleeding in Spain.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 468-475. **I.F.: 0.73.**

19 Delgado S.; Ibarzabal A.; Adelsdorfer C.; Adelsdorfer W.; Corcelles R.; Momblan D.; Lacy A.M. **Transumbilical single-port sleeve gastrectomy: initial experience and comparative study.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (5): 1247-1253. **I.F.: 4.01.**

20 Balderramo D.; Sendino O.; Burrel M.; Real M.I.; Blasi A.; Martinez-Palli G.; Bordas J.M.; Garcia-Valdecasas J.C.; Rimola A.; Navasa M.; Llach J.; Cardenas A. **Risk factors and outcomes of failed endoscopic retrograde cholangiopancreatography in liver transplant recipients with anastomotic biliary strictures: A case-control study.** LIVER TRANSPLANTATION. 18 (4): 482-489. **I.F.: 3.39.**

21 De Miguel C.R.; Serradesanferm A.; Del Manzano S.; Cardenas A.; Fernandez-Esparrach G.; Gines A.; Ricart E.; Sendino O.; Gonzalez-Suarez B.; Lopez-Ceron M.; Llach J.; Grau J.; Castells A.; Pellise M. **Timing of polyethylene glycol administration is a key factor in the tolerability and efficacy of colon preparation in colorectal cancer screening.** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35 (4): 236-242. **I.F.: 0.73.**

22 Rimola J.; Rodriguez S.; Luisa Cabanas M.; Ayuso C.; Panes J.; Cuatrecasas M. **MRI of Crohn's disease: from imaging to pathology.** ABDOMINAL IMAGING. 37 (3): 387-396. **I.F.: 1.72.**

23 Martinez C.; Rosales M.; Calvo X.; Cuatrecasas M.; Rodriguez-Carunchio L.; Llach J.; Fernandez-Aviles F.; Rosinol L.; Rovira M.; Carreras E.; Urbano-Ispizua A. **Serial intestinal endoscopic examinations of patients with persistent diarrhea after allo-SCT.** BONE MARROW TRANSPLANTATION. 47 (5): 694-699. **I.F.: 3.75.**

24 Jostins L.; Ripke S.; Weersma R.K.; Duerr R.H.; McGovern D.P.; Hui K.Y.; Lee J.C.; Schumm L.P.; Sharma Y.; Anderson C.A.; Essers J.; Mitrovic M.; Ning K.; Cleynen I.; Theatre E.; Spain S.L.; Raychaudhuri S.; Goyette P.; Wei Z.; (Sans M.); et. al. **Host-microbe interactions have shaped the genetic architecture of inflammatory bowel disease.** NATURE. 491: 119-124. **I.F.: 36.28.**

EDITORIALS
I.F.: 10.11

1 Ricart E.; Ordas I.; Panes J. **Anti-TNF antibody therapy in Crohn's disease: the risk of a switch.** GUT. 61 (2): 169-170. **I.F.: 10.11.**

GRANTS FOR RESEARCH IN PROGRESS

Panes J. **Malaltia Inflamatòria Intestinal.** Sponsored by: AGAUR 2009_SGR_1206. Duration: 15/9/2009-31/12/2013.

Salas A. **Delivering nanopharmaceuticals through Blological BArriers. ERA-NET_NANO-MED10_02.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/02998 (NANO-MED). Duration: 01/01/2011-31/12/2013.

Lacima G. **Eficacia de la neuromodulación sacra en el tratamiento del estreñimiento crónico de tránsito lento: estudio cruzado, randomizado y doble ciego.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00405. Duration: 1/1/2012-31/12/2014.

Panes J. **Characterization of regulatory B cells in human inflammatory bowel disease.** Sponsored by: International Organization for the Study of Inflammatory Bowel Diseases IOIBD_GRANTS2011_01. Duration: 1/1/2012-31/12/2014.

Panes J. **Terapia con células dendríticas tolerogénicas en la enfermedad de Crohn refractaria.** Sponsored by: Ministerio de Economía y Competitividad SAF2009_07272. Duration: 1/1/2010-31/12/2012.

Panes J. **Desarrollo de un kit diagnóstico para las enfermedades inflamatorias mediadas por mecanismos inmunes (IMID-Kit). Subproyecto 1: Estudio de asociación de genoma completo en las enfermedades inflamatorias mediadas por mecanismos inmunes (IMID ImmuneMediated Inflammatory Diseases) ("WGAS-IMID"). Sobproyecto 4: Estudio de asociación de genoma completo en nuevas IMID.** Sponsored by: Ministerio de Economía y Competitividad PSE-010000-2008-9. Duration: 1/1/2009-31/5/2012.

Sans M. **Fibrogénesis y enfermedad de Crohn. Estudio de los mecanismos moleculares implicados y desarrollo de nuevas estrategias de tratamiento y prevención de la fibrosis intestinal.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-29435. Duration: 1/1/2012-1/12/2012.

DOCTORAL THESES

Panes J. **Resonancia magnética en la valoración de la enfermedad de crohn.** PhD student: Jordi Rimola Gibert.

Llach J. **Nuevos aspectos del manejo endoscópico de las complicaciones biliares asociadas al trasplante hepático.** PhD student: Domingo César Balderramo Barboza.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Cholestasis and bone pathology

TEAM INVOLVED IN: ciberehd

GROUP MEMBERS

TEAM LEADER
Albert Parés (Hospital Clínic)
Tel.: 93 227 57 53
E-mail: apares@clinic.cat

TEAM LEADER
Núria Guañabens (Hospital Clínic)
Tel.: 93 227 54 00 (Ext.: 2235)
E-mail:nguana@clinic.cat

GROUP LEADERS:
Albert Parés (Hospital Clínic)
Núria Guañabens (Hospital Clínic)

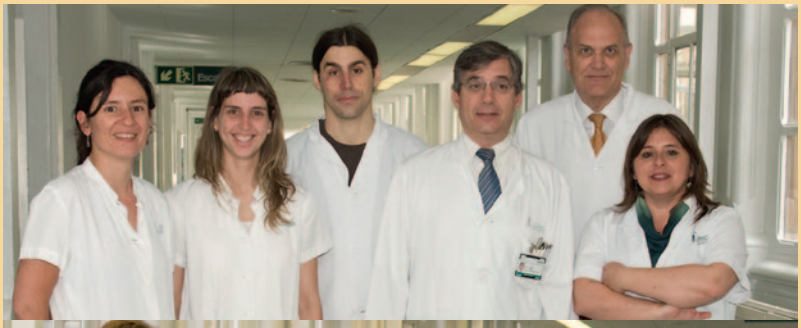
RESEARCHERS:
Antoni Mas (Hospital Clínic)
M. Lluisa Álvarez (Hospital Clínic)
Pilar Peris (Hospital Clínic)
Ana Monegal Brancós (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Laia Gifre (Hospital Clínic)

TECHNICIANS:
Marta Dubreuil (CIBERehd)

NURSING STAFF:
Pilar Sesé (Fundació Clínic)

COLLABORATORS:
Mª Jesús Martinez de Osaba (Hospital Clinic)
Silvia Ruiz-Gaspá (CIBERehd)



STRATEGIC OBJECTIVES

1. Study of the epidemiology, pathogenesis, diagnosis and treatment of adult chronic cholestatic disorders and autoimmune hepatitis.
2. Knowledge of the pathogenic mechanisms underlying pruritus and osteoporosis in primary biliary cirrhosis.
3. Investigation of the pathogenic and therapeutic aspects of metabolic bone diseases.
4. Definition of the therapeutic potential of different artificial liver support procedures in liver failure.

MAIN LINES OF RESEARCH

The research lines of this team are divided into two associated groups.

Cholestasis and bone pathology

RESEARCH GROUP
CHOLESTASIS

Group Leader:
Albert Pares (Hospital Clínic)

1. Epidemiology, natural history and therapeutic response of chronic cholestatic disorders in adults.
2. Evaluation of the factors conditioning treatment response, and proposition of new treatment regimens in patients showing suboptimum response to ursodeoxycholic acid.
3. Relevance of the anionic exchanger AE2.
4. Pruritus in chronic cholestasis and treatment response to albumin dialysis: proteomic analysis. Evaluation of treatment response based on albumin dialysis in patients with chronic cholestasis and refractory pruritus, identification of the eliminated peptides and proteins using MARS, and metabolomics.
5. Pathogenesis of osteoporosis and fracture development in primary biliary cirrhosis and other chronic cholestatic disorders. In collaboration with the Bone Metabolic Diseases group, evaluation of the factors underlying fractures in primary biliary cirrhosis, and the proposal of new therapeutic modalities for increasing bone mass. Likewise, investigation is conducted into the repercussion of retained bile acids and bilirubin in cholestasis upon the development of bone disease.
6. Artificial liver support. Evaluation of the safety and efficacy of different bioartificial liver and hepatic support systems in treating acute liver failure and exacerbated chronic liver failure. An open-label, prospective randomized study versus conventional treatment involving cryopreserved human hepatocytes from organs not apt for transplantation.

RESEARCH GROUP
BONE METABOLIC DISEASE

Group Leader:
Núria Guañabens (Hospital Clínic)

1. Osteoporosis in premenopausal women and in males. Study of the clinical characteristics and mechanisms involved in the development of the disorder.
2. Osteoporosis in primary biliary cirrhosis. Clinical and "in vitro" analysis. Evaluation of the key factors in the low development of bone mass and the appearance of fractures, and proposal of new therapeutic protocols. In addition, evaluation of the effect of bilirubin and bile acids upon primary osteoblasts in culture.
3. Osteoporosis in liver transplantation. Evaluation of the hormonal changes regulating bone remodeling in this pathology.
4. Analysis of the efficacy of vertebroplasty. Evaluation of the clinical usefulness and the complications of this procedure in the treatment of pain secondary to recent vertebral fracture due to osteoporosis.
5. Evaluation of bone remodeling regulators. Evaluation of the role of sclerostin and, through this protein, investigation of the influence of osteocytes upon bone loss associated with glucocorticoid treatment and immobilization.

PUBLICATIONS

ORIGINALS
I.F.: 42.91

1 Pares A. **Good long-term survival of patients with primary biliary cirrhosis and biochemical features of autoimmune hepatitis overlap syndrome. Influence of ursodeoxycholic acid therapy** HEPATOLOGY. 56: 1138A-1139A. **I.F.: 11.66.**

2 Pares A.; Perez-Cormenzana M.; Mayo R.; Bennasar A.; Mas A.; Castro A. **Lipidic and bile acid metabolomic profile in patients with primary biliary cirrhosis and pruritus** HEPATOLOGY. 56: 1129A-1129A. **I.F.: 11.66.**

3 Blasco J.; Martinez-Ferrer A.; Macho J; San Roman L.; Pomes J. Carrasco J.; Monegal A.; Guanabens N.; Peris P. **Effect of vertebroplasty on pain relief, quality of life, and the incidence of new vertebral fractures: A 12-month randomized follow-up, controlled trial** BONE. 27 (5): 1159-1166. **I.F.: 4.02.**

4 Smyk D.; Rigopoulou E.I.; Zen Y.; Abeles R.D.; Billinis C.; Pares A.; Bogdanos D.P. **Role for mycobacterial infection in pathogenesis of primary biliary cirrhosis?** WORLD JOURNAL OF GASTROENTEROLOGY. 18: 4855-4865. **I.F.: 2.47.**

5 Guanabens N.; Rotes D.; Holgado S.; Gobbo M.; Descalzo M.A.; Gorordo J.M.; Martinez-Ferrer M.A.; Salmoral A.; Morales-Piga A. **Implications of a New Radiological Approach for the Assessment of Paget Disease** CALCIFIED TISSUE INTERNATIONAL. 91: 409-415. **I.F.: 2.38.**

6 Cerda D.; Peris P.; Monegal A.; Albaladejo C.; Suris X.; Guanabens N. **Identification of clinical features and laboratory abnormalities associated with the development of vertebral fractures in women with postmenopausal osteoporosis** MEDICINA CLINICA. 139: 626-630. **I.F.: 1.38.**

7 Guanabens N.; Pares A. **Osteoporosis in liver cirrhosis** GASTROENTEROLOGÍA Y HEPATOLOGÍA. 35: 411-420. **I.F.: 0.73.**

8 Peris P.; Martinez-Ferrer A.; Monegal A.; Martinez de Osaba M.J.; Muxi A.; Guanabens N. **25 hydroxyvitamin D serum levels influence adequate response to bisphosphonate treatment in postmenopausal osteoporosis** BONE. 51 (1): 54-58 JUL 2012. **I.F.: 4.02.**

9 Guanabens N.; Monegal A.; Muxi A.; Martinez-Ferrer A.; Reyes R.; Caballeria J.; del Rio L.; Peris P.; Pons F.; Pares A. **Patients with cirrhosis and ascites have false values of bone density Implications for the diagnosis of osteoporosis** OSTEOPOROSIS INTERNATIONAL. 23 (4): 1481-1487 **I.F.: 4.58.**

REVIEWS
I.F.: 2.48

1 Smyk D.S.; Rigopoulou E.I.; Pares A.; Billinis C.; Burroughs A.K.; Muratori L.; Invernizzi P.; Bogdanos D.P. **Sex Differences Associated with Primary Biliary Cirrhosis** CLINICAL & DEVELOPMENTAL IMMUNOLOGY. 2012:610504. **I.F.: 1.84.**

2 Smyk D.S.; Rigopoulou E.I.; Pares A.; Mytilinaiou M.G.; Invernizzi P.; Bogdanos D.P. **Familial primary biliary cirrhosis: Like mother, like daughter?** ACTA GASTRO-ENTEROLOGICA BELGICA. 75 (2): 203-209. **I.F.: 0.64.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	59.69	13	7	1
2011	36.73	8	5	1
2012	42.91	9	3	4

GRANTS FOR RESEARCH IN PROGRESS

Guañabens M.N. **Ácido ursodeoxicólico y osteoporosis en la colestasis crónica. Estudio "in vitro" en células óseas y repercusión clínica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00281. Duration: 1/1/2012-31/12/2014.

Peris P. **Prospective study of bone loss after spinal cord injury, risk factors and role of osteocyte markers.** Sponsored by: Marató TV3 110710. Duration: 31/1/2012-30/1/2015.

Peris P. **Incidencia de fracturas vertebrales en una cohorte poblacional de 2968 mujeres posmenopáusicas. Estudio de los factores de riesgo asociados.** Sponsored by Instituto de Salud Carlos III (ISCIII): PI10/0034. Duration: 1/1/2010-31/12/2013.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

TEAM INVOLVED IN: ciberehd

Mitochondrial regulation of cell death and steatohepatitis

GROUP MEMBERS

TEAM LEADER
José Carlos Fernández-Checa
(IIBB-CSIC)
Tel.: 93 227 57 09
E-mail: checa229@yahoo.com

RESEARCHERS:
Joan Caballeria (Hospital Clínic)
Anna Colell (IIBB-CSIC)
Carmen García Ruíz (IIBB-CSIC)
Montserrat Marí (IIBB-CSIC)
Albert Morales (IIBB-CSIC)

POST-DOCTORAL RESEARCHERS:
Laura Conde de la Rosa (IIBB-CSIC)
Claudia Von Montfort (IIBB-CSIC)
Vicente Ribas Serra (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Anna Fernández (CIBERehd)
Raquel Fucho (CIBERehd)
Nuria Matias (MCyT)
Nuria Tarrats (IIBB-CSIC)
Elisabeth Barbero (MCyT)
Cristina Bárcena (IDIBAPS)
Laura Martínez (MCyT)
Milica Stefanovic (CSIC)
Anna Baulies (MCyT)
Álvaro de Mingo Pulido (ISCiii-FIS)
Guillermo Antonio Martínez Nieto (IIBB-CSIC)

TECHNICIANS:
Susana Núñez Pozuelo (CIBERehd)

STRATEGIC OBJECTIVES

1. Determination of intracellular signalling and the role of mitochondria in cell susceptibility in inflammation, hypoxia and chemotherapy, and their relevance in relation to (hepato) carcinogenesis.
2. Determination of the mechanisms behind cholesterol and sphingolipid participation in hepatocellular death in different disorders such as non-alcoholic steatohepatitis (NASH) or ischaemia/reperfusion damage.
3. Analysis of the role of free cholesterol in patients with non-alcoholic steatohepatitis.
4. Contribution of the physicochemical properties of the mitochondrial membrane in cell death.

MAIN LINES OF RESEARCH

1. Ischemia-reperfusion hepatocellular damage mechanisms and their regulation based on antioxidant and antiinflammatory strategies. (Dr Fernández-Checa).
2. Sphingolipid and mitochondrial oxidative-stress regulation of cell death (Dr Fernández-Checa).
3. Mechanisms responsible for cholesterol transport to the mitochondria (Dr Fernández-Checa).
4. Role of cholesterol in hepatocellular carcinoma response to chemotherapy (Dr Fernández-Checa).
5. Functional relationship between methionine metabolites, acid sphingomyelinase and phosphatidylcholine in steatohepatitis (Dr. Fernandez-Checa).
6. Development of non-invasive diagnostic methods for diagnosis and prognosis in alcohol-induced liver disease (Dr J. Caballería).
7. Regulation of cholesterol homeostasis in patients and experimental models of non-alcoholic steatohepatitis and ischemia-reperfusion injury (Dr C. García-Ruiz).
8. Contribution of sphingolipids and autophagy to lipid metabolism and non-alcoholic steatohepatitis (Dr C. García-Ruiz).
9. Parenchyma-stroma interaction in cancer and ischemia/reperfusion-induced liver damage: lipid therapies (Dr A. Morales).
10. Role of cholesterol and the mitochondria in Alzheimer's Disease (Dr A. Colell).
11. Contribution of cathepsins to fibrosis and inflammation of the liver (Dr M. Marí).

Two lines in which we have obtained important results are:

1. **Mitochondrial GSH determines the toxic or therapeutic potential of superoxide scavenging in steatohepatitis.**
Steatohepatitis (SH) is associated with mitochondrial dysfunction and excessive production of superoxide, which can then be converted into H(2)O(2) by SOD2. Since mitochondrial GSH (mGSH) plays a critical role in H(2)O(2) reduction, we explored the interplay between superoxide, H(2)O(2), and mGSH in nutritional and genetic models of SH, which exhibit mGSH depletion.
To this aim, we used isolated mitochondria and primary hepatocytes, as well as in vivo steatohepatitis models showing mGSH depletion to test the consequences of superoxide scavenging. In isolated mitochondria and primary hepatocytes, superoxide scavenging by SOD mimetics or purified SOD decreased superoxide and peroxynitrite generation but increased H(2)O(2) following mGSH depletion, despite mitochondrial peroxiredoxin/thioredoxin defense. Selective mGSH depletion sensitized hepatocytes to cell death induced by SOD mimetics, and this was prevented by RIP1 kinase inhibition with necrostatin-1 or GSH repletion with GSH ethyl ester (GSHee). Mice fed the methionine-choline deficient (MCD) diet or MAT1A(-/-) mice exhibited reduced SOD2 activity; in vivo treatment with SOD mimetics increased liver damage, inflammation, and fibrosis, despite a decreased superoxide and 3-nitrotyrosine immunoreactivity, effects that were ameliorated by mGSH replenishment with GSHee, but not NAC. As a proof-of-principle of the detrimental role of superoxide scavenging when mGSH was depleted transgenic mice overexpressing SOD2 exhibited enhanced susceptibility to MCD-mediated SH.

2. **Cathepsin B overexpression due to acid sphingomyelinase ablation promotes liver fibrosis in Niemann-Pick disease.**
Niemann-Pick disease (NPD) is a lysosomal storage disease caused by the loss of acid sphingomyelinase (ASMase) that features neurodegeneration and liver disease. Because ASMase-knock-out mice models NPD and our previous findings revealed that ASMase activates cathepsins B/D (CtsB/D), our aim was to investigate the expression and processing of CtsB/D in hepatic stellate cells (HSCs) from ASMase-null mice and their role in liver fibrosis. Surprisingly, HSCs from ASMase-knock-out mice exhibit increased basal level and activity of CtsB as well as its in vitro processing in culture, paralleling the enhanced expression of fibrogenic markers α-smooth muscle actin (α-SMA), TGF-β, and pro-collagen-α1(I) (Col1A1). Moreover, pharmacological inhibition of CtsB blunted the expression of α-SMA and Col1A1 and proliferation of HSCs from ASMase-knock-out mice. Consistent with the enhanced activation of CtsB in HSCs from ASMase-null mice, the in vivo liver fibrosis induced by chronic treatment with CCl(4) increased in ASMase-null compared with wild-type mice, an effect that was reduced upon CtsB inhibition. In addition to liver, the enhanced proteolytic processing of CtsB was also observed in brain and lung of ASMase-knock-out mice, suggesting that the overexpression of CtsB may underlie the phenotype of NPD. Thus, these findings reveal a functional relationship between ASMase and CtsB and that the ablation of ASMase leads to the enhanced processing and activation of CtsB. Therefore, targeting CtsB may be of relevance in the treatment of liver fibrosis in patients with NPD.

PUBLICATIONS

ORIGINALS
I.F.: 57.66

1 Guanabens N.; Monegal A.; Muxi A.; Martinez-Ferrer A.; Reyes R.; Caballeria J.; del Rio L.; Peris P.; Pons F.; Pares A. **Patients with cirrhosis and ascites have false values of bone density Implications for the diagnosis of osteoporosis.** OSTEOPOROSIS INTERNATIONAL. 23 (4): 1481-1487. **I.F.: 4.58.**

2 Altamirano J.; Bataller R.; Cardenas A.; Michelena J.; Freixa N.; Monras M.; Rios J.; Liccioni A.; Caballeria J.; Gual A.; Lligona A. **Predictive factors of abstinence in patients undergoing liver transplantation for alcoholic liver disease.** ANNALS OF HEPATOLOGY. 11 (2): 213-221. **I.F.: 1.81.**

3 Sancho-Bru P.; Altamirano J.; Rodrigo-Torres D.; Coll M.; Millan C.; Lozano J.J.; Miquel R.; Arroyo V.; Caballeria J.; Gines P.; Bataller R. **Liver progenitor cell markers correlate with liver damage and predict short-term mortality in patients with alcoholic hepatitis.** HEPATOLOGY. 55 (6): 1931-1941. **I.F.: 11.66.**

4 Altamirano J.; Fagundes C.; Dominguez M.; Garcia E.; Michelena J.; Cardenas A.; Guevara M.; Pereira G.; Torres-Vigil K.; Arroyo V.; Caballeria J.; Gines P.; Bataller R. **Acute Kidney Injury Is an Early Predictor of Mortality for Patients With Alcoholic Hepatitis.** CLINICAL GASTROENTEROLOGY & HEPATOLOGY. 10 (1): 65-71. **I.F.: 5.63.**

5 Woodhoo A.; Iruarrizaga-Lejarreta M.; Beraza N.; Garcia-Rodriguez J.L.; Embade N.; Fernandez-Ramos D.; Martinez-Lopez N.; Gutierrez-De Juan V.; Arteta B.; Caballeria J.; Lu S.C.; Mato J.M.; Varela-Rey M.; Martinez-Chantar M.L. **Human antigen R contributes to hepatic stellate cell activation and liver fibrosis.** HEPATOLOGY. 56: 1870-1882. **I.F.: 11.66.**

6 Von Montfort C.; Matias N.; Fernandez A.; Fucho R.; Conde de la Rosa L.; Luz Martinez-Chantar M.; Mato J.M.; Machida K.; Tsukamoto H.; Murphy M.P.; Mansouri A.; Koplowitz N.; Garcia-Ruiz C.; Fernandez-Checa J.C. **Mitochondrial GSH determines the toxic or therapeutic potential of superoxide scavenging in steatohepatitis.** JOURNAL OF HEPATOLOGY. 57: 852-859. **I.F.: 9.26.**

7 Barr J.; Caballeria J.; Martinez-Arranz I.; Dominguez-Diez A.; Alonso C.; Muntane J.; Perez-Cormenzana M.; Garcia-Monzon C.; Mayo R.; Martin-Duce A.; Romero-Gomez M.; Lo Iacono O.; Tordjman J.; Andrade R.J.; Perez-Carreras M.; Le Marchand-Brustel Y.; Tian A.; Fernandez-Escalante C.; Arevalo E.; Garcia-Unzueta M.; Clement K.; Crespo J.; Gual P.; Gomez-Fleitas M.; Martinez-Chantar M.L.; Castro A.; Lu S.C.; Vazquez-Chantada M.; Mato J.M. **Obesity-Dependent Metabolic Signatures Associated with Nonalcoholic Fatty Liver Disease Progression.** JOURNAL OF PROTEOME RESEARCH. 11 (4): 2521-2532. **I.F.: 5.11.**

8 Moles A.; Tarrats N.; Fernandez-Checa J.C.; Mari M. **Cathepsin B Overexpression Due to Acid Sphingomyelinase Ablation Promotes Liver Fibrosis in Niemann-Pick Disease.** JOURNAL OF BIOLOGICAL CHEMISTRY. 287 (2): 1178-1188. **I.F.: 4.77.**

9 Aytes A.; Mollevi D.G.; Martinez-Iniesta M.; Nadal M.; Vidal A.; Morales A.; Salazar R.; Capella G.; Villanueva A. **Stromal interaction molecule 2 (STIM2) is frequently overexpressed in colorectal tumors and confers a tumor cell growth suppressor phenotype.** MOLECULAR CARCINOGENESIS. 51 (9): 746-753. **I.F.: 3.16.**

REVIEWS
I.F.: 5.72

1 Garcia-Ruiz C; Morales A.; Fernandez-Checa J.C. **Statins and Protein Prenylation in Cancer Cell Biology and Therapy.** ANTI-CANCER AGENTS IN MEDICINAL CHEMISTRY. 12 (4): 303-315. **I.F.: 2.86.**

2 Morales A.; Mari M.; Garcia-Ruiz C.; Colell A.; Fernandez-Checa J.C. **Hepatocarcinogenesis and ceramide/cholesterol metabolism.** ANTI-CANCER AGENTS IN MEDICINAL CHEMISTRY. 12(4):364-75. **I.F.: 2.86.**

CLINICAL GUIDELINES
I.F.: 9.26

1 Mathurin P.; Hadengue A.; Bataller R.; Addolorato G.; Burra P.; Burt A.; Caballeria J.; Cortez-Pinto H.; Day C.P.; Forrest E.H.; Gual A.; Leon D.A.; Lligoña A.; Jepsen P.; Mueller S.; Pageaux G.P.; Roskams T.; Seitz H.K.; Stickel F. **EASL clinical practical guidelines: management of alcoholic liver disease.** JOURNAL OF HEPATOLOGY. 57(2):399-420. **I.F.: 9.26.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	70.69	10	8	0
2011	46.82	6	5	0
2012	57.66	9	7	1

GRANTS FOR RESEARCH IN PROGRESS

Caballeria J. **Desarrollo de métodos diagnósticos no invasivos para el diagnóstico y pronóstico de las enfermedades hepáticas inducidas por el alcohol.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1164. Duration: 1/1/2010-31/12/2012.

Fernandez-Checa J.C. **From gut-derived inflammation to obesity-related liver disease.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/03025 (META). Duration: 1/1/2012-31/12/2014.

Fernandez-Checa J.C. **Mitochondrial cholesterol and sphingolipids in ALD: trafficking and cross-talk with the ER.** Sponsored by: National Institutes of Health NIH/NIAAA, 5P50AA011999. Duration: 1/1/2009-31/12/2013.

Fernandez-Checa J.C. **Colesterol y glicoesfingolípidos en la mitocondria hepática y del cerebro y la alteración del metabolismo contribuye a la patología de la enfermedad de Niemann Pick tipo C y caveolinopatías.** Sponsored by: Fundació La Marató de TV3, 050506110015. Duration: 2011-2014.

Fernandez-Checa J.C. **Mitocondria y cáncer: papel del colesterol, GSH y cardiolipina en la regulación de la permeabilización de la membrana mitocondrial y muerte celular.** Sponsored by: Ministerio Ciencia e Innovación, SAF2009-11417. Duration: 01/01/2010-31/12/2012.

Garcia Ruiz M.C. **Análisis lipídico del injerto hepático para discriminar su viabilidad en el trasplante de hígado.** Sponsored by: Fundación Mútua Madrileña AP103502012. Duration: 11/7/2012-10/7/2015.

Garcia-Ruiz C. **Esfingomielinasa ácida y autofagia: regulación del metabolismo lipídico y esteatohepatitis.** Sponsored by: Ministerio de Ciencia e Innovación, SAF2011-23031. Duration: 01/01/2012-31/12/2014.

Marí M. **Catepsinas en la Fibrosis Hepática e Inflamación: Regulación por TNF.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI1002114. Duration: 01/01/2011-31/12/2013.

Colell A. **Regulacion mitocondrial de la citotoxicidad inducida por beta-amiloide.** Sponsored by: Ministerio Ciencia e Innovación, SAF2010-15760. Duration: 01/01/2011-31/12/2013.

Morales A. **Interacción parénquima-estroma en patologías hepáticas asociadas al eje inflamación-cáncer e isquemia/reperfusión: implicaciones terapéuticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI09/00056. Duration: 01/01/2010-31/12/2012.

DOCTORAL THESES

Marí M.; Fernandez-Checa J.C. **Rellevància del TNF i l'esfingomielinasa àcida en la fibrogènesi hepàtica.** PhD student: Núria Tarrats Font.

Garcia-Ruiz C.; Fernandez-Checa J.C. **Regulación y relevancia del glutatión mitocondrial en la progresión y tratamiento de la esteatohepatitis.** PhD Student: Núria Matias Hernando.

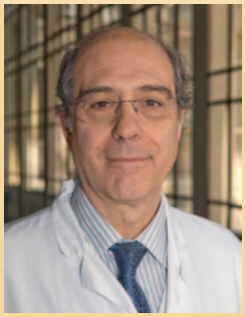
AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

TEAM INVOLVED IN: ciberehd

Liver transplantation and graft viability

GROUP MEMBERS



TEAM LEADER
Antoni Rimola (Hospital Clínic)
Tel.: 93 227 57 53
E-mail: arimola@clinic.cat

GROUP LEADER:
Carmen Peralta (IDIBAPS)

RESEARCHERS:
Constantino Fondevila (Hospital Clínic)
Juan C. García-Valdecasas (Hospital Clínic)
Martí Manyalich (Hospital Clínic)
Albert Sánchez Fueyo (Hospital Clínic)
Joan Rosselló-Catafau (IIBB-CSIC)
Mercedes Brunet (Hospital Clínic)
Annabel Blasi (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Marta Massip (CIBERehd)
Araní Casillas (AGAUR)
Olga Millán (CIBEREHD)
Mª Carolota Londoño (CIBEREHED)
Emma Folch (CSIC)

PRE-DOCTORAL RESEARCHERS:
Amine Zaouali (IDIBAPS)
Mohamed Bejaoui (AGAUR)
Xavier Muñoz (CIBERehd)
Ana Teresa Menjívar (Fundació Clínic)
Mónica Jiménez (IDIBAPS)
Eliano Bonaccorsi-Riani (Fundació Clínic)
Maria Elias Miro (IDIBAPS)
Mariana Mendes Braz (IDIBAPS)

TECHNICIANS:
Anna Rodríguez (IDIBAPS)
Marta Martínez (IDIBAPS)

NURSING STAFF:
Pilar Sesé (IDIBAPS)

COLLABORATORS:
David Calatayud (Hospital Clínic)
Jose Fuster (Hospital Clínic)
Chloë Ballesté (UB)
Andrés Cárdenas (Hospital Clínic)
Oscar Vidal (Hospital Clínic)

VISITING SCIENTISTS:
Eleonora Boncompagni (EASL)

STRATEGIC OBJECTIVES

Investigation of clinical, mechanistic and therapeutic aspects of liver transplantation.

MAIN LINES OF RESEARCH

1. Hepatic ischemia-reperfusion damage and liver graft viability in different models: experimental liver transplantation in the pig with whole or partial grafts, or grafts obtained from donors in asystolia; and liver transplantation in humans. The main objective of this line of research is to define the mechanisms of damage and to design beneficial strategies in the clinical setting.
2. Immunosuppression, with special interest in three fields: immune tolerance of the allograft, biomarkers of the effects of immunosuppressive drugs, and identification of populations with different risks of rejection. The main objective of this line of research is to suit the immunosuppression after liver transplantation to the real needs of each individual patient.

RESEARCH GROUP
PROTECTIVE STRATEGIES AGAINST EXPERIMENTAL HEPATIC ISCHEMIA-REPERFUSION INJURY

Group Leader:
Carmen Peralta (IDIBAPS)

The investigations led by Carmen Peralta are pioneers in the study of surgical and pharmacological protective strategies (in vivo pharmacological treatments, improvements in preservation solutions and ischemic preconditioning) that protect livers against damage induced by ischemia-reperfusion and increase the tolerance of marginal livers such as steatotic liver and reduced-size liver grafts against the risk that show these liver types when they are submitted to transplantation or hepatic resections.
The group's research could improve the postsurgical outcome in liver surgery and could also contribute to a better use of organs for transplantation and consequently, to diminish waiting lists for liver transplantation. Experimental studies conducted by the research team based in the development of new pharmacological and surgical therapies in liver transplantation and hepatic resection have been screening at the clinical practice.
In collaboration with different institutions and companies, the group works with different models of hepatic resections and transplantation and different liver types, including normal livers, reduced-size liver grafts, steatotic livers, etc.
The team is working to develop new pharmacological therapies for preservation solutions in in vivo and ex vivo organ transplantation and to increase liver regeneration using models of partial hepatectomy with/without ischemia-reperfusion or the reduced-size liver transplantation model itself.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	110.83	26	13	4
2011	69.84	16	10	2
2012	90.99	23	13	2

ORIGINALS
I.F.: 90.99

1 Bohne F.; Martinez-Llordella M.; Lozano J.J.; Miguel R.; Benitez C.; Londono M.C.; Manzia T.M.; Angelico R.; Swinkels D.W.; Tjalsma H.; Lopez M.; Abraldes J.G.; Bonaccorsi-Riani E.; Jaeckel E.; Taubert R.; Pirenne J.; Rimola A.; Tisone G.; Sanchez-Fueyo A. **Intra-graft expression of genes involved in iron homeostasis predicts the development of operational tolerance in human liver transplantation.** JOURNAL OF CLINICAL INVESTIGATION. 122 (1): 368-382. **I.F.: 13.07.**

2 Marti J.; Fuster J.; Navasa M.; Ferrer J.; Rimola A.; Pelegrina A.; Fondevila C.; Garcia-Valdecasas J.C. **Effects of Graft Quality on Non-Urgent Liver Retransplantation Survival: Should We Avoid High-Risk Donors?** WORLD JOURNAL OF SURGERY. 26:2914-2922. **I.F.: 2.36.**

3 Balderramo D.; Sendino O.; Burrel M.; Real M.I.; Blasi A.; Martinez-Palli G.; Bordas J.M.; Garcia-Valdecasas J.C.; Rimola A.; Navasa M.; Llach J.; Cardenas A. **Risk factors and outcomes of failed endoscopic retrograde cholangiopancreatography in liver transplant recipients with anastomotic biliary strictures: A case-control study.** LIVER TRANSPLANTATION. 18 (4): 482-489. **I.F.: 3.39.**

Liver transplantation and graft viability

4 Moreno A.; Cervera C.; Fortun J.; Blanes M.; Montejo E.; Abradelo M.; Len O.; Rafecas A.; Martin-Davila P.; Torre-Cisneros J.; Salcedo M.; Cordero E.; Lozano R.; Perez I.; Rimola A.; Miro J.M. **Epidemiology and outcome of infections in human immunodeficiency virus/hepatitis C virus-coinfected liver transplant recipients: A FIPSE/GESIDA Prospective Cohort Study.** LIVER TRANSPLANTATION. 18 (1): 70-82. **I.F.: 3.39.**

5 Martinez-Saldivar B.; Prieto J.; Berenguer M.; De La Mata M.; Pons J.A.; Serrano T.; Rafael-Valdivia L.; Aguilera V.; Barrera P.; Parrilla P.; Lorente S.; Rubin A.; Fraga E.; Rimola A. **Control of Blood Pressure in Liver Transplant Recipients.** TRANSPLANTATION. 93 (10): 1031-1037. **I.F.: 4.00.**

6 Fondevila C.; Hessheimer A.J.; Maathuis M.H.J.; Munoz J.; Taura P.; Calatayud D.; Leuvenink H.; Rimola A.; Garcia-Valdecasas J.C.; Ploeg R.J. **Hypothermic Oxygenated Machine Perfusion in Porcine Donation After Circulatory Determination of Death Liver Transplant.** TRANSPLANTATION. 94 (1): 22-29. **I.F.: 4.00.**

7 Elias-Miro M.; Massip-Salcedo M.; Raila J.; Schweigert F.; Mendes-Braz M.; Ramalho F.; Jimenez-Castro M.B.; Casillas-Ramirez A.; Bermudo R.; Rimola A.; Rodes J.; Peralta C. **Retinol binding protein 4 and retinol in steatotic and nonsteatotic rat livers in the setting of partial hepatectomy under ischemia/reperfusion.** LIVER TRANSPLANTATION. 18: 1198-1208. **I.F.: 3.39.**

8 Manyalich M. **Psychosocial follow-up of living donors and quality system indicators and methodology on organ donation in Europe ELIPSY, ETPOD, EULID, and ODEQUS projects.** EUROPEAN JOURNAL OF PUBLIC HEALTH. 22: 72-73. **I.F.: 2.73.**

9 Padrissa-Altes S.; Zaouali M. A.; Boncompagni, Eleonora; Bonaccorsi-Riani E.; Carbonell T.; Bardag-Gorce F.; Oliva J.; French S.W.; Bartrons R.; Rosello-Catafau J. **The use of a reversible proteasome inhibitor in a model of Reduced-Size Orthotopic Liver transplantation in rats.** EXPERIMENTAL AND MOLECULAR PATHOLOGY. 93 (1): 99-110. **I.F.: 2.42.**

10 Gomez M.P.; Arredondo E.; Paez G.; Manyalich M. **International Registry in Organ Donation and Transplantation 2010.** TRANSPLANTATION PROCEEDINGS. 44: 1592-1597. **I.F.: 1.00.**

11 Manyalich M.; Menjivar A.; Yucetin L.; Peri J.M.; Torres X.; Dias L.; Hiesse C.; Papachristou C.; Fehrman-Ekholm I.; Kvarnstrom N.; Balleste C.; Paredes D.; Revuelta I.; Diekmann F.; Rimola A.; Fondevila C.; Martinez M.; Legendre C.; Pereira R.C.; Carvalho I.A.; Lopes A. **Living Donor Psychosocial Assesment/Follow-up Practices in the Partners' Countries of the ELIPSY Project.** TRANSPLANTATION PROCEEDINGS. 44: 2246-2249. **I.F.: 1.00.**

12 Fondevila C.; Hessheimer A.J.; Flores E.; Ruiz A.; Mestres N.; Calatayud D.; Paredes D.; Rodriguez C.; Fuster J.; Navasa M.; Rimola A.; Taura P.; Garcia-Valdecasas J.C. **Applicability and Results of Maastricht Type 2 Donation After Cardiac Death Liver Transplantation.** AMERICAN JOURNAL OF TRANSPLANTATION. 12 (1): 162-170. **I.F.: 6.39.**

13 Gastaca M.; Aguero F.; Rimola A.; Montejo M.; Miralles P., Lozano R., Castells L.; Abradelo M.; Mata M. de L.; San Juan Rodríguez F.; Cordero E.; Campo S.D.; Manzardo C.; De Urbina J.O.; Pérez I.; Rosa G.de L.; Miro J.M.; FIPSE OLT-HIV investigators. **Liver retransplantation in HIV-infected patients: a prospective cohort study.** AMERICAN JOURNAL OF TRANSPLANTATION. 12(9):2465-76. **I.F.: 6.39.**

14 Miro J.M.; Montejo M.; Castells L.; Rafecas A.; Moreno S.; Agüero F.; Abradelo M.; Miralles P.; Torre-Cisneros J.; Pedreira J.D.; Cordero E.; de la Rosa G.; Moyano B.; Moreno A.; Perez I.; Rimola A.; Spanish OLT in HIV-Infected Patients Working Group investigators. **Outcome of HCV/HIV-coinfected liver transplant recipients: a prospective and multicenter cohort study.** AMERICAN JOURNAL OF TRANSPLANTATION. 12(7):1866-76. **I.F.: 6.39.**

15 Jiménez-Castro M.B.; Elias-Miro M.; Mendes-Braz M.; Lemoine A.; Rimola A.; Rodés J.; Casillas-Ramírez A.; Peralta C. **Tauroursodeoxycholic acid affects PPARκand TLR4 in steatotic liver transplantation.** AMERICAN JOURNAL OF TRANSPLANTATION. 12(12):3257-71. **I.F.: 6.39.**

16 Sánchez Cabús S.; Calatayud D.; García-Roca R.; Ferrer J.; Martí J.; Navasa M.; Rimola A.; Fondevila C.; Fuster J.; García-Valdecasas J.C. **The biliary complications in live donor liver transplant do not affect the long-term results.** CIRUGIA ESPAÑOLA. 91(1):17-24. **I.F.: 0.87.**

17 Mahfoudh-Boussaid A.; Zaouali M.A.; Hauet T.; Hadj-Ayed K.; Miled A.H.; Ghoul-Mazgar S.; Saidane-Mosbahi D.; Rosello-Catafau J.; Ben Abdennebi H. **Attenuation of endoplasmic reticulum stress and mitochondrial injury in kidney with ischemic postconditioning application and trimetazidine treatment.** JOURNAL OF BIOMEDICAL SCIENCE. 19:71. **I.F.: 1.98.**

18 Mosbah I.B.; Zaouali M.A.; Martel C.; Bjaoui M.; Abdennebi H.B.; Hotter G.; Brenner C.; Roselló-Catafau J. **IGL-1 solution reduces endoplasmic reticulum stress and apoptosis in rat liver transplantation.** CELL DEATH&DISEASE. 3:e279. **I.F.: 5.33.**

19 Mahfoudh-Boussaid A.; Zaouali M.A.; Hadj-Ayed K.; Miled A.H.; Saidane-Mosbahi D.; Rosello-Catafau J.; Ben Abdennebi H. **Ischemic preconditioning reduces endoplasmic reticulum stress and upregulates hypoxia inducible factor-1κin ischemic kidney: the role of nitric oxide.** JOURNAL OF BIOMEDICAL SCIENCE. 19:7. **I.F.: 1.98.**

20 Blasi A.; Beltran J.; Pereira A.; Martinez-Palli G.; Torrents A.; Balust J.; Zavala E.; Taura P.; Garcia-Valdecasas J.C. **An assessment of thromboelastometry to monitor blood coagulation and guide transfusion support in liver transplantation.** TRANSFUSION. 52(9):1989-98. **I.F.: 3.22.**

21 San Segundo D.; Brunet M.; Ballesteros M.A.; Millán O.; Muro M.; Castro M.J.; Miñambres E.; López-Hoyos M. **Prospective study of biomarkers of immune response in lung transplant recipients.** TRANSPLANTATION PROCEEDINGS. 44(9):2666-8. **I.F.: 1.00.**

22 Escorsell À.; Mas A.; Fernández J.; García-Valdecasas J.C. **Limitations of use of the noninvasive clearance of indocyanine green as a prognostic indicator of graft function in liver transplantation.** TRANSPLANTATION PROCEEDINGS. 44(6):1539-41. **I.F.: 1.00.**

23 Adam R.; Karam V.; Delvart V.; O'Grady J.; Mirza D.; Klempnauer J.; Castaing D.; Neuhaus P.; Jamieson N.; Salizzoni M.; Pollard S.; Lerut J.; Paul A.; Garcia-Valdecasas J.C.; Rodríguez F.S.; Burroughs A.; All contributing centers (www.eltr.org); European Liver and Intestine Transplant Association (ELITA). **Evolution of indications and results of liver transplantation in Europe. A report from the European Liver Transplant Registry (ELTR).** JOURNAL OF HEPATOLOGY. 57(3):675-88. **I.F.: 9.26.**

REVIEWS
I.F.: 17.20

1 Adeyi O.; Alexander G.; Baiocchi L.; Balasubramanian M.; Batal I.; Bellamy C.O.C.; Bhan A.; Bridges N.; Bucuvalas J.; Charlotte F.; Colvin B.; Czaja A.; Demetris A.; De Vera M.; El-Monayeri M.S.; Feng S.; Ferrell L.; Fiel M.I.; Fontes P.; Fung J.; Haga H.; Hart J.; Honsova E.; Hubscher S.; Wesam I.; Itoh T.; Jhala N.; Jungmann P.; Khettry U.; Koshiba T.; Lassman C.; Lerut J.; Ligato S.; Lunz J.; Mazariegos G.; McCaughan G.; McClelland S.A.; Minervini M.I.; Misdraji J.; Mohanakumar T.; Molne J.; Musat A.; Nalesnik M.; Nasser I.; Neil D.; Neuberger J.; Pappo O.; Petrovic L.; Randhawa P.; Reinholt F.P.; Rubin E.; Ruiz P.; Sagol O.; Sanchez Fueyo A.; Sasatomi E.; Schiano T.; Sebagh M.; Shaked A.; Sharkey F.E.; Shimizu T.; Sis B.; Smith M.; Sonzogni A.; Tchao N.; Thung S.; Tisone G.; Tsamandas A.; Wernerson A.; Wu T.; Yilmaz F. **Importance of liver biopsy findings in immunosuppression management: Biopsy monitoring and working criteria for patients with operational tolerance.** LIVER TRANSPLANTATION. 18: 1154-1170. **I.F.: 3.39.**

2 Hessheimer A.J.; Fondevila C.; Garcia-Valdecasas J.C. **Extracorporeal machine liver perfusion: are we warming up?** CURRENT OPINIONS IN ORGAN TRANSPLANTATION. 17 (2): 143-147 APR 2012 **I.F.: 2.97.**

3 Brunet M. **Cytokines as predictive biomarkers of alloreactivity.** CLINICA CHIMICA ACTA. 413 (17-18): 1354-1358 Sp. Iss. **I.F.: 2.53.**

4 Mendes-Braz M.; Elias-Miro M.; Jimenez-Castro M.B.; Casillas-Ramirez A.; Ramalho F.S.; Peralta C. **The Current State of Knowledge of Hepatic Ischemia-Reperfusion Injury Based on Its Study in Experimental Models.** JOURNAL OF BIOMEDICINE AND BIOTECHNOLOGY. 2012;2012:298657. **I.F.: 2.44.**

5 Padrissa-Altés S.; Zaouali M.A.; Bartrons R.; Roselló-Catafau J. **Ubiquitin-proteasome system inhibitors and AMPK regulation in hepatic cold ischaemia and reperfusion injury: possible mechanisms.** CLINICAL SCIENCE (LONDON). 123(2):93-8. **I.F.: 4.32.**

6 Elias-Miró M.; Jiménez-Castro M.B.; Mendes-Braz M.; Casillas-Ramírez A.; Peralta C. **The Current Knowledge of the Role of PPAR in Hepatic Ischemia-Reperfusion Injury.** PPAR RESEARCH. 2012:802384. **I.F.: 1.56.**

EDITORIALS
I.F.: 8.12

1 Brouard S.; Sanchez-Fueyo A. **Spontaneous Operational Tolerance in Kidney Transplant Recipients: Response.** AMERICAN JOURNAL OF TRANSPLANTATION. 12 (5): 1351-1352. **I.F.: 6.39.**

2 Hoyo I.; Martinez-Pastor J.; Garcia-Ramiro S.; Climent C.; Brunet M.; Cuesta M.; Mensa J.; Soriano A. **Decreased serum linezolid concentrations in two patients receiving linezolid and rifampicin due to bone infections.** SCANDINAVIAN JOURNAL OF INFECTIOUS DISEASES. 44 (7): 548-550. **I.F.: 1.72.**

MULTICENTRICS
I.F.: 6.40

1 Abdelmalek M.F.; Humar A.; Stickel F.; Andreone P.; Pascher A.; Barroso E.; Neff G.W.; Ranjan D.; Toselli L.T.; Gane E.J.; Scarola J.; Alberts R.G.; Maller E.S.; Lo C.M.; Sirolimus Liver Conversion Trial Study Group (Rimola A, among other members of the group). **Sirolimus conversion regimen versus continued calcineurin inhibitors in liver allograft recipients: a randomized trial.** AMERICAN JOURNAL OF TRANSPLANTATION. 12(3):694-705. **I.F.: 6.39.**

GRANTS FOR RESEARCH IN PROGRESS

Peralta M.C. **Preservació de l'empelt hepatic.** Sponsored by: AGAUR 2009_SGR_952. Duration: 22/7/2009-31/12/2013.

Manyalich M. **European Living Donation and Public HealthCentre coordinador: HCPB.** Sponsored by: European Commission 2006211. Duration: 1/5/2007-6/8/2012.

Manyalich M. **European Living Donor Psychosocial Follow-up.** Sponsored by: European Commission 20081104. Duration: 1/12/2009-31/12/2012.

Fondevila C. **Evaluacion de la modificación farmacológica del flujo portal para prevenir la aparición del síndrome small-for-size en el transplante hepático en cerdos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI080273. Duration: 1/1/2009-14/2/2012.

Rimola A. **Valor predictivo de parametros inmunológicos pretrasplante del receptor y del donante en el desarrollo de rechazo e infección en el trasplante hepático.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0418. Duration: 1/1/2010-31/12/2012.

Manyalich M. **Impacto psicosocial del proceso de donación en el donante vivo de órganos para trasplante.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/00949. Duration: 1/1/2011-31/12/2013.

Sanchez A. **Influencia de la regulación del metabolismo del hierro sobre el desarrollo de tolerancia inmunológica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01881. Duration: 1/1/2012-31/12/2014.

Fondevila C. **Métodos para incrementar la aplicabilidad clínica del trasplante procedente de los donantes a corazón parado tipo 2 de la clasificación de Maastrich.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01979. Duration: 1/1/2012-31/12/2014.

Sanchez A. **Estudio piloto de retirada de la medicación inmunosupresora en pacientes que exhiben marcadores transcripcionales de alta probabilidad de tolerancia.** Sponsored by: Fundación Mútua Madrileña AP93762011. Duration: 16/9/2011-15/9/2013.

Peralta M.C. **Regulación del RBP4 en trasplante de higados esteatósicos.** Sponsored by: Ministerio de Economía y Competitividad BFU2009_07410. Duration: 1/1/2010-31/12/2012.

Sanchez Fueyo A. **Immunosuppression Withdrawal for Stable Pediatric Liver Transplant RecipientNIDDK Multi-Center Clinical Study Implementation Planning Grants (U34).** Sponsored by: National Institutes of Health 5813SC. Duration: 30/9/2009-31/12/9998.

Blasi A. **Glucemia en el trasplante hepàtico: factores implicados e impacto sobre el funcionalismo del injerto.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/00759. Duration: 01/01/2010-31/12/2013.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Gastrointestinal and pancreatic oncology

TEAM INVOLVED IN: ciberehd & ciberer

GROUP MEMBERS

TEAM LEADER
Antoni Castells Garangou (Hospital Clínic)
Tel.: 93 227 57 39
E-mail: castells@clinic.cat

GROUP LEADER:
Cristina Fillat Fonts (IDIBAPS)

RESEARCHERS:
Juan Ramon Ayuso (Hospital Clínic)
Francesc Balaguer Prunés (Hospital Clínic)
Sergi Castellví Bel (IDIBAPS)
José Ignacio Elizalde (Hospital Clínic)
Laureano Fernández-Cruz (Hospital Clínic)
Mª Glòria Fernández-Esparrach (Hospital Clínic)
Mª Àngels Ginès Gibert (Hospital Clínic)
Antonio Mª de Lacy Fortuny (Hospital Clínic)
Salvador Navarro Colás (Hospital Clínic)
Maria Pellisè Urquiza (Hospital Clínic)
Oscar Vidal Pérez (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Maria Victoria Maliandi (IDIBAPS)
Anabel José Goberna (IDIBAPS)
Oriol Sendino Garcia (Hospital Clínic)
Mª Dolores Giráldez Jiménez (Hospital Clínic)
Esther Sánchez Tillo (CIBERehd)

PRE-DOCTORAL RESEARCHERS:
Victòria Gonzalo Pascual (Hospital Clínic)
María López-Cerón Pinilla (Fundació Clínic)
Xavier Borrat Frigola (Hospital Clínic)
Leticia Moreira Ruiz (Hospital Clínic)
Laura Visa Turmo (Hospital Clínic)
Erwin Sanabria Velásquez (CIBERehd)
Elena Vila Navarro (CIBERehd)
Hugo Uchima Koecklin (CIBERehd)
Clara Esteban Jurado (CIBERehd)
Isabel Quintanilla Leo (Fundació Clínic)
Xavier Bofill de Ros (FPU)
Ana Mato Berciano (FPU)
Eneko Villanueva Verdejo (FPI Gobierno Vasco)
Maria Rovira Rigau (FPI)

TECHNICIANS:
Jennifer Múñoz Sancho (CIBERehd, Hospital Clínic)
Georgina Ramírez Ramal (CIBERehd)
Esther Samper Lirola (CIBERehd, Hospital Clínic)
Irene Sangrador Escrig (Fundació Clínic)
Ana Boullosa Goberna (IDIBAPS)

NURSING STAFF:
Teresa Ocaña Bombardo (Hospital Clínic)
Cristina Rodríguez de Miguel (Fundació Clínic)
Anna Serradesanferm Fabregas (Hospital Clínic)
Àngels Pozo Fernández (Hospital Clínic)
Maria Teresa Hospital Vidal (Fundació Clínic)

ADMINISTRATIVE STAFF:
Diana Vargas Ríos (Hospital Clínic)

COLLABORATORS:
Pere Gambús Cerillo (Hospital Clínic)
Eva Cristina Vaquero Raya (Hospital Clínic)
Meritxell Gironella Cos (CIBERehd. Hospital Clínic)
Imma Garrell Lluis (CAPSE)
Jordi Camps Polo (Fundació Clínic)

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Gastrointestinal and pancreatic oncology

STRATEGIC OBJECTIVES

The gaining of in-depth knowledge of the mechanisms underlying the development and progression of gastrointestinal and pancreatic premalignant and malignant lesions, with a view to defining new diagnostic, therapeutic and/or preventive strategies.

MAIN LINES OF RESEARCH

The activity of the research group in gastrointestinal and pancreatic oncology is divided into four areas, and these in turn correspond to different lines of investigation:

1. Physiopathology of colorectal cancer:
- Hereditary forms of colorectal cancer, screening and surveillance.
- Genetic susceptibility in colorectal cancer.
- Epigenetics of colorectal cancer.

2. Physiopathology of pancreatic cancer:
- Implication of microRNAs in pancreatic cancer.
- Epithelial-mesenchymal transition in the local and metastatic spread of pancreatic cancer.

3. Research and innovation in endoscopy:
- Endoscopic ultrasound.
- Advanced diagnostic techniques.
- Endoscopic therapies.

4. Research and innovation in surgery:
- Surgery for colorectal cancer.
- Surgery for pancreatic cancer.

RESEARCH GROUP
GENE THERAPY AND CANCER GROUP

Group Leader:
Cristina Fillat (IDIBAPS)

The Gene Therapy and Cancer Group led by Cristina Fillat started at the IDIBAPS in September 2011, with the support of the ISIS Programme from the Instituto de Salud Carlos III and acknowledged by the Catalan Government as a Singular Research Group. Our research focuses on the study of the molecular and cellular basis of pancreatic ductal adenocarcinoma and the development of novel experimental therapies based on gene transfer and virotherapy.
The main research lines are:

1. Identify specific cellular pathways and molecular determinants altered in pancreatic tumors.
2. Development of antitumoral therapies based on oncolytic adenovirus. Main interest is devoted to the search for sensitizers of adenoviral oncolysis and to study their mechanisms of synergie. Special emphasis is also applied to engineer tumor-selective oncolytic adenoviruses.
3. Explore novel non-viral experimental therapies for pancreatic tumors. Preclinical testing of the newly developed therapies is studied in genetically-modifiedmouse models and in orthotopicxenografts. Some of the animal models are specially designed to allow for the non invasive imaging of tumor progression and metastatic processes.

PUBLICATIONS

ORIGINALS
I.F.: 224.81

1 Jimenez A.; Casamitjana R.; Flores L.; Viaplana J.; Corcelles R.; Lacy A.; Vidal J. **Long-Term Effects of Sleeve Gastrectomy and Roux-en-Y Gastric Bypass Surgery on Type 2 Diabetes Mellitus in Morbidly Obese Subjects.** ANNALS OF SURGERY. 256: 1023-1029. **I.F.: 7.49.**

2 Romero F.; Nicolau J.; Flores L.; Casamitjana R.; Ibarzabal A.; Lacy A.; Vidal J. **Comparable early changes in gastrointestinal hormones after sleeve gastrectomy and Roux-En-Y gastric bypass surgery for morbidly obese type 2 diabetic subjects.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (8): 2231-2239. **I.F.: 4.01.**

3 Giraldez M.D.; Lopez-Doriga A.; Bujanda L.; Abuli A.; Bessa X.; Fernandez-Rozadilla C.; Munoz J.; Cuatrecasas M.; Jover R.; Xicola R.M.; Llor X.; Pique J.M.; Carracedo A; Ruiz-Ponte C.; Cosme A.; Enriquez-Navascues J.M.; Moreno V.; Andreu M.; Castella A.; Balaguer F.; Castellvi-Bel S. **Susceptibility genetic variants associated with early-onset colorectal cancer.** CARCINOGENESIS. 33 (3): 613-619. **I.F.: 5.70.**

4 Delgado S.; Ibarzabal A.; Adelsdorfer C.; Adelsdorfer W.; Corcelles R.; Momblan D.; Lacy A.M. **Transumbilical single-port sleeve gastrectomy: initial experience and comparative study.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (5): 1247-1253. **I.F.: 4.01.**

5 Guarner-Argente C.; Martinez-Palli G.; Navarro-Ripoll R.; Cordova H.; Beltran M.; Martinez-Zamora M.A.; Comas J.; De Miguel C.R.; Rodri-

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	132.71	26	16	4
2011	206.49	33	12	10
2012	224.81	33	18	7

guez-D'Jesus A.; Filella X.; Hernandez-Cera C.; Lacy A.M.; Thompson C.C.; Fernandez-Esparrach G. **Inflammatory impact of NOTES peritoneoscopy is not different from that of laparoscopy: a randomized comparative study in a survival porcine model.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (2): 374-380. **I.F.: 4.01.**

6 Quintero E.; Castells A.; Bujanda L.; Cubiella J.; Salas D.; Lanas A.; Andreu M.; Carballo F.; Morillas J.D.; Hernandez C.; Jover R.; Montalvo I.; Arenas J.; Laredo E.; Hernandez V.; Iglesias F.; Cid E.; Zubizarreta R.; Sala T.; Ponce M.; Andres M.; Teruel G.; Peris A.; Roncales M.P.; Polo-Tomas M.; Bessa X.; Ferrer-Armengou O.; Grau J.; Serradesanferm A.; Ono A.; Cruzado J.; Perez-Riquelme F.; Alonso-Abreu I.; De la Vega-Prieto M.; Reyes-Melian J.M.; Cacho G.; Diaz-Tasende J.; Herreros-de-Tejada A.; Poves C.; Santander C; Gonzalez-Navarro A. **Colonoscopy versus Fecal Immunochemical Testing in Colorectal-Cancer Screening.** NEW ENGLAND JOURNAL OF MEDICINE. 366 (8): 697-706. **I.F.: 53.30.**

7 Boj S.F.; Van Es J.H.; Huch M.; Li V.S.W.; Jose A.; Hatzis P.; Mokry M.; Haegebarth A.; Van den Born M.; Chambon P.; Voshol P.; Dor Y.; Cuppen E.; Fillat C.; Clevers H. **Diabetes Risk Gene and Wnt Effector Tcf7l2/TCF4 Controls Hepatic Response to Perinatal and Adult Metabolic Demand.** CELL. 151(7):1595-607. **I.F.: 32.40.**

8 Moreira L.; Balaguer F.; Lindor N.; De la Chapelle A.; Hampel H.; Aaltonen L.A.; Hopper J.L.; Le Marchand L.; Gallinger S.; Newcomb P.A.; Haile R.; Thibodeau S.N.; Gunawardena S.; Jenkins M.A.; Buchanan D.D.; Potter J.D.; Baron J.A.; Ahnen D.J.; Moreno Victor.; Andreu M.; De Leon M.P.; Rustgi A.K.; Castells A. **Identification of Lynch Syndrome Among Patients With Colorectal Cancer.** JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 308: 1555-1565. **I.F.: 30.03.**

9 Perez-Carbonell L.; Ruiz-Ponte C.; Guarinos C.; Alenda C.; Paya A.; Brea A.; Egoavil C.M.; Castillejo A.; Barbera V.M.; Bessa X.; Xicola R.M.; Rodriguez-Soler M.; Sanchez-Fortun C.; Acame N.; Castellvi-Bel S.; Pinol V.; Balaguer F.; Bujanda L.; De-Castro M.L.; Llor X.; Andreu M.; Carracedo A.; Soto J.L.; Castells A.; Jover R. **Comparison between universal molecular screening for Lynch syndrome and revised Bethesda guidelines in a large population-based cohort of patients with colorectal cancer.** GUT. 61 (6): 865-872. **I.F.: 10.11.**

10 Garriga-Canut M.; Agustin-Pavon C.; Herrmann F.; Sanchez A.; Dierssen M.; Fillat C.; Isalan M. **Synthetic zinc finger repressors reduce mutant huntingtin expression in the brain of R6/2 mice.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA. 109: E3136-E3145. **I.F.: 9.68.**

11 Spain S.L.; Carvajal-Carmona L.G.; Howarth K.M.; Jones A.M.; Su Z.; Cazier J.B.; Williams J.; Aaltonen L.A.; Pharoah P.; Kerr D.J.; Cheadle J.; Li L.; Casey G.; Vodicka P.; Sieber O.; Lipton L.; Gibbs P.; Martin N.G.; Montgomery G.W.; Young J.; Baird P.N.; Morreau H.; Van Wezel T.; Ruiz-Ponte C.; Fernandez-Rozadilla C.; Carracedo A.; Castells A.; Castellvi-Bel S.; Dunlop M.; Houlston R.S.; Tomlinson I.P.M. **Refinement of the associations between risk of colorectal cancer and polymorphisms on chromosomes 1q41 and 12q13.13.** HUMAN MOLECULAR GENETICS. 21 (4): 934-946. **I.F.: 7.64.**

12 Sanchez-Tillo E.; Liu Y.; De Barrios O.; Siles L.; Fanlo L.; Cuatrecasas M.; Darling D.S.; Dean D.C.; Castells A.; Postigo A. **EMT-activating transcription factors in cancer: beyond EMT and tumor invasiveness.** CELLULAR AND MOLECULAR LIFE SCIENCES. 69: 3429-3456. **I.F.: 6.57.**

13 Jose A.; Sobrevals L.; Ivorra A.; Fillat C. **Irreversible electroporation shows efficacy against pancreatic carcinoma without systemic toxicity in mouse models.** CANCER LETTERS. 317 (1): 16-23. **I.F.: 4.24.**

14 Antelo M.; Balaguer F.; Shia J.; Shen Y.; Hur K.; Moreira L.; Cuatrecasas M.; Bujanda L.; Giraldez M.D.; Takahashi M.; Cabanne A.; Barugel M.E.; Arnold M.; Roca E.L.; Andreu M.; Castellvi-Bel S.; Llor X.; Jover R.; Castells A.; Boland C.R.; Goel A. **A High Degree of LINE-1 Hypomethylation Is a Unique Feature of Early-Onset Colorectal Cancer.** PLOS ONE. 7: e45357. **I.F.: 4.09.**

15 Garcia-Gonzalez M.A.; Nicolas-Perez D.; Lanas A.; Bujanda L.; Carrera P.; Benito R.; Strunk M.; Sopena F.; Santolaria S.; Piazuelo E.; Jimenez P.; Campo R.; Espinel J.; Manzano M.; Geijo F.; Pellise M.; Gonzalez-Huix F.; Espinos J.; Zaballa M.; Tito Ll.; Barranco L.; Pazo R.; Quintero E. **Prognostic Role of Host Cyclooxygenase and Cytokine Genotypes in a Caucasian Cohort of Patients with Gastric Adenocarcinoma.** PLOS ONE. 7: e46179. **I.F.: 4.09.**

16 Lacy A.M.; Saavedra-Perez D.; Bravo R.; Adelsdorfer C.; Aceituno M.; Balust J. **Minilaparoscopy-assisted natural orifice total colectomy: technical report of a minilaparoscopy-assisted transrectal resection.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (7): 2080-2085. **I.F.: 4.01.**

17 Garcia-Gonzalez M.A.; Quintero E.; Bujanda L.; Nicolas D.; Benito R.; Strunk M.; Santolaria S.; Sopena F.; Badia M.; Hijona E.; Perez-Aisa M.A.; Mendez-Sanchez I.M.; Thomson C.; Carrera P.; Piazuelo E.; Jimenez P.; Espinel J.; Campo R.; Manzano M.; Geijo F.; Pellise M.; Gonzalez-Huix F.; Espinos J.; Tito Ll.; Zaballa M.; Pazo R.; Lanas A. **Relevance of GSTM1, GSTT1, and GSTP1 gene polymorphisms to gastric cancer susceptibility and phenotype.** MUTAGENESIS. 27: 771-777. **I.F.: 3.18.**

18 Ferrandez A.; Piazuelo E.; Castells A. **Aspirin and the prevention of colorectal cancer.** BEST PRACTICE & RESEARCH IN CLINICAL GASTROENTEROLOGY. 26 (2): 185-195. **I.F.: 2.46.**

19 Cordova H.; Guarner-Argente C.; Martinez-Palli G.; Navarro R.; Rodriguez-D'Jesus A.; De Miguel C.R.; Beltran M.; Martinez-Zamora M.A.; Comas J.; Lacy A.M.; Thompson C.C.; Fernandez-Esparrach G. **Gastric Emptying is Delayed in Transgastric Notes: A Randomized Study in Swine.** JOURNAL OF SURGICAL RESEARCH. 174 (2): E61-E67. **I.F.: 2.25.**

20 Moreira L.; Balaguer F. **The newly discovered variant enhancer loci: providing new epigenetic clues for biomarker discovery in colon cancer?** PERSONALIZED MEDICINE. 9: 671-673. **I.F.: 1.53.**

21 Segura P.P.; Balaguer F. **Need to implement a coordinated and multidisciplinary care in the Spanish population at increased risk for colorectal cancer.** CLINICAL & TRANSLATIONAL ONCOLOGY. 14 (5): 333-337. **I.F.: 1.33.**

22 Fernandez-Cruz L.; Sabater L.; Fabregat J.; Boggi U. **Complications after pancreaticoduodenectomy.** CIRUGIA ESPAÑOLA. 90 (4): 222-232. **I.F.: 0.87.**

23 Serra Sutton V.; Espallargues M.; Balaguer F.; Castells A. **Development of indicators to evaluate colorectal cancer prevention programs in the high-risk population. The experience of a high-risk colorectal cancer clinic.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35: 613-624. **I.F.: 0.73.**

24 Segura P.P.; Balaguer F. **Need for coordinated, multidisciplinary care in the spanish population at elevated risk of colorectal cancer.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35 (3): 129-133. **I.F.: 0.73.**

25 Ortega E.; Morinigo R.; Flores L.; Moize V.; Rios M.; Lacy A.M.; Vidal J. **Predictive factors of excess body weight loss 1 year after laparoscopic bariatric surgery.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (6): 1744-1750. **I.F.: 4.01.**

26 Moize V.; Ibarzabal A.; Sanchez Dalmau B.; Flores L.; Andreu A.; Lacy A.; Vidal J. **Nystagmus: An Uncommon Neurological Manifestation of Thiamine Deficiency as a Serious Complication of Sleeve Gastrectomy.** NUTRITION IN CLINICAL PRACTICE. 27: 788-792. **I.F.: 1.59.**

27 Castellvi-Bel S.; Ruiz-Ponte C.; Fernandez-Rozadilla C.; Abuli A.; Munoz J.; Bessa X.; Brea-Fernandez A.; Ferro M.; Giraldez M.D.; Xicola R.M.; Llor X.; Jover R.; Pique J.M.; Andreu M.; Castells A.; Carracedo A. **Seeking genetic susceptibility variants for colorectal cancer: the EPICOLON consortium experience.** MUTAGENESIS. 27 (2): 153-159 Sp. Iss. **I.F.: 3.18.**

28 De Miguel C.R.; Serradesanferm A.; Del Manzano S.; Cardenas A.; Fernandez-Esparrach G.; Gines A.; Ricart E.; Sendino O.; Gonzalez-Suarez B.; Lopez-Ceron M.; Llach J.; Grau J.; Castells A.; Pellise M. **Timing of polyethylene glycol administration is a key factor in the tolerability and efficacy of colon preparation in colorectal cancer screening.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35 (4): 236-242. **I.F.: 0.73.**

29 Molina V.; Visa L.; Conill C.; Navarro S.; Escudero J.M.; Auge J.M.; Filella X.; Lopez-Boado M.A.; Ferrer J.; Fernandez-Cruz L.; Molina R. **CA 19-9 in pancreatic cancer: retrospective evaluation of patients with suspicion of pancreatic cancer.** TUMOR BIOLOGY. 33 (3): 799-807 Sp. Iss. **I.F.: 2.14.**

30 Fernandez-Cruz L.; Molina V.; Vallejos R.; Chavarria E.J.; Lopez-Boado M.A.; Ferrer J. **Outcome after laparoscopic enucleation for non-functional neuroendocrine pancreatic tumours.** HPB. 14 (3): 171-176. **I.F.: 1.60.**

31 Fernandez-Cruz L.; Lopez-Boado M.A.; Ferrer J. **Repeated pancreatectomy after pancreato-duodenectomy for a intraductal papillary mucinous tumour: advantage of pancreatico-gastrostomy with a gastric partition.** HPB. 14 (2): 132-135. **I.F.: 1.60.**

32 Takahashi M.; Cuatrecasas M.; Balaguer F.; Hur K.; Toiyama Y.; Castells A.; Boland C.R.; Goel A. **The clinical significance of MiR-148a as a predictive biomarker in patients with advanced colorectal cancer.** PLOS ONE. 7(10):e46684. **I.F.: 4.09.**

33 Rodríguez-D'Jesús A.; Córdova H.; Elizalde J.I.; Cuatrecasas M.; Saperas E.; Llach J.; Fernández-Esparrach G. **Usefulness of endoscopic biopsy in Barrett's esophagus]. Med Clin).** MEDICINA CLINICA. 139(3):103-6. **I.F.: 1.38.**

REVIEWS
I.F.: 7.07

1 Lopez-Ceron M.; Pellise M. **Biology and diagnosis of aberrant crypt foci.** COLORECTAL DISEASE. 14 (4): E157-E164 **I.F.: 2.58.**

2 Navarro Colas S.; Vaquero Raya E.C. **Strategy in intraductal papillary mucinous neoplasm of the pancreas.** GASTROENTEROLOGIA Y HEPATOLOGIA. 35: 652-659. **I.F.: 0.73.**

3 Pellisé M.; Díaz Tasende J.; Balaguer F.; Bustamante-Balén M.; Herráiz M.; Herreros de Tejada A.; Gimeno-García A.Z.; López-Cerón M.; Marín J.C.; Parra Blanco A. **Technical review of advanced diagnostic endoscopy in patients at high risk of colorectal cancer. Gastroenterol Hepatol. . No abstract available.** GASTROENT HEPATBARC. 35(4):278-92. **I.F.: 0.73.**

4 Fillat C.; Altafaj X. **Gene therapy for Down syndrome.** PROG BRAIN RES. 197:237-47. **I.F.: 3.04.**

EDITORIAL
I.F.: 13.06

1 Navarro S.; Ferrer J.; Bombi J.A.; Lopez-Boado M.A.; Ayuso J.R.; Ginesa A.; Fernandez-Esparrach G.; Vaquero E.; Cuatrecasas M.; Fernandez-Cruz L. **Pseudopapillary solid tumor of the pancreas: Report of 6 cases.** MEDICINA CLINICA. 138 (3): 114-118. **I.F.: 1.38.**

2 Castellví-Bel S.; Abulí A.; Castells A. **Meta-analysis of several GWAS sets yields additional genetic susceptibility variants for colorectal cancer: first X-linked component identified.** GASTROENTEROLOGOGY. 143(6):1684-5. **I.F.: 11.67.**

CLINICAL GUIDELINES
I.F.: 5.21

1 Jover R.; Herráiz M.; Alarcón O.; Brullet E.; Bujanda L., Bustamante M.; Campo R.; Carreño R.; Castells A.; Cubiella J.; García-Iglesias P.; Hervás A.J.; Menchén P.; Ono A.; Panadés A.; Parra-Blanco A.; Pellisé M.; Ponce M.; Quintero E.; Reñé J.M.; Sánchez del Río A.; Seoane A.; Serradesanferm A., Soriano Izquierdo A.; Vázquez Sequeiros E.; Spanish Society of Gastroenterology; Spanish Society of Gastrointestinal Endoscopy Working Group. **Clinical practice guidelines: quality of colonoscopy in colorectal cancer screening.** ENDOSCOPY. 44(4):444-51. **I.F.: 5.21.**

GRANTS FOR RESEARCH IN PROGRESS

Castells A. **Grup de recerca en oncologia gastrointestinal i pancreàtica.** Sponsored by: AGAUR 2009_SGR_849. Duration: 29/7/2009-31/12/2013.

Castellvi S. **Genetic Study of Common Hereditary Bowel Cancers in Hispania and the AmericasCentre coordinador: CANCER RESEARCH UK.** Sponsored by: European Commission 223678. Duration: 1/6/2009-30/11/2012.

Pellise M. **Implicación de los focos de criptas aberrantes en la carcinogénesis colorrectal: estudio morfológico con técnicas de endoscopia avanzada y caracterización molecular.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0669. Duration: 1/1/2010-31/12/2013.

Balaguer F. **Implicación del metiloma en la patogénesis y diagnóstico del cáncer colorrectal.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/00384. Duration: 1/1/2011-31/12/2013.

Elizalde J.I. **Identificación de factores genéticos, ambientales y de expresión fenotípica asociados a la progresión de lesiones precursoras del cáncer gástrico: estudio coordinado español de seguimiento.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01031. Duration: 1/1/2011-31/12/2013.

Fernandez-Cruz L. **Modelo experimental animal de trasplante de páncreas: papel del JNK-inhibitor como estrategia terapéutica para la prevención de los fenómenos de isquemia-reperfusión.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01940. Duration: 1/1/2012-31/12/2014.

Fernandez M.G. **Utilidad de un biomarcador serológico para evaluar el riesgo de transformación maligna de los pacientes**

con esófago de Barrett y correlación con marcadores histológicos. Estudio prospectivo. Sponsored by: Fundación Mútua Madrileña AP100262012. Duration: 22/6/2012-21/6/2015.

Fernandez M.G. **Mediastinoscopia transesofágica guiada por un sistema de registro de la imagen versus mediastinoscopia convencional. Estudio comparativo en un modelo porcino.** Sponsored by: Ministerio de Economía y Competitividad SAF2010-15635. Duration: 1/1/2011-31/12/2013.

Castells A. **Caracterización genómica del síndrome de Lynch mediante secuenciación de nueva generación (NGS): correlación con el perfil transcriptómico y epigenómico.** Sponsored by: Ministerio de Economía y Competitividad SAF2010-19273. Duration: 1/1/2011-31/12/2013.

Fillat C. **Grup de Recerca Singular en Teràpia Gènica.** Sponsored by: AGAUR 2009_SGR_1527. Duration: 29/7/2009-31/12/2013.

Fillat C. **Comprovació de l'eficàcia i seguretat de AduPARE1A en el tractament del càncer de pancreas.** Sponsored by: CIDEM-Generalitat de Catalunya. VALTEC09-2-0047. Duration: 15/12/2009-15/12/2012.

Fillat C. **Caracterización de microRNAs sensibilizadores de la oncolisis adenoviral frente al cáncer de páncreas.** Sponsored by: Ministerio de Economía y Competitividad. BIO2011-30299-C02-02. Duration: 01/01/2012-31/12/2014.

DOCTORAL THESES

Castellví S. **Caracterización clínica, patológica y molecular del cáncer colorrectal de debut precoz.** PhD student: Maria Dolores Giráldez Jiménez.

Gines M.A. **Evaluación de nueva tecnología para optimizar la rentabilidad de la ecoendoscopia en el diagnóstico citohistológico de lesiones sólidas y quísticas del aparato digestivo.** PhD student: Oriol Sendino Garcia.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Hereditary metabolic diseases

GROUP MEMBERS

TEAM LEADER
Antonia Ribes (Hospital Clínic)
Tel.: 93 227 54 00 (9340)
E-mail: aribes@clinic.cat

RESEARCHERS:
Paz Briones (CSIC)
Laura Gort (Hospital Clínic)
Teresa Pàmpols (Hospital Clínic)
Mª Josep Coll (Hospital Clínic)
Rosa Mª López (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Frederic Tort (CIBERer)
Aleix Navarro-Sastre (CIBERer)
Angela Arias (CIBERer)
Judit Macías (Fundació Niemann Pick)

PRE-DOCTORAL RESEARCHERS:
Nuria Bujan (FIS)
Leslie Matalonga (Fundació Clínic)
Xènia Ferrer (FIS)

COLLABORATORS:
Marisa Girós (Hospital Clínic)
Judit Garcia-Villoria (Hospital Clínic)
José Luis Marin (Hospital Clínic)

TEAM INVOLVED IN: ciberer

STRATEGIC OBJECTIVES

The strategic objective of our group is to investigate the genetic and biochemical bases, as well as the physiopathological mechanisms, of inherited metabolic diseases. The ultimate aim is to develop new diagnostic and therapeutic strategies. On the other hand, we conduct translational research, stimulating the transfer of knowledge from basic research to the clinical practice, and vice versa.

MAIN LINES OF RESEARCH

Within the general line of inherited metabolic diseases, our specific research lines are based on the following:

1. **In vitro therapeutic approaches.** This study involves the testing of chemical and peptide libraries. Selection has been made of disease-causing stop and missense mutations previously identified by our group. We make use of fibroblasts, pluripotent induced stem (IPS) cells and neuronal cell cultures obtained from IPS.
2. **Sanfilippo disease and CoQ10.** This project is focused on the study of the relationship between CoQ10 and Mucopolysaccharidosis III or Sanfilippo disease. We aim to find out whether there is correlation between CoQ10 levels and the disease, and whether treatment of fibroblasts derived from patients with CoQ10 produces any effect.
3. **Cerebral creatine deficiency.** Our group has been a pioneer in the identification of patients with cerebral creatine deficiency. Actually, we are focused on the evaluation of different creatine derivatives with the purpose of establishing a treatment for creatine transport deficiency. These creatine uptake studies are carried out in neurons derived from IPS cells as well as in HUVEC and HBMEC cells silenced with RNA interference.
4. **Niemann-Pick type C disease.** The study of this disorder has been carried out in a knock-in murine model in order to gain further knowledge of the underlying physiopathological mechanisms involved in this disease and to test different drugs with potential therapeutic activity that act in the proteosomal degradation pathways.
5. **Identification of patients with mutations in genes involved in the biosynthesis and transport of cofactors of the mitochondrial energy metabolism.** We aim to identify new defects in the cofactor metabolism in patients with a defect in the mitochondrial energy metabolism in order to generate knowledge that could be implemented to the diagnosis and to the design of therapeutic options.
6. **Identification of the genes responsible for Mendelian disorders** in patients pre-selected on the basis of their clinical and biochemical characteristics using exome sequencing. Particularly, patients with CoQ10 deficiency, mtDNA depletion and congenital defects of glycosylation (CDG).

PUBLICATIONS

ORIGINALS
I.F.: 44.77

1 Gomez A.R.; Couce M.L.; Garcia-Villoria J.; Torres A.; Souto A.B.; Yague J.; Vilaseca M.A.; Ribes A.; Arostegui J.I. **Clinical, Genetic, and Therapeutic Diversity in 2 Patients With Severe Mevalonate Kinase Deficiency.** PEDIATRICS. 129 (2): E535-E539. **I.F.: 5.44.**

2 Xiao J.; Westbroek W.; Motabar O.; Lea W.A.; Hu X.; Velayati A.; Zheng W.; Southall N.; Gustafson A.M.; Goldin E.; Sidransky E.; Liu K.; Simeonov A.; Tamargo R.J.; Ribes A.; Matalonga L.; Ferrer M.; Marugan J.J. **Discovery of a Novel Noniminosugar Acid alpha Glucosidase Chaperone Series.** JOURNAL OF MEDICINAL CHEMISTRY. 55: 7546-7559. **I.F.: 5.25.**

3 Casado M.; O'Callaghan M.M.; Montero R.; Perez-Cerda C.; Perez B.; Briones P.; Quintana E.; Muchart J.; Aracil A.; Pineda M.; Artuch R. **Mild Clinical and Biochemical Phenotype in Two Patients with PMM2-CDG (Congenital Disorder of Glycosylation Ia).** CEREBELLUM. 11 (2): 557-563 Sp. Iss. **I.F.: 3.21.**

4 Navarro-Sastre A.; Martin-Hernandez E.; Campos Y.; Quintana E.; Medina E.; Simon de las Heras R.; Lluch M.; Munoz A.; del Hoyo P.; Martin R.; Gort L.; Briones P.; Ribes A. **Lethal hepatopathy and leukodystrophy caused by a novel mutation in MPV17 gene: Description of an alternative MPV17 spliced form (vol 94, pg 234, 2008).** MOLECULAR GENETICS AND METABOLISM. 106: 504-504. **I.F.: 3.19.**

5 Navarro-Sastre A.; Tort F.; Garcia-Villoria J.; Ruiz Pons M.; Nascimento A.; Colomer J.; Campistol J.; Eugenia Y.M.; Lopez-Gallardo E.; Montoya J.; Unceta M.; Martinez M.J.; Briones P.; Ribes A. **Mitochondrial DNA depletion syndrome: New descriptions and the use of citrate synthase as a helpful tool to better characterise the patients.** MOLECULAR GENETICS AND METABOLISM. 107: 409-415. **I.F.: 3.19.**

6 Rodriguez-Pascau L.; Toma C.; Macias-Vidal J.; Cozar M.; Cormand B.; Lykopoulou L.; Coll M.J.; Grinberg D.; Vilageliu Ll. **Characterisation of two deletions involving NPC1 and flanking genes in Niemann-Pick Type C disease patients.** MOLECULAR GENETICS AND METABOLISM. 107: 716-720. **I.F.: 3.19.**

7 Arias A.; Garcia-Villoria J.; Rojo A.; Bujan N.; Briones P.; Ribes A. **Analysis of coenzyme Q(10) in lymphocytes by HPLC-MS/MS.** JOURNAL OF CHROMATOGRAPHY B-ANALYTICAL TECHNOLOGIES IN THE BIOMEDICAL AND LIFE SCIENCES. 908:23-6. **I.F.: 2.89.**

8 Pajares S.; Alcalde C.; Couce M.L.; Del Toro M.; González-Meneses A.; Guillén E.; Pineda M.; Pintos G.; Gort L.; Coll M.J. **Molecular analysis of mucopolysaccharidosis IVA (Morquio A) in Spain.** MOLECULAR GENETICS AND METABOLISM. 106(2): 196-201. **I.F.: 3.19.**

9 Gort L.; Granell M.R.; Fernández G.; Carreto P.; Sanchez A.; Coll M.J. **Fast protocol for the diagnosis of lysosomal diseases in non-immune hydrops fetalis.** PRENAT DIAGN. 32(12):1139-42. **I.F.: 2.11.**

10 Pérez Poyato M.S.; Milá Recansens M.; Ferrer Abizanda I.; Domingo Jiménez R.; López Lafuente A.; Cusí Sánchez V.; Rodriguez-Revenga L.; Coll Rosell M.J.; Gort L.; Póo Argüelles P.; Pineda Marfa M. **Infantile neuronal ceroid lipofuscinosis: follow-up on a Spanish series.** GENE. 499(2):297-302. **I.F.: 2.34.**

11 Gort L.; De Olano N.; Macías-Vidal J.; Coll M.A.; Spanish GM2 Working Group. **GM2 gangliosidoses in Spain: analysis of the HEXA and HEXB genes in 34 Tay-Sachs and 14 Sandhoff patients.** GENE. 506(1):25-30. **I.F.: 2.34.**

12 O'Callaghan M.M.; Emperador S.; López-Gallardo E.; Jou C.; Buján N.; Montero R., Garcia-Cazorla A., Gonzaga D.; Ferrer I.; Briones P.; Ruiz-Pesini E.; Pineda M.; Artuch R.; Montoya J. **New mitochondrial DNA mutations in tRNA associated with three severe encephalopamyopathic phenotypes: neonatal, infantile, and childhood onset.** NEUROGENETICS. 13(3):245-50. **I.F.: 3.35.**

13 Giraldo P.; Alfonso P.; Irún P., Gort L.; Chabás A.; Vilageliu L.; Grinberg D.; Sá Miranda C.M.; Pocovi M. **Mapping the genetic and clinical characteristics of Gaucher disease in the Iberian Peninsula.** ORPHANET J RARE DIS. 7:17. **I.F.: 5.07.**

GRANTS FOR RESEARCH IN PROGRESS

Briones P. **Estudios bioquímicos y mutacionales en pacientes con deficiencias primarias de CoQ. Selección bioquímica de pacientes y análisis de la vía metabólica mediante sustratos marcados con isótopos estables.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI08/0307. Duration: 31/12/2008-30/9/2012.

Ribes A. **Diagnóstico, fisiopatología y tratamiento en la deficiencia cerebral de creatina. Subproyecto 4. Estudios de captación de creatina, con distintos preparados de la misma, en neuronas derivadas de células IPS y en células HUVEC silenciadas con RNA de INTERF.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI09/2128. Duration: 01/01/2010-31/12/2012.

Coll M.J. **Análisis de los mecanismos implicados en la enfermedad de Niemann-Pick tipo C: generación de un modelo murino de la enfermedad y valoración de una nueva aproximación terapéutica mutación dependiente.** Sponsored by: Instituto de Salud Carlos III, PI10/00936. Duration: 01/01/2011-31/12/2013.

Ribes A. **European registry and network for Intoxication type Metabolic Diseases (E-IMD).** Sponsored by: Agència Europea DG-SANCO. Coordinator: Stefan Kölker, A/100886-E-IMD. Duration: 01/01/2011-31/12/2013.

DOCTORAL THESES

Coll M.J.; Bachs O. **Aspectes molleculars de dues malalties de transport lisosòmic: la cistinosi i la malaltia de Niemann-Pick tipus C.** PhD student: Judit Macías Vidal.

Ribes A. **Bases bioquímiques i genètiques de les deplecions de mtDNA i de les alteracions de NFU1.** PhD student: Aleix Navarro Sastre.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	59.95	17	3	8
2011	38.49	8	4	3
2012	44.77	13	2	7

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Genomic Programming of Beta Cells and Diabetes

GROUP MEMBERS

TEAM LEADER
Jorge Ferrer (IDIBAPS/ Imperial College London)
Tel.: 93 227 54 00
E-mail: jferrer@clinic.cat

RESEARCHERS:
Ildem Akerman (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Miguel Angel Maestro (CIBERDEM)
Santiago Rodriguez (IDIBAPS)
Loris Mularoni (Fundació Clínic)
Meritxell Rovira (BIOTRACK)
Marta Batlle (Fundació Clínic)
Inês Cebola (IDIBAPS)
Anthony Beucher (CIBERDEM)
Lorenzo Pasquali (Fundació Clínic)

PRE-DOCTORAL RESEARCHERS:
Myriam Solar (Fundació Clínic)
Ignasi Moran (Fundació Clínic)
Miguel Angel Correa (Marie Curie, IDIBAPS)
Nikolina Nakic (Marie Curie, IDIBAPS)

TECHNICIANS:
Vanessa Grau (CIBERDEM)
Xavier Garcia (CIBERDEM)
Natalia Castro (IDIBAPS)

ADMINISTRATIVE STAFF:
Carme Sanahuja (CIBERDEM)

TEAM INVOLVED IN:
ciberdem
Centro de Investigación Biomédica en Red de Diabetes y Enfermedades Metabólicas Asociadas

STRATEGIC OBJECTIVES

1. Use of genomic tools for establishing the genetic and epigenetic mechanisms that modify the risk of developing diabetes.
2. Identification of pathogenic mechanisms and new therapeutic options for monogenic forms of diabetes.
3. Discovery of new pancreatic regeneration pathways.

MAIN LINES OF RESEARCH

1. Pancreatic regeneration and programming.
2. Epigenomic regulation of beta cells and diabetes.
3. Monogenic diabetes.

PUBLICATIONS

ORIGINALS
I.F.: 27.87

1 Moran I.; Akerman I.; Van de Bunt M.; Xie R.; Benazra M.; Nammo T.; Arnes L.; Nakic N.; Garcia-Hurtado J.; Rodriguez-Segui S.; Pasquali L.; Sauty-Colace C.; Beucher A.; Scharfmann R.; Van Arensbergen J.; Johnson P.R.; Berry A.; Lee C.; Harkins T.; Gmyr V.; Pattou F.; Kerr-Conte J.; Piemonti L.; Berney T.; Hanley N.; Gloyn A.L.; Sussel L.; Langman L.; Brayman K.L.; Sander M.; McCarthy M.I.; Ravassard P.; Ferrer J. **Human beta Cell Transcriptome Analysis Uncovers lncRNAs That Are Tissue-Specific, Dynamically Regulated, and Abnormally Expressed in Type 2 Diabetes.** CELL METABOLISM. 16(4):435-48. **I.F.: 13.67.**

2 Molero X.; Vaquero E.C.; Flandez M.; Gonzalez A.M.; Ortiz M.A.; Cibrian-Uhalte E.; Servitja J.M.; Merlos A.; Juanpere N.; Massumi M.; Skoudy A.; MacDonald R.; Ferrer J.; Real F.X. **Gene expression dynamics after murine pancreatitis unveils novel roles for Hnf1 alpha in acinar cell homeostasis.** GUT. 61 (8): 1187-1196. **I.F.: 10.11.**

3 Swales N.; Martens G.A.; Bonné S.; Heremans Y.; Borup R.; Van de Casteele M.; Ling Z.; Pipeleers D.; Ravassard P.; Nielsen F.; Ferrer J.; Heimberg H. **Plasticity of adult human pancreatic duct cells by neurogenin3-mediated reprogramming.** PLOS ONE. 7(5):e37055. **I.F.: 4.09.**

EDITORIALS
I.F.: 13.07

1 Rodriguez-Segui S.; Akerman I.; Ferrer J. **GATA believe it: new essential regulators of pancreas development.** JOURNAL OF CLINICAL INVESTIGATION. 122(10):3469-71. **I.F.: 13.07.**

GRANTS FOR RESEARCH IN PROGRESS

Ferrer J. **Collaborative European Effort to Develop Diabetes Diagnosis (CEED)** Sponsored by: European Commission 223211. Duration: 1/12/2008-30/11/2012.

Ferrer J. **Biology of Liver and Pancreatic Development and Disease (BOLD)** Sponsored by: European Commission PF7.Marie Curie Integrated Training Network 238821 Duration: 01/09/2009-31/08/2013.

Ferrer J. **Empleo de epigenomas celulares para optimizar la terapia celular a partir de células madre (EPI-BETACELL)** Sponsored by: Ministerio de Ciencia e Innovación PLE2009-0162 Duration: 01/01/2010-01/11/2012.

Ferrer J. **Coordinating Center for Beta Cell Biology Consortium (VUMC 38271) (LINCBETA).** Sponsored by: National Institutes of Health 2U01DK072473-06. Duration: 01/03/2011-28/02/2013.

Ferrer J. **Diabetes Research on Patient Stratification (DIRECT)** Sponsored by: European Commission IMI/115317. Duration: 01/02/2012-31/01/2017.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	64.59	4	4	0
2011	46.59	3	3	0
2012	27.87	3	3	0

Ferrer J. **Integrated Research on Genomics and Pathophysiology of the Metabolic Syndrome and the Diseases arising from it (EPIMETAB)** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/03034. Duration: 01/01/2012-31/12/2014.

Ferrer J. **Regulación epigenética de las células beta y diabetes.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-27086. Duration: 01/01/2012-31/12/2014.

DOCTORAL THESES

Ferrer J. **Plasticity of duct cells in the embryonic and postnatal pancreas.** PhD student: Myriam Solar Abboud.

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

Diabetes: metabolic and molecular networks

TEAM INVOLVED IN: ciberdem

GROUP MEMBERS

TEAM LEADER
Josep Vidal (Hospital Clínic)
Tel.: 93 227 98 46
E-mail: jovidal@clinic.cat

GROUP LEADERS:
Ramon Gomis (Hospital Clínic)
Anna Novials (IDIBAPS)
Pere Santamaria (IDIBAPS)
Josep Vidal (Hospital Clínic)

RESEARCHERS:
Roser Casamitjana (Hospital Clínic)
Ignacio Conget (Hospital Clínic)
Enric Esmatjes (Hospital Clínic)
Rosa Gasa (IDIBAPS)
Marcelina Parrizas (IDIBAPS)
Joan Marc Servitja (IDIBAPS)
Marc Claret (IDIBAPS)
Pablo Miguel García-Roves (IDIBAPS)
Carles Lerin (IDIBAPS)
Antonio Ceriello (IDIBAPS)
Emilio Ortega (Hospital Clínic)
Pau Serra (IDIBAPS)
Alexandra Felicia Hanzu (Hospital Clínic-IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Mercè Martin (IDIBAPS)
Maria Laura Perez (Marie Curie)
Rebeca Fernández (CIBERDEM)
Sandra Rebuffat (CIBERDEM)
Maud Soty (CIBERDEM)
Paola Casini (IDIBAPS)
Sara Cervantes (IDIBAPS)
Rita Malpique (IDIBAPS)
Elena González (CIBERDEM)
Eduardo Fernández (IDIBAPS)
Elaine Vieira (CIBERDEM)
Laura Martinez (IDIBAPS)
Gema Alcarraz (CIBERDEM)
Lucia Lasala (IDIBAPS)
Gemma Pujadas (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Andrea Ruiz Tarrago (IDIBAPS)
Joana Duarte (Fundació Clínic)
Miriam Ejarque (IDIBAPS)
Montse Visa (Fundació Clínic)
Alba Moreno (IDIBAPS)
Katerina Papageorgiou (IDIBAPS)
Silvia Canivell (IDIBAPS)
Lisa Cadavez (IDIBAPS)
Marc Schneeberger (UB)
Marta Pradas (Fundació Clínic)
Mariona Balfego (Fundació Clínic)
Alba González (Fundació Clínic)
Hugo Alves (Fundació Clínic)
Valeria de Nigris (Fundació Clínic)
Ana Lucía Castillo (CONACYT, Gobierno Federal de Méjico)

TECHNICIANS:
Elena Lopez (IDIBAPS)
Cesar Fandos (IDIBAPS)
Carlos Castaño (CIBERDEM)
Yaiza Esteban (CIBERDEM)
Ainhoa García (CIBERDEM)

NURSING STAFF:
Judith Viaplana (IDIBAPS)

DIETIST:
Serafín Murillo (CIBERDEM)

COLLABORATORS:
María José Coves (CIBERDEM)
Marga Gimenez (Hospital Clínic)
Belén Nadal (UB)
Laura Brugnara (CIBERDEM)
Lilliam Flores (Hospital Clínic)
Pere Leyes (Hospital Clínic)
Miriam Mora (Hospital Clínic)
Irene Halperin (Hospital Clínic)
Antonio Jesús Blanco (Hospital Clínic)

STRATEGIC OBJECTIVES

1. Molecular mechanisms regulating plasticity of the islets in diabetes and obesity.
2. Molecular determinants regulating pancreatic beta-cell function: etiopathogenic role in diabetes.
3. Diabetes and obesity as cardiovascular disease.
4. Immunology and type 1 diabetes: pathophysiology and therapeutic approaches.

MAIN LINES OF RESEARCH

1. Analysis of the transcriptional circuits regulating the beta-cell population and its function.
2. Description of the modulating effects of the transcription factors neuroD1 and neurogenin 3 in the embryonic development of the pancreas.
3. Description of the molecular pathways involved in the antiobesity and antidiabetic effects of sodium tungstate in experimental animals.
4. Impact of normal blood glucose upon endothelial dysfunction: use of treatments with insulin pumps.
5. Determination of the role of the hypothalamus in the control of energy homeostasis in obesity.
6. Analysis of the epigenetic regulation of adipogenesis.
7. Genes and molecules in the development and functioning of the immune system.
8. Immunological approach to the treatment of autoimmune diseases.
9. Bariatric surgery and the resolution of metabolic comorbidities in obesity.

RESEARCH GROUP
PANCREATIC ISLETS: BIOMARKERS AND FUNCTION

Group Leader:
Ramon Gomis (IDIBAPS)

The group headed by Dr. Ramon Gomis investigates the physiology of pancreatic islets and adipose tissue, and the causes leading to dysfunction of these tissues. A central aspect of these studies is the determination of the molecular mechanisms implicated in cell mass balance at both embryonic development level and as refers to adult age – with special emphasis on cell regeneration and apoptotic processes.

RESEARCH GROUP
MOLECULAR AND METABOLIC ALTERATIONS IN DIABETES

Group Leader:
Anna Novials (IDIBAPS)

The main line of research of the group headed by Dr. Novials involves the study of the molecular, genetic and environmental factors critical to pancreatic beta-cell dysfunction and destruction in type 2 diabetes.

RESEARCH GROUP
PATHOGENESIS AND TREATMENT OF AUTOIMMUNITY

Group Leader:
Pere Santamaria (IDIBAPS)

Our laboratory has two distinct components: one for purely basic biomedical research which studies the role of particular genes and molecules in the development and functioning of the immune system; and another, more applied, based on the study of the immunological effects of a new therapeutic platform we have developed for the treatment of autoimmune diseases, which include type 1 diabetes, lupus and autoimmune diseases of the central nervous system. This treatment, based on nanotechnology, works by way of an immunological mechanism for protection against autoimmunity designed by mother nature, which we have learned to manipulate by using a new type of drug, also discovered by us. One of our main objectives is to start using this therapeutic platform with patients through the conducting of clinical trials.

RESEARCH GROUP
OBESITY: FROM EXCESS BODY FAT TO METABOLIC COMPLICATIONS

Group Leader:
Josep Vidal (Hospital Clínic)

Our group's main line of research seeks to deepen our understanding of the mechanisms that associate obesity with the onset of metabolic disorders. Bridging clinical and basic research, we look for answers to the question of why certain overweight individuals appear to have a greater protection from developing metabolic disorders than others, as well as what determines inter-individual variability in metabolic response to therapeutic strategies associated with weight loss.

PUBLICATIONS

ORIGINALS
I.F.: 122.59

1 Gimenez M.; Conget I. **Comment on: Gruden et al. Severe Hypoglycemia and Cardiovascular Disease Incidence in Type 1 Diabetes: The EURODIAB Prospective Complications Study. Diabetes Care 2012;35: 1598-1604.** DIABETES CARE. 35: E88-E88. **I.F.: 8.09.**

2 Soriguer F.; Goday A.; Bosch-Comas A.; Bordiu E.; Calle-Pascual A.; Carmena R.; Casamitjana R.; Castano L.; Castell C.; Catala M.; Delgado E.; Franch J.; Gaztambide S.; Girbes J.;Gomis R.; Gutierrez G.; Lopez-Alba A.; Martinez-Larrad M.T.; Menendez E.; Mora-Peces I.; Ortega E.; Pascual-Manich G.; Rojo-Martinez G.; Serrano-Rios M.; Valdes S.; Vazquez J.A.; Vendrell J. **Prevalence of diabetes mellitus and impaired glucose regulation in Spain: the Di@bet.es Study.** DIABETOLOGIA. 55 (1): 88-93. **I.F.: 6.81.**

3 Nair S.; Muller Y.L.; Ortega E.; Kobes S.; Bogardus C.; Baier L.J. **Association Analyses of Variants in the DIO2 Gene with Early-Onset Type 2 Diabetes Mellitus in Pima Indians.** THYROID. 22 (1): 80-87. **I.F.: 4.79.**

4 Barneda-Zahonero B.; Servitja J.M.; Badiola N.; Minano-Molina A.J.; Fado R.; Saura C.A.; Rodriguez-Alvarez J. **Nurr1 Protein Is Required for N-Methyl-D-aspartic Acid (NMDA) Receptor-mediated Neuronal Survival.** JOURNAL OF BIOLOGICAL CHEMISTRY. 287 (14): 11351-11362. **I.F.: 4.77.**

5 Palau N.; Rebuffat S.A.; Altirriba J.; Piquer S.; Hanzu F.A.; Gomis R.; Barbera A. **Role of IGFBP-3 in the Regulation of beta-Cell Mass during Obesity: Adipose Tissue/beta-Cell Cross Talk.** ENDOCRINOLOGY. 153 (1): 177-187. **I.F.: 4.46.**

6 Amigo-Correig M.; Barcelo-Batllori S.; Soria G.; Krezymon A.; Benani A.; Penicaud L.; Tudela R.; Maria Planas A.; Fernandez E.; Carmona M.C.; Gomis R. **Anti-Obesity Sodium Tungstate Treatment Triggers Axonal and Glial Plasticity in Hypothalamic Feeding Centers.** PLOS ONE. 7 (7). **I.F.: 4.09.**

7 Brugnara L.; Vinaixa M.; Murillo S.; Samino S.; Rodriguez M.A.; Beltran A.; Lerin C.; Davison G.; Correig X.; Novials A. **Metabolomics Approach for Analyzing the Effects of Exercise in Subjects with Type 1 Diabetes Mellitus.** PLOS ONE. 7 (7). **I.F.: 4.09.**

8 Soriguer F.; Garcia-Fuentes E.; Gutierrez-Repiso C.; Rojo-Martinez G.; Velasco I.; Goday A.; Bosch-Comas A.; Bordiu E.; Calle A.; Carmena R.; Casamitjana, R.; Castano, L.; Castell C.; Catala M.; Delgado E.; Franch, J.; Gaztambide S.; Girbes, J.; Gomis R.; Gutierrez G.; Lopez-Alba A.; Martinez-Larrad, M. T.; Menendez E.; Mora-Peces, I.; Ortega, E.; Pascual-Manich G.; Serrano-Rios M.; Valdes S.; Vazquez J. A.; Vendrell J. **Iodine intake in the adult population. Di@bet.es study.** CLINICAL NUTRITION. 31: 882-888. **I.F.: 3.73.**

9 Jimenez A.; Omana W.; Flores L.; Coves M.J.; Bellido D.; Perea V.; Vidal J. **Prediction of Whole-Body and Segmental Body Composition by Bioelectrical Impedance in Morbidly Obese Subjects.** OBESITY SURGERY. 22 (4): 587-593 **I.F.: 3.29.**

10 Hanzu F.A.; Gasa R.; Bulur N.; Lybaert P.; Gomis R.; Malaisse W.J.; Beauwens R.; Sener A. **Expression of TMEM16A and SLC4A4 in Human Pancreatic Islets.** CELLULAR PHYSIOLOGY AND BIOCHEMISTRY. 29 (1-2): 61-64. **I.F.: 2.86.**

11 Ceriello A.; Barkai L.; Christiansen J.S.; Czupryniak L.; Gomis R.; Harno K.; Kulzer B.; Ludvigsson J.; Nemethyova Z.; Owens D.; Schnell O.; Tankova T.; Taskinen M.R.; Verges B.; Weitgasser R.; Wens J. **Diabetes as a case study of chronic disease management with a personalized approach: The role of a structured feedback loop.** DIABETES RESEARCH AND CLINICAL PRACTICE. 98: 5-10. **I.F.: 2.75.**

12 Gimenez M.; Lopez J.J.; Castell C.; Conget I. **Hypoglycaemia and cardiovascular disease in Type 1 Diabetes. Results from the Catalan National Public Health registry on insulin pump therapy.** DIABETES RESEARCH AND CLINICAL PRACTICE. 96 (2): E23-E25. **I.F.: 2.75.**

13 Gomis R.; Owens D.R.; Taskinen M.R.; Del Prato S.; Patel S.; Pivovarova A.; Schlosser A.; Woerle H.J. **Long-term safety and efficacy of linagliptin as monotherapy or in combination with other oral glucose-lowering agents in 2121 subjects with type 2 diabetes: up to 2 years exposure in 24-week phase III trials followed by a 78-week open-label extension.** INTERNATIONAL JOURNAL OF CLINICAL PRACTICE. 66 (8): 731-740. **I.F.: 2.41.**

14 Jimenez A.; Casamitjana R.; Flores L.; Viaplana J.; Corcelles R.; Lacy A.; Vidal J. **Long-Term Effects of Sleeve Gastrectomy and Roux-en-Y Gastric Bypass Surgery on Type 2 Diabetes Mellitus in Morbidly Obese Subjects.** ANNALS OF SURGERY. 256: 1023 -1029. **I.F.: 7.49.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	84.13	19	13	1
2011	71.18	18	10	2
2012	122.59	27	21	3

15 Romero F.; Nicolau J.; Flores L.; Casamitjana R.; Ibarzabal A.; Lacy A.; Vidal J. **Comparable early changes in gastrointestinal hormones after sleeve gastrectomy and Roux-En-Y gastric bypass surgery for morbidly obese type 2 diabetic subjects.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (8): 2231-2239. **I.F.: 4.01.**

16 Soriano S.; Alonso-Magdalena P.; Garcia-Arevalo M.; Novials A.; Muhammed S.J.; Salehi A.; Gustafsson J.A.; Quesada I.; Nadal A. **Rapid Insulinotropic Action of Low Doses of Bisphenol-A on Mouse and Human Islets of Langerhans: Role of Estrogen Receptor beta.** PLOS ONE. 7 (2). **I.F.: 4.09.**

17 Casals G.; Ordi J.; Creus M.; Fabregues F.; Carmona F.; Casamitjana R.; Balasch J. **Expression pattern of osteopontin and alpha v beta 3 integrin during the implantation window in infertile patients with early stages of endometriosis.** HUMAN REPRODUCTION. 27 (3): 805-813. **I.F.: 4.47.**

18 Fabregues F.; Iraola A.; Casamitjana R.; Carmona F.; Balasch J. **Human chorionic gonadotrophin stimulation test as a predictor of ovarian response and pregnancy in IVF cycles stimulated with GnRH agonist gonadotrophin treatment: a pilot study.** HUMAN REPRODUCTION. 27 (4): 1122-1129. **I.F.: 4.47.**

19 Erice E.; Llop E.; Berzigotti A.; Abraldes J.G.; Conget I.; Seijo S.; Reverter E.; Albillos A.; Bosch J.; Garcia-Pagan J.C. **Insulin resistance in patients with cirrhosis and portal hypertension.** AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY. 302 (12): G1458-G1465. **I.F.: 3.43.**

20 Ortega E.; Morinigo R.; Flores L.; Moize V.; Rios M.; Lacy A.; Vidal J. **Predictive factors of excess body weight loss 1 year after laparoscopic bariatric surgery.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (6): 1744-1750. **I.F.: 4.01.**

21 Moize V.; Ibarzabal A.; Sanchez Dalmau B.; Flores L.; Andreu A.; Lacy A.; Vidal J. **Nystagmus: An Uncommon Neurological Manifestation of Thiamine Deficiency as a Serious Complication of Sleeve Gastrectomy.** NUTRITION IN CLINICAL PRACTICE. 27: 788-792. **I.F.: 1.59.**

22 Molero X.; Cristina Vaquero E.; Flandez M.; Gonzalez A.M.; Ortiz M.A.; Cibrian-Uhalte E.; Servitja J.M.; Merlos A.; Juanpere N.; Massumi M.; Skoudy A.; MacDonald R.; Ferrer J.; Real F.X. **Gene expression dynamics after murine pancreatitis unveils novel roles for Hnf1 alpha in acinar cell homeostasis.** GUT. 61 (8): 1187-1196. **I.F.: 10.11.**

23 Pardo F.N.; Altirriba J.; Pradas-Juni M.; García A.; Ahlgren U.; Barberà A.; Slebe J.C.; Yáñez A.J.; Gomis R.; Gasa R. **The role of Raf-1 kinase inhibitor protein in the regulation of pancreatic beta cell proliferation in mice.** DIABETOLOGIA. 55(12):3331-40. **I.F.: 6.81.**

24 Marcuello C, Calle-Pascual A.L.; Fuentes M.; Runkle I.; Soriguer F.; Goday A.; Bosch-Comas A.; Bordiú E.; Carmena R.; Casamitjana R.; Castaño L.; Castell C.; Catalá M.; Delgado E.; Franch J.; Gaztambide S.; Girbés J.; Gomis R.; Gutiérrez G.; López-Alba A.; Martínez-Larrad M.T.; Menéndez E.; Mora-Peces I.; Ortega E.; Pascual-Manich G.; Rojo-Martínez G.; Serrano-Rios M.; Valdés S.; Vázquez J.A.; Vendrell J. **Evaluation of Health-Related Quality of Life according to Carbohydrate Metabolism Status: A Spanish Population-Based Study (Di@bet.es Study).** INT J ENDOCRINOL. 2012:872305. **I.F.: 1.87.**

25 Altirriba J.; García A.; Sánchez B.; Haba L.; Altekruse S.; Stratmann T.; Bombí J.A.; Mezquita C.; Gomis R.; Mora C. **The sole presence of CDK4 is not a solid criterion for discriminating between tumor and healthy pancreatictissues.** INT J CANCER. 130(11):2743-5. **I.F.: 5.44.**

26 Ceriello A.; Novials A.; Ortega E.; La Sala L.; Pujadas G.; Testa R.; Bonfigli A.R.; Esposito K.; Giugliano D. **Evidence that hyperglycemia after recovery from hypoglycemia worsens endothelial function and increasesoxidative stress and inflammation in healthy control subjects and subjects with type 1 diabetes.** DIABETES. 61(11):2993-7. **I.F.: 8.29.**

27 Moizé V.; Gluck M.E.; Torres F.; Andreu A.; Vidal J.; Allison K. **Transcultural adaptation of the Night Eating Questionnaire (NEQ) for its use ini the Spanish population.** EATING BEHAVIORS . 13(3):260-3. **I.F.: 1.58.**

GRANTS FOR RESEARCH IN PROGRESS

Vidal J. **Estudi aleatoritzat prospectiu sobre els efectes del tractament mèdic intensiu amb o sense bypass gàstric en Y de Roux, sobre el gruix de la íntima mitja carotídea en malalts amb obesitat grau I.** Sponsored by: AATRM 401/17/2008. Duration: 01/12/2009-30/11/2012.

Vidal J. **GLP-1 y resolución a largo plazo de diabetes mellitus tipo 2 tras cirugía bariátrica.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00892. Duration: 01/01/2012-31/12/2014.

Vidal J. **GLP-1 y resolución tras el bypass gástrico de la diabetes tipo 2 asociada a obesidad.** Sponsored by: Fundación Mútua Madrileña AP62572009. Duration: 03/08/2009-31/01/2012.

Parrizas M.P. **Regulación epigenética de la diferenciación.** Sponsored by: Ministerio de Economía y Competitividad BFU2006-14251. Duration: 01/10/2006-31/03/2012.

Parrizas M.P. **Papel de la demetilasa de histonas LSD1 en la adipogénesis.** Sponsored by: Ministerio de Economía y Competitividad BFU2009-09988. Duration: 01/01/2010-31/12/2013.

Gomis R. **Diabetis experimental, investigació cel·lular i molecular en models de diabetis experimental.** Sponsored by: AGAUR, Ajuts de suport als grups de recerca de Catalunya (SGR), 2009 SGR 1426. Duration: 01/01/2009-31/12/2013.

Gomis R. **Determinantes moleculares de la plasticidad de la célula beta en diabetes: efectos del tungstato sódico.** Sponsored by: Ministerio de Ciencia e Innovación, SAF2010-19527, Duration: 01/01/2011-31/12/2013.

Gomis R. **FOOD FOR LIFE-Supporting Healthy Lifestyles in the Mediterranean Area.** Sponsored by: Marie Curie Actions - International Research Staff Exchange Scheme, FP7- PEOPLE - IRSES - 2008. Duration: 01/01/2009-31/12/2013.

Gomis R. **ADIBET - The role of adipose tissue in obesity: beta cell crosstalk.** Sponsored by: European Commission - Marie Curie Actions PIAP-GA-2008-218130. Duration: 01/06/2008-31/05/2012.

Servitja JM. **Epigenetic control of gene expression in pancreatic islets.** Sponsored by: EUROPEAN FOUNDATION FOR THE STUDY OF DIABETES, EFSD/LILLY_10_001. Duration: 08/05/2010-07/11/2012.

Claret M. **Role of hypothalamic mitochondrial fusion in appetite and body weight control: potential therapeutic target for the treatment of obesity.** Sponsored by: ASSOC CAT UNIVERSITATS PUBLIQUES 2010ACUP_00275. Duration: 01/12/2010-30/12/2013.

Claret M. **MicroRNAs hipotalámicos y regulación del metabolismo energético: posibles dianas terapéuticas para el tratamiento de la obesidad y la diabetes.** Sponsored by: Instituto de Salud Carlos III, PI10/01074 Duration: 01/01/2011-31/12/2013.

Claret M. **Role of miRNAs in hypothalamic populations of neurons upon energy and glucose homeostasis: potential targets for obesity and diabetes treatment.** Sponsored by: Instituto de Salud Carlos III, CP09/00233. Duration: 20/01/2010-19/01/2016.

Ceriello A. **Defective antioxidante response in endotelial cells exponed to oscillating glucose: the role of Nrf2.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI10/01256. Duration: 01/01/2011-31/12/2013.

Servitja J.M. **Regulación y función de microRNAs en el islote pancreático.** Sponsored by: Ministerio de Ciencia e Innovación, BFU2010-17639. Duration: 01/01/2011-31/12/2013.

Lerin C. **Molecular mechanisms underlaying the development of insulina resistance: role of betaine supplementation.** Sponsored by: European Commission, DG Research and Innovation, PCIG-GA-2011-293502. Duration: 01/09/2011-31/08/2015.

Lerin C. **Unraveling novel molecular mechanisms underlying the development of insulin resistance.** Sponsored by: EFSD / Lilly European Diabetes Research Programme. Duration: 01/01/2012 – 31/12/ 2013.

Lerin C. **Metabolic and Biochemical Effects of Betaine on Insulin Sensitivity and Exercise Performance.** Sponsored by: Ministerio de Ciencia e Innovación – MICINN, SAF2011-28502 Duration: 01/01/2012 - 31/12/ 2014.

Novials A. **Implicación del enzima BACE2 en el mecanismo por el cual el péptido pancreático humano IAPP induce alteraciones de la célula β-pancreática en la diabetes del tipo 2.** Sponsored by: Instituto de Salud Carlos III Ministerio de Ciencia e Innovación, PI11/00679. Duration: 01/01/2012 - 31/12/2014.

Novials A. **Seminars on Current Trends in Diabetes and Obesity Research 2011-2012.** Sponsored by: AGAUR, Generalitat de Catalunya, 2011 ARCS1 00063. Duration: 01/08/2011 – 31/07/2012.

García-Roves P. **Deciphering the integrative response for the reversal of hyperglycemia in type 2 diabetic mice after a lifestyle intervention.** Sponsored by: Ministerio de Economía y Competitividad, BFU2011-24679. Duration: 01/01/2012 - 31/12/2014.

Serra P. **The role of epithelial V-like antigen1 (EVA1) in T-cell development.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-22458 Duration: 01/01/2012 – 31/12/2014.

Santamaria P. **The role of autophagy in central tolerance and peripheral activation of diabetogenic T-cells.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-23317 Duration: 01/01/2012 – 31/12/2014.

Ortega E. **Riesgo cardiovascular en sujetos con diabetes tipo 2 (DM2) de reciente diagnóstico: grosor de íntima media (GIMC) y presencia de placa carotídea (PC) como discriminador de riesgo cardiovascular al diagnóstico y tras tratamiento de la enfermedad.** Sponsored by: Instituto de Salud Carlos III. PI11/01723 Duration: 01/01/2012 – 31/12/2014.

DOCTORAL THESES

Conget I. **Sistemas de infusión subcutánea continua de insulina y de monitorización continua de la glucosa en la diabetes de tipo 1. Perfil de riesgo cardiovascular de los pacientes con control lábil por hipoglucemias recurrentes y graves.** PhD student: Margarita Giménez Álvarez.

Gasa R. **El paper del factor de transcripció MATH6 en la diferenciació pancreàtica.** PhD student: Miriam Ejarque Carbó.

Gasa R.; Gomis R. **Relació entre neurogenina 3 i la via de senyalització wnt en la formació de les cèl·lules beta del pàncreas.** PhD student: Gemma Pujadas Rovira.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

NEUROPHARMACOLOGY AND EXPERIMENTAL NEUROPATHOLOGY 218

BRAIN ISCHEMIA: CLINICAL AND EXPERIMENTAL STUDIES 223

NEURODEGENERATIVE DISEASES: CLINICAL AND EXPERIMENTAL RESEARCH 226

NEUROPHYSIOLOGY AND FUNCTIONAL STUDIES OF THE NERVOUS SYSTEM 232

MUSCLE RESEARCH AND MITOCHONDRIAL FUNCTION 236

CELLULAR BIOLOGY OF PATHOLOGICAL PROCESSES 239

BIOLOGICAL BASES OF PSYCHIATRIC DISORDERS AND NUCLEAR PSYCHIATRY 242

NEUROPSYCHOLOGY 255

SYSTEMS NEUROSCIENCE 259

CLINICAL AND EXPERIMENTAL NEUROIMMUNOLOGY 264

NEUROBIOLOGY UNIT 269

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neuropharmacology and experimental neuropathology

TEAM INVOLVED IN: CIBERNED & CIBERESP

GROUP MEMBERS

TEAM LEADER
Guadalupe Mengod (IIBB-CSIC)
Tel.: 93 363 83 23
E-mail: gmlnqr@iibb.csic.es

GROUP LEADERS:
Francesc Artigas (IIBB-CSIC)
Cristina Suñol (IIBB-CSIC)
Sebastià Pons (IIBB-CSIC)
Josep Saura (UB)
Guadalupe Mengod (IIBB-CSIC)

RESEARCHERS:
Albert Adell (IIBB-CSIC)
Analia Bortolozzi (IDIBAPS)
Anna Castañé (IIBB-CSIC)
Pau Celada (IDIBAPS)
Roser Cortés (IIBB-CSIC)
Rosa Cristòfol (IIBB-CSIC)
Eduard Rodriguez Farré (IIBB-CSIC)
Coral Sanfeliu (IIBB-CSIC)
Joan Serratosa (IIBB-CSIC)
Carme Solà (IIBB-CSIC)
Josep Maria Tusell (IIBB-CSIC)
Mª Teresa Vilaró (IIBB-CSIC)

PRE-DOCTORAL RESEARCHERS:
Elena Álvarez (Conacyt, Mexico)
Alessandra Antunes dos Santos (CNPq, Brasil)
Xabier Freire Gómez (JAE Intro, CSIC)
Emily Johansson (FPI-CSIC)
Marco Straccia (I3P-CSIC)
Anna García-Miralles (FPI-IDIBAPS)
Giuseppe Mocci (JAE-CSIC)
Susana Revilla (FPU-MICINN)
Eva Troyano (FPI-CSIC)
Aina Palou (FPI-IDIBAPS)
Antonio Herrera-Camacho (FPI-IDIBAPS)
Guido Dentesano (FPI-IDIBAPS)
Núria Paúl Fernández (IIBB-CSIC)
Laura Jiménez (IDIBAPS)
Maurizio Riga (IDIBAPS)
Albert Ferrés (IDIBAPS)
Patricia Molina (IIBB-CISC)
Marta Pulido (FPU)
Luana Queiroz (CAPES, Brasil)
Ananda M. Rodilla Martín (Master UB)
Blanca Torroba (FPI)
Marta Valle León (Master UB)
Laura Vuolo (JAE, CSIC)

TECHNICIANS:
Mireia Galofré (IDIBAPS)
Leticia Campa (IIBB-CSIC)
Rocío Martín-Álvarez (CIBERNED)
Anghara Menéndez (IDIBAPS)
Albert Parull (IIBB-CSIC)
Verónica Paz (CIBERSAM)
Silvia Serrano (CIBERNED)
Noemí Jurado (IIBB-CSIC)
Irene Porcar (IIBB-CSIC)
Rosario Ruiz (UB)
Rubén Corpas (IIBB-CSIC)
Mercedes Nuñez (IIBB-CSIC)
Esther Ruíz (IDIBAPS)

ADMINISTRATIVE STAFF:
María Jaramillo (CIBERSAM)

COLLABORATORS:
Laia Lladó (IIBB-CSIC)
Noemí Santana (CIBERSAM)
Tony Valente (IDIBAPS)
Nair Olguin (IIBB-CSIC)
Mathieu Lichtenstein (IIBB-CSIC)

STRATEGIC OBJECTIVES

Furthering of knowledge of the physiopathological mechanisms of neurological and psychiatric diseases and neurotoxic and aging processes of the central nervous system, with a view to identifying new cellular and functional targets and proposing new treatments.

RESEARCH GROUP
SYSTEMS NEUROPHARMACOLOGY GROUP

Group Leader: Francesc Artigas (IIBB-CSIC)

The group studies the neuronal circuits implicated in the physiopathology and treatment of depression and schizophrenia. Special emphasis is placed on the prefrontal cortex and anatomically and functionally related areas. It also explores chemical neurotransmission processes and physiology in animal models of mental disease, with a view to identifying new therapeutic targets.

RESEARCH GROUP
NEUROTOXICITY AND NEURODEGENERATION MECHANISMS GROUP

Group Leader: Cristina Suñol (IIBB-CSIC)

The group carries out studies on nerve cell death, oxidative stress, synaptic functions, genomics and proteomics, for the determination of altered targets in toxicity and aging processes of the central nervous system in vivo and in vitro. It also focuses on neuroprotective strategies and the development of in vitro methods for predicting neurotoxicity.

RESEARCH GROUP
MOLECULAR NEUROPHARMACOLOGY GROUP

Group Leader: Guadalupe Mengod (IIBB-CSIC)

The group studies neurotransmission and its anatomical, cellular and molecular aspects implicated in neurodegenerative disorders with an inflammatory component. The objective is to identify and characterize new targets for therapeutic action.

RESEARCH GROUP
CELLULAR NEUROBIOLOGY GROUP

Group Leader: Josep Saura (UB)

We study the implication of C/EBP transcription factors and of neuronal-microglial communication molecules (CD200, CD200R, TREM) in glial activation and in the associated neurotoxicity. We conduct studies using experimental animals, primary cell cultures (mixed glial, astroglial and microglial-enriched, neuronal, mixed neuron-glial) and cell lines.

RESEARCH GROUP
CNEURONAL PROLIFERATION CONTROL GROUP

Group Leader: Sebastián Pons (IIBB-CSIC)

The main goal of our group is to study the mechanisms controlling the proliferation of neuronal precursors during both normal development and in neoplastic growth. In particular, our research is focused on the molecular and cellular anomalies that contribute to Medulloblastoma. We use in ovo (chicken) and in utero (mouse) electroporation systems to alter Hedgehog and Wnt pathways in order to study the cellular events occurring during the initial steps of Medulloblastoma formation.

PUBLICATIONS

ORIGINALS
I.F.: 138.08

1 Bortolozzi A.; Castane A.; Semakova J.; Santana N.; Alvarado G.; Cortes R.; Ferres-Coy A.; Fernandez G.; Carmona M.C.; Toth M.; Perales J.C.; Montefeltro A.; Artigas F. **Selective siRNA-mediated suppression of 5-HT1A autoreceptors evokes strong anti-depressant-like effects.** MOLECULAR PSYCHIATRY. 17 (6): 612-623. **I.F.: 13.67.**

2 Rabadan M.A.; Cayuso J.; Le Dreau G.; Cruz C.; Barzi M.; Pons S.; Briscoe J.; Marti E. **Jagged2 controls the generation of motor neuron and oligodendrocyte progenitors in the ventral spinal cord.** CELL DEATH AND DIFFERENTIATION. 19 (2): 209-219. **I.F.: 8.85.**

3 Kargieman L.; Riga M.S.; Artigas F.; Celada P. **Clozapine Reverses Phencyclidine-Induced Desynchronization of Prefrontal Cortex through a 5-HT(1A) Receptor-Dependent Mechanism.** NEUROPSYCHOPHARMACOLOGY. 37(3):723-33. **I.F.: 7.99.**

4 Llado-Pelfort L.; Santana N.; Ghisi V.; Artigas F.; Celada P. **5-HT1A Receptor Agonists Enhance Pyramidal Cell Firing in Prefrontal Cortex Through a Preferential Action on GABA Interneurons.** CEREBRAL CORTEX. 22 (7): 1487-1497. **I.F.: 6.54.**

5 Garcia-Mesa Y.; Gimenez-Llort L.; Lopez L.C.; Venegas C.; Cristofol R.; Escames G.; Acuna-Castroviejo D.; Sanfeliu C. **Melatonin plus physical exercise are highly neuroprotective in the 3xTg-AD mouse.** NEUROBIOLOGY OF AGING. 33(6):1124.e13-29. **I.F.: 6.19.**

6 Lopez-Ramos J.C.; Jurado-Parras M.T.; Sanfeliu C.; Acuna-Castroviejo D.; Delgado-Garcia J.M. **Learning capabilities and CA1-prefrontal synaptic plasticity in a mice model of accelerated senescence.** NEUROBIOLOGY OF AGING. 33(3):627.e13-26. **I.F.: 6.19.**

7 Cristofol R.; Porquet D.; Corpas R.; Coto-Montes A.; Serret J.; Camins A.; Pallas M.; Sanfeliu C. **Neurons from senescence-accelerated SAMP8 mice are protected against frailty by the sirtuin 1 promoting agents melatonin and resveratrol.** JOURNAL OF PINEAL RESEARCH. 52 (3): 271-281. **I.F.: 5.79.**

8 Redondo M.; Brea J.; Perez D.I.; Soteras I.; Val C.; Perez C.; Morales-Garcia J.A.; Alonso-Gil S.; Paul-Fernandez N.; Martin-Alvarez R.; Cadavid M.I.; Loza M.I.; Perez-Castillo A.; Mengod G.; Campillo N.E.; Martinez A.; Gil C. **Effect of Phosphodiesterase 7 (PDE7) Inhibitors in Experimental Autoimmune Encephalomyelitis Mice. Discovery of a New Chemically Diverse Family of Compounds.** JOURNAL OF MEDICINAL CHEMISTRY. 55 (7): 3274-3284. **I.F.: 5.25.**

9 Johansson E.M.; Sanabra C.; Mengod G. **Sex-related differences of cAMP-specific PDE4B3 mRNA in oligodendrocytes following systemic inflammation.** GLIA. 60(12):1815-25. **I.F.: 4.82.**

10 Masana M.; Castane A.; Santana N.; Bortolozzi A.; Artigas F. **Noradrenergic antidepressants increase cortical dopamine: potential use in augmentation strategies.** NEUROPHARMACOLOGY. 63(4):675-84. **I.F.: 4.81.**

11 Alvarez E.; Perez V.; Dragheim M.; Loft H.; Artigas F. **A double-blind, randomized, placebo-controlled, active reference study of Lu AA21004 in patients with major depressive disorder.** INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY. 15(5):589-600. **I.F.: 4.58.**

12 Lopez-Gil X.; Jimenez-Sanchez L.; Romon T.; Campa L.; Artigas F.; Adella A. **Importance of inter-hemispheric prefrontal connection in the effects of non-competitive NMDA receptor antagonists.** INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY. 15(7):945-56. **I.F.: 4.58.**

13 Puigdemont D.; Perez-Egea R.; Portella M.J. M.J.; Molet J.; De Diego-Adelino J.; Gironell A.; Radua J.; Gomez-Anson B.; Rodriguez R.; Serra M.; De Quintana C.; Artigas F.; Alvarez E.; Perez V. **Deep brain stimulation of the subcallosal cingulate gyrus: further evidence in treatment-resistant major depression.** INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY. 15 (1): 121-133. **I.F.: 4.58.**

14 Briz V.; Parkash J.; Sanchez-Redondo S.; Prevot V.; Suñol C. **Allopregnanolone prevents dieldrin-induced NMDA receptor internalization and neurotoxicity by preserving GABA(A) receptor function.** ENDOCRINOLOGY. 153(2):847-60. **I.F.: 4.46.**

15 Scorza M.C.; Llado-Pelfort L.; Oller S.; Cortés R.; Puigdemont D.; Portella M.J.; Perez-Egea R.; Alvarez E.; Celada P.; Perez V.; Artigas F. **Preclinical and clinical characterization of the selective 5-HT(1A) receptor antagonist DU-125530 for antidepressant treatment.** BRITISH JOURNAL OF PHARMACOLOGY. 167(5):1021-34. **I.F.: 4.41.**

16 Llado-Pelfort L.; Assie M.B.; Newman-Tancredi A.; Artigas F.; Celada P. **In vivo electrophysiological and neurochemical effects of the selective 5-HT1A receptor agonist, F13640, at pre- and**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	105.96	26	16	7
2011	68.14	15	9	2
2012	138.08	27	22	4

postsynaptic 5-HT1A receptors in the rat. PSYCHOPHARMACOLOGY. 221 (2): 261-272. **I.F.: 4.08.**

17 Moreno M.; Gutierrez-Ferre V.E.; Ruedas L.; Campa L.; Suñol C.; Flores P. **Poor inhibitory control and neurochemical differences in high compulsive drinker rats selected by schedule-induced polydipsia.** PSYCHOPHARMACOLOGY. 219(2):661-72. **I.F.: 4.08.**

18 Dentesano G.; Straccia M.; Jarque-Ortiz A.; Tusell J.M.; Serratosa J.; Saura J.; Sola C. **Inhibition of CD200R1 expression by C/EBP beta in reactive microglial cells.** JOURNAL OF NEUROINFLAMMATION. 9: 165. **I.F.: 3.83.**

19 Redondo M.; Palomo V.; Brea J.; Perez D.I.; Martin-Alvarez R.; Perez C.; Paul-Fernandez N.; Conde S.; Cadavid M.I.; Loza M.I.; Mengod G.; Martinez A.; Gil C.; Campillo N.E. **Identification in silico and experimental validation of novel phosphodiesterase 7 inhibitors with efficacy in experimental autoimmune encephalomyelitis mice.** ACS CHEMICAL NEUROSCIENCE. 3(10):793-803. **I.F.: 3.68.**

20 Morales-Mulia M.; Estrada-Camarena E.; Amaya M.I.; Mejia-Mauries S.; Sollozo-Dupont I.; Mengod G.; De Gortari P. **Anxiolytic effects of ethanol are partially related to a reduced expression of adenylyl cyclase 5 but not to μ-opioid receptor activation in rat nucleus accumbens.** BEHAVIOURAL BRAIN RESEARCH. 235(2):189-94. **I.F.: 3.42.**

21 Then S.M.; Sanfeliu C.; Top G.M.; Ngah W.Z.W.; Mazlan M. **gamma-Tocotrienol does not substantially protect DS neurons from hydrogen peroxide-induced oxidative injury.** NUTRITION & METABOLISM. 9. **I.F.: 2.88.**

22 Rivera F.; Fulladosa X.; Poveda R.; Frutos M.A.; Garcia-Frias P.; Ara J.; Illescas L.; Lopez-Rubio E.; Merida E.; Carreno A.; Ballarin J.; Fernandez-Juarez G.; Baltar J.; Ramos C.; Pons S.; Oliet A.; Vigil A.; Praga M.; Segarra A. **Mycophenolate as Induction Therapy in Lupus Nephritis with Renal Function Impairment.** AMERICAN JOURNAL OF NEPHROLOGY. 35 (5): 424-433 2012. **I.F.: 2.54.**

23 Johansson E.M.; Reyes-Irisarri E.; Mengod G. **Comparison of cAMP-specific phosphodiesterase mRNAs distribution in mouse and rat brain.** NEUROSCIENCE LETTERS. 525(1):1-6. **I.F.: 2.10.**

24 Pineda D.; Ampurdanes C.; Medina M.G.; Serratosa J.; Tusell J.M.; Saura J.; Planas A.M.; Navarro P. **Tissue plasminogen activator induces microglial inflammation via a noncatalytic molecular mechanism involving activation of mitogen-activated protein kinases and Akt signaling pathways and AnnexinA2 and Galectin-1 receptors.** GLIA. 60 (4): 526-540. **I.F.: 4.82.**

25 Mannara F.; Valente T.; Saura J.; Graus F.; Saiz A.; Moreno B. **Passive Experimental Autoimmune Encephalomyelitis in C57BL/6 with MOG: Evidence of Involvement of B Cells.** PLOS ONE. 7: e52361. **I.F.: 4.09.**

26 Valente T.; Mancera P.; Tusell J.M.; Serratosa J.; Saura J. **C/EBPβ expression in activated microglia in amyotrophic lateral sclerosis.** NEUROBIOL AGING. 33(9):2186-99. **I.F.: 6.19.**

27 Gresa-Arribas N.; Viéitez C.; Dentesano G.; Serratosa J.; Saura J.; Solà C. **Modelling neuroinflammation in vitro: a tool to test the potential neuroprotective effect of anti-inflammatory agents.** PLOS ONE. 7(9):e45227. **I.F.: 4.09.**

REVIEWS
I.F.: 16.07

1 Adell A.; Jiménez-Sánchez L.; López-Gil X.; Romón T. **Is the acute NMDA receptor hypofunction a valid model of schizophrenia?** SCHIZOPHRENIA BULL. 38(1):9-14. **I.F.: 8.80.**

2 Masana M.; Santana N.; Artigas F.; Bortolozzi A. **Dopamine Neurotransmission and Atypical Antipsychotics in Prefrontal Cortex: A Critical Review.** CURRENT TOPICS IN MEDICINAL CHEMISTRY. 12(21):2357-74. **I.F.: 4.17.**

3 Llorens J.; Li A.A.; Ceccatelli S.; Sunol C. **Strategies and tools for preventing neurotoxicity: to test, to predict and how to do it.** NEUROTOXICOLOGY. 33(4):796-804. **I.F.: 3.10.**

GRANTS FOR RESEARCH IN PROGRESS

Celada M.P. **Actividad cortical y alucinaciones. Nuevo modelo experimental para la identificación de dianas terapeuticas en esquizofrenia.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1245. Duration: 01/01/2010-30/06/2013.

Artigas F. **Grup de Recerca Consolidat, Neuroquímica i Neurofarmacologia.** Sponsored by: Generalitat de Catalunya, 2009SGR220. Duration: 01/01/2009-31/12/2013.

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neuropharmacology and experimental neuropathology

Artigas F. **Novel Methods leading to New Medications in Depression and Schizophrenia (NEWMEDS).** Sponsored by: IMI JU, (European Commission and EFPIA), Grant Agreement N° 115008. Duration: 01/09/2009-31/08/2014.

Cortés R. **Expresión de marcadores neuronales en demencias: enfermedad de los granos argirófilos y Alzheimer.** Sponsored by: MICINN - Instituto de Salud Carlos III, PS09/01087. Duration: 01/01/2010-31/12/2013.

Sanfeliu C. **Implicación de la sirtuina 1 en procesos neurodegenerativos.** Sponsored by: MICINN, SAF200913093-C02-02. Duration: 01/01/2010-31/12/2012.

Bortolozzi A.; Artigas F. **DENDRIA -Modulación de los genes asociados al sistema serotonérgico con moléculas RNA antisentido (siRNA) y su efecto en modelo.** Sponsored by: nLife Therapeutics S.L., CDTI 10/166. Duration: 01/07/2010-31/12/2013.

Sanfeliu C. **Disfunción cerebral durante el envejecimiento: relevancia para la enfermedad de Alzheimer (BrainAge).** Sponsored by: MICINN, CSD2010-00045. Duration: 27/12/2010-26/12/2015.

Vilaró M.T. **Efecto de la activación de receptores 5-HT4 de serotonina sobre la deposición del péptido amiloide Aß, en un ratón triple transgénico de la enfermedad de Alzheimer.** Sponsored by: MICINN - Instituto de Salud Carlos III, PS09/00468. Duration: 01/01/2010-31/12/2013.

Adell A. **Papel de la corteza prefrontal en la fisiopatología y tratamiento de la depresión y esquizofrenia. Estudio con modelos animales.** Sponsored by: Instituto de Salud Carlos III, PI10/01103. Duration: 01/01/2011-31/12/2013.

Bortolozzi A. **Papel de los canales de potasio-K+ en el mecanismo de acción de los fármacos antidepresivos. Relevancia del canal TREK-1 y su relación con el receptor de serotonina 1A.** Sponsored by: Instituto de Salud Carlos III, PI10/00290. Duration: 01/01/2011-31/12/2013.

Castañé A. **Metabotropic glutamate receptors 2/3 (mGluR2/3) as drug targets to improve cognitive impairment in schizophrenia.** Sponsored by: Instituto de Salud Carlos III, 11INT4. Duration: 01/01/2011-31/12/2012.

Mengod G. **El papel de las fosfodiesterasas del AMPc en la evolución y tratamiento de la esclerosis múltiple en el modelo de EAE en ratón. Nuevas aproximaciones terapéuticas.** Sponsored by: MICINN - Instituto de Salud Carlos III, PI10/01874. Duration: 01/01/2011-31/12/2014.

Saura J. **Efecto antiinflamatorio y neuroprotector de la inhibición de C/EBPβ y C/EBPβ en un modelo animal de esclerosis múltiple.** Sponsored by: Instituto de Salud Carlos III, PI10/378. Duration: 01/01/2011-31/12/2013.

Suñol C. **Estudio de mecanismos de neurotoxicidad crónica de contaminantes tóxicos: papel de los receptores GABA-A, de glutamato y de estrógenos. Posibles intervenciones terapéuticas.** Sponsored by: MICINN - Instituto de Salud Carlos III, PS10/00453. Duration: 01/01/2011-31/12/2013.

Celada M.P. **Apoyo tecnológico referente al proyecto: "Caracterizar la actividad oscilatoria cortical en ratones transgénicos PKEHUM0801 y su afectación por el antipsicótico clozpina.** Sponsored by: Ministerio de Economía y Competitividad, BRAINco Biopharma, CENIT10 10/156. Duration: 18/05/2010-31/12/2013.

Suñol C. **Nano-structured Electroactive Materials for Electrodes in Central Nervous System (CNS) stimulation and repair.** La Marató de TV3, 110131. Duration: 01/01/2012 – 31/12/2014.

Solà C. **Modulació de l'activitat dels receptors immunitaris: nova estratègia terapèutica per al dany agut al SNC.** Sponsored by: Fundació Marató-TV3. Duration 01/01/2012-31/12/2014.

Pons S. **Mecanismos de control de la proliferación y la diferenciación celular durante el desarrollo del sistema nervioso.** Sponsored by: Ministerio de Economía y Competitividad BFU2011-24099. Duration: 01/01/2012-31/12/2014.

Rodríguez Farré E. **Grup de Recerca Consolidat, Farmacologia i Toxicologia.** Sponsored by: Generalitat de Catalunya, 2009SGR214. Duration: 01/01/2009-31/12/2013.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Brain ischemia: Clinical and experimental studies

GROUP MEMBERS

TEAM LEADER
Ángel Chamorro (Hospital Clínic)
Tel.: 93 227 54 14
E-mail: achamorro@clinic.cat

RESEARCHERS:
Anna M. Planas (IIBB-CSIC)
Tomàs Santalucia (IDIBAPS)
Lluïsa Camón (IIBB-CSIC)
Núria de Vera (IIBB-CSIC)
Emili Martínez (IIBB-CSIC)
Esther Pozas (Ramón y Cajal, IDIBAPS)
Carles Justicia (IIBB-CSIC)
Álvaro Cervera (Hospital Clínic)
Valérie Petegnief (IIBB-CSIC)
Sergi Amaro (Hospital Clínic)
Xabier Urra (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Isabel Pérez de Puig (IDIBAPS)
Xavier de la Rosa Siles (CSIC)
Ester Bonfill (IIBB-CSIC, beca FPU)
Angélica Salas (IDIBAPS)
Maura Ferrer (IDIBAPS)

TECHNICIANS:
Francisca Ruiz (IDIBAPS)
Leonardo J. Márquez (IIBB-CSIC)
Ana Guerrero (IDIBAPS)

NURSING STAFF:
Elisabet González (Hospital Clínic)

COLLABORATORS:
Víctor Obach (Hospital Clínic)
Martha Vargas (Fundació Clínic)
Francesc Miró (IDIBAPS)
Guadalupe Soria (IDIBAPS)
Vanessa Brait (IIBB-CSIC)

STRATEGIC OBJECTIVES

Study of cerebrovascular pathology from the clinical and basic perspective, with special emphasis on inflammation and immune response, and oxidative stress, as well as on the use of neuroimaging techniques. The ultimate aim is to develop therapeutic strategies in application to stroke.

MAIN LINES OF RESEARCH

Inflammation and immunity in stroke:

- Immunological mechanisms implicated in the progression of ischemic stroke and in the appearance of infectious complications. Study of inflammatory and innate immune responses in stroke. Genetic aspects of immune response. Studies of the lectin pathway.
- Study of brain-derived antigens in secondary lymphoid organs and its involvement in brain damage after stroke.
- Relevance of adaptive immune responses in stroke outcome.

Multimodal neuroimaging in Stroke:

- Neuroimaging in brain ischemia: application of magnetic resonance (MR), CT or optical imaging techniques for the in vivo noninvasive monitorization of patients and experimental animals in relation to anatomical and functional parameters of brain damage – including immune response. Application in the vascular dementia model and the studies of functional recovery after stroke.

Neuroprotection:

- Identification of new antioxidant treatments in stroke. Preclinical studies of the protective effects of these treatments and of the mechanisms involved. Design and conduction of a phase IIb study involving the administration of uric acid in stroke treated with rtPA.
- Use of intraarterial rescue treatments with rtPA in patients previously treated with intravenous rtPA and selected by multimodal imaging techniques.
- Neurological repair and neurogenesis in brain ischemia: effect of inflammation upon neurogenesis; experimental functional MRI.

Clinical trials:

- Combination of thrombolysis with antioxidants (uric acid).

PUBLICATIONS

ORIGINALS
I.F.: 51.04

1 Marquez-Martin A.; Jimenez-Altayo F.; Dantas A.P.; Caracuel L.; Planas A.M.; Vila E. **Middle cerebral artery alterations in a rat chronic hypoperfusion model.** JOURNAL OF APPLIED PHYSIOLOGY. 112 (3): 511-518. **I.F.: 3.75.**

2 San Roman L.; Obach V.; Blasco J.; Macho J.; Lopez A.; Urra X.; Tomasello A.; Cervera A.; Amaro S.; Perandreu J.; Branera J.; Capurro S.; Oleaga L.; Chamorro A. **Single-Center Experience of Cerebral Artery Thrombectomy Using the TREVO Device in 60 Patients With Acute Ischemic Stroke.** STROKE. 43 (6): 1657. **I.F.: 5.73.**

3 Van Camp N.; Blockx I.; Camon L.; De Vera N.; Verhoye M.; Veraart J.; Van Hecke W.; Martinez E.; Soria G.; Sijbers J.; Planas A.M.; Van Der Linden A. **A complementary diffusion tensor imaging (DTI)-histological study in a model of Huntington's disease.** NEUROBIOLOGY OF AGING. 33 (5): 945-959. **I.F.: 6.19.**

4 Perez-de-Puig I.; Miro F.; Ferrer M.; Urra X.; Chamorro A.; Planas A.M. **Changes in subpopulations of circulating monocytes correlate with infarct volume after permanent middle cerebral artery occlusion in mice.** STROKE. 43: E118-E118. **I.F.: 5.73.**

5 Font-Nieves M.; Sans-Fons M.G.; Gorina R.; Bonfill-Teixidor E.; Salas-Perdomo A.; Marquez-Kisinousky L.; Santalucia T.; Planas A.M. **Induction of COX-2 Enzyme and Down-regulation of COX-1 Expression by Lipopolysaccharide (LPS) Control Prostaglandin E-2 Production in Astrocytes.** JOURNAL OF BIOLOGICAL CHEMISTRY. 287 (9): 6454-6468. **I.F.: 4.77.**

6 Amaro S.; Chamorro A. **Progress in cerebrovascular disease research in the last year.** JOURNAL OF NEUROLOGY. 259 (2): 391-394. **I.F.: 3.47.**

7 Planas A.M.; Gomez-Choco M.; Urra X.; Gorina R.; Caballero M.; Chamorro A. **Brain-Derived Antigens in Lymphoid Tissue of Patients with Acute Stroke.** JOURNAL OF IMMUNOLOGY. 188 (5): 2156-2163. **I.F.: 5.78.**

8 Pineda D.; Ampurdanes C.; Medina M.G.; Serratosa J.; Tusell J.M.; Saura J.; Planas A.M.; Navarro P. **Tissue plasminogen activator induces microglial inflammation via a noncatalytic molecular mechanism involving activation of mitogen-activated protein kinases and Akt signaling pathways and AnnexinA2 and Galectin-1 receptors.** GLIA. 60 (4): 526-540. **I.F.: 4.82.**

9 Domingo-Espín J.; Petegnief V.; De Vera N.; Conchillo-Solé O.; Saccardo P.; Unzueta U.; Vazquez E.; Cedano J.; Negro L.; Daura X.; Peluffo H.; Planas A.M.; Villaverde A.; Ferrer-Miralles N. **RGD-based cell ligands for cell-targeted drug delivery act as potent trophic factors.** NANOMED-NANOTECHNOL. 8(8):1263-6. **I.F.: 6.69.**

10 Amigó-Correig M.; Barceló-Batllori S.; Soria G.; Krezymon A.; Benani A.; Pénicaud L.; Tudela R.; Planas A.M.; Fernández E.; Carmona M.C.; Gomis R. **Anti-obesity sodium tungstate treatment triggers axonal and glial plasticity in hypothalamic feeding centers.** PLOS ONE. 7(7):e39087. **I.F.: 4.09.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	90.59	14	8	2
2011	103.37	14	10	2
2012	51.04	10	10	0

REVIEWS
I.F.: 24.39

1 Chamorro A.; Meisel A.; Planas A. M.; Urra X.; Van de Beek D.; Veltkamp R. **The immunology of acute stroke.** NATURE REVIEWS NEUROLOGY. 8 (7): 401-410. **I.F.: 12.46.**

2 Mattle H.P.; Brainin M.; Chamorro A.; Diener H.C.; Hacke W.; Leys D.; Norrving B.; Ward N. **European Stroke Science Workshop.** STROKE. 43: E81-E88. **I.F.: 5.73.**

3 Cervera A.; Amaro S.; Chamorro A. **Oral anticoagulant-associated intracerebral hemorrhage.** JOURNAL OF NEUROLOGY. 259 (2): 212-224. **I.F.: 3.47.**

4 Mattle H.P.; Brainin M.; Chamorro A.; Diener H.C.; Hacke W.; Leys D.; Norrving B.; Ward N. **European Stroke Science Workshop.** CEREBROVASC DIS. 34(2):95-105. **I.F.: 2.72.**

MULTICENTRICS
I.F.: 5.01

1 Jacobs A.H.; Tavitian B.; INMiND Consortium. **Noninvasive molecular imaging of neuroinflammation.** J CEREBR BLOOD F MET. 32(7):1393-415. **I.F.: 5.01.**

GRANTS FOR RESEARCH IN PROGRESS

Chamorro A. **Uricoictus-fase III. Estudio doble ciego, aleatorizado frente a vehículo de la eficacia clínica del tratamiento combinado con ácido úrico y RTPA administrados por via intravenosa en pacientes con ictus isquémico de menos de 3 horas de evolución.** Sponsored by: Ministerio Sanidad y Consumo, EC07/90276. Duration: 29/10/2007-30/12/2013.

Planas A.M. **Affording recovery in Stroke (ARISE).** Sponsored by: European Commission. FP7-HEALTH-2007-2.2.1-1 – nº201024. Duration: 01/04/2008-01/03/2013.

Justicia C. **Estudio de la función cerebral por resonancia magnética de alto campo en modelos experimentales de isquemia: Degeneración y regeneración de la sustancia blanca.** Sponsored by: Ministerio de Ciencia e innovación (FIS), PI081880. Duration: 01/01/2009-31/12/2012.

Chamorro A. **Estudio de marcadores inmunológicos circulantes y tisulares (tejido linfoide y cerebro) y de su relación pronóstica en el paciente con ictus isquémico.** Sponsored by: Instituto de Salud Carlos III, PI09/1313. Duration: 01/01/2010-30/09/2013.

Cervera A. **Activación del complemento por la vía de la lectinas: relevancia clínica y utilidad de su inhibición para la mejoría pronóstica.** Sponsored by: Instituto de Salud Carlos III, PI10/01898. Duration: 01/01/2011-31/12/2013.

Justicia C. **Estudios de neuroimagen.** Sponsored by: Ministerio de Economía y Competitividad, CENIT10 10/157. Duration: 18/05/2010-31/12/2014.

Planas A.M. **Grup d'investigació cerebrovascular.** Sponsored by: Generalitat de Catalunya, 2009_SGR_890. Duration: 28/09/2009-31/12/2013.

Planas A.M. **Imaging of Neuroinflammation in Neurodegenerative Diseases.** Sponsored by: European Commission 278850. Duration: 01/03/2012-28/02/2017.

Pozas E. **Neuroinflammation and adult neurogenesis after acute brain injury. Perspectives for neuronal recovery after brain damage.** Sponsored by: Marató TV3 110810. Duration: 31/01/2012-30/01/2015.

Petegnief V. **Boosting endogenous mechanisms for neural protection and repair after acute damage to the nervous system.** Sponsored by: Marató TV3 proyecto 110431 Duration: 1/01/2012 – 31/12/2014.

Planas A.M. **Múltiples facetas de la inflamación en el ictus: modulación de señales como estrategia terapéutica.** Sponsored by: MICINN (SAF2011-30492-C02-01) Duration: 1/01/2012 – 31/12/2014

Planas A.M. **Role of danger signals in stroke and therapeutic targeting by nanobodies.** Sponsored by: MICINN European Community ERA-NET (PRI-PIMNEU-2011-1342) Duration: 01/01/2012-31/12/2014.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neurodegenerative diseases: Clinical and experimental research

TEAM INVOLVED IN: CIBERNED

GROUP MEMBERS

TEAM LEADER
Eduardo Tolosa (Hospital Clínic)
Tel.: 93 227 57 85
E-mail: etolosa@clinic.cat

RESEARCHERS:
Mario Ezquerra (ISC3, Fundació Clínic)
Conxita Marín (IDIBAPS)
Maria Josep Martí (Hospital Clínic)
José Luís Molinuevo (Hospital Clínic)
Esteban Muñoz (Hospital Clínic)
Francesc Valldeoriola (Hospital Clínic)
Albert Lladó (Hospital Clínic)
Raquel Sánchez del Valle (Hospital Clínic)
Lorena Rami (Fundació Clínic - Miguel Servet)

POST-DOCTORAL RESEARCHERS:
Beatriz Bosch (IDIBAPS)
Anna Antonell (IDIBAPS)
Cristina Solé Padulles (Fundació Clínic)

PRE-DOCTORAL RESEARCHERS
Yaroslau Compta (Hospital Clínic)
Claustre Pont (CIBERNED)
Teresa Botta (IDIBAPS)
Dolores Vilas (Fundació Clínic)
Judith Navarro (IDIBAPS)
Magda Castellví (Hospital Clínic)
Mircea Balasa (Hospital Clínic)
Jaume Olives (Fundació Clínic)
Rebeca Adánez (Fundació Clínic)
Silvia Gil (IDIBAPS)

TECHNICIANS:
Esther Aguilar (Fundació Clínic)
Mercè Bonastre (CIBERNED)
Eva Caballero (AGAUR)
Manel Fernández (Fundació Clínic)
Maria Teresa Buongiorno (Fundació Clínic)

NURSING STAFF
Ana Cámara (Fundació Clínic)
Rosa Maria Álvarez (Fundació Clínic)

COLLABORATORS:
Rubén Fernández-Santiago (IDIBAPS)
Carles Gaig (Hospital Clínic)

Neurodegenerative diseases: Clinical and experimental research

STRATEGIC OBJECTIVES

1. Development of research projects, with results that may find short term application, with a view to improving the diagnosis and treatment of degenerative neurological diseases. Many of the research lines are linked to clinical research protocols of the Clinic Hospital Department of Neurology.
2. Investigation of the molecular mechanisms implicated in dopaminergic neuron degeneration and in the physiopathology of the motor complications induced by drug treatment, in experimental models of Parkinson's disease and other movement disorders.

MAIN LINES OF RESEARCH

1. LRRK2 associated Parkinson disease. Clinical, imaging and genetic characterizarion of the prodromic phase.
2. Neurochemichal, genetic and imaging biomarkers of cognitive deterioration in Parkinson disease.
3. Generation of IPSC-derived dopaminergic neurons by reprogramming of idiopathic and genetic Parkinson's disease patient skin fibroblasts. Molecular characterization and elucidation of underlying pathophysiologic mechanisms.
4. Whole-transcriptomic analysis of human postmortem brain tissues in Parkinson's disease and identification of associated pathogenic molecular processes.
5. Genetic and diagnostic and predictive marker studies in Alzheimer's disease and other dementias. Experimental functional neuroimaging studies in healthy and in pathological aging.
6. Study of the biological and molecular bases of Alzheimer's disease and Parkinson's disease in preclinical stages: mild cognitive impairment and pre-motor Parkinson's disease.
7. Study of neurogenesis in the subventricular zone, olfactory bulb and striate nucleus in experimental models of Parkinson's disease and tardive dyskinesia.

RESEARCH GROUP
PARKINSON'S DISEASE AND MOVEMENT DISORDERS

Group Leader: Eduardo Tolosa (Hospital Clínic)

1. We have created a repository of biological material of subjects with LRRK2 associated Parkinson disease and their asymptomatic relatives. We have describe for the first time alpha-synuclein aggregates in epicardial fat tissue in living subjects without parkinsonism, a probable preclinical marker of Parkinson disease. A novel LRRK2 mutation that causes familiar Parkinson disease has been identified and brain transcriptomic profiling in idiopathic and LRRK2-associated Parkinson›s disease performed.
2. We have consolidated a line of research on cerebrospinal fluid biomarkers in Parkinson dementia and established a correlation between neurochemical Alzheimer and imaging markers in Parkinson disease. Work has been initiated in Parkinson patients to characterize in vivo brain amyloid pathology with PET technology.

PUBLICATIONS

ORIGINALS
I.F.: 127.01

1 Antonell A.; Gelpi E.; Sanchez-Valle R.; Martinez R.; Molinuevo J.L.; Llado A. **Breakpoint Sequence Analysis of an A beta PP Locus Duplication Associated with Autosomal Dominant Alzheimer's Disease and Severe Cerebral Amyloid Angiopathy.** JOURNAL OF ALZHEIMERS DISEASE. 28 (2): 303-308. **I.F.: 3.74.**

2 Gelpi E.; Llado, A.; Clarimon J.; Rey M.J.; Rivera R.M.; Ezquerra M.; Antonell A.; Navarro-Otano J.; Ribalta T.; Pinol-Ripoll G.; Perez A.; Valldeoriola F.; Ferrer I. **Phenotypic Variability Within the Inclusion Body Spectrum of Basophilic Inclusion Body Disease and Neuronal Intermediate Filament Inclusion Disease in Frontotemporal Lobar Degenerations With FUS-Positive Inclusions.** JOURNAL OF NEUROPATHOLOGY AND EXPERIMENTAL NEUROLOGY. 71: 795-805. **I.F.: 4.26.**

3 Martinez-Saez E.; Gelpi E.; Rey M.J.; Ferrer I.; Ribalta T.; Botta-Orfila T.; Nos C.; Yague J.; Sanchez-Valle R. **Hirano body-rich subtypes of Creutzfeldt-Jakob disease.** NEUROPATHOLOGY AND APPLIED NEUROBIOLOGY. 38 (2): 153-161. **I.F.: 3.80.**

4 Botta-Orfila T.; Sanchez-Pla A.; Fernandez M.; Carmona F.; Ezquerra M.; Tolosa E. **Brain transcriptomic profiling in idiopathic and LRRK2-associated Parkinson's disease.** BRAIN RESEARCH. 1466: 152-157. **I.F.: 2.73.**

5 Schmitt S.E.; Pargeon K.; Frechette E.S.; Hirsch L.J.; Dalmau J.; Friedman D. **Extreme delta brush A unique EEG pattern in adults with anti-NMDA receptor encephalitis.** NEUROLOGY. 79(11):1094-100. **I.F.: 8.31.**

6 Dubois B.; Tolosa E.; Katzenschlager R.; Emre M.; Lees A. J.; Schumann G.; Pourcher E.; Gray J.; Thomas G.; Swartz J.; Hsu T.; Moline M.L. **Donepezil in Parkinson's disease dementia: A randomized, double-blind efficacy and safety study.** MOVEMENT DISORDERS. 27: 1230-1238. **I.F.: 4.50.**

7 Lorenzo-Betancor O.; Ezquerra L.S.M.; Ezquerra M.; Tolosa E.; Lorenzo E.; Irigoyen J.; Gaig C.; Pastor M.A.; Soto-Ortolaza A.I.; Ross O.A.; Rodriguez-Oroz M.C.; Valldeoriola F.; Marti M.J.; Luquin M.R.; Perez-Tur J.; Burguera J.A.; Obeso J.A.; Pastor P. **LRRK2 Haplotype-Sharing Analysis in Parkinson's Disease Reveals a Novel p.S1761R Mutation.** MOVEMENT DISORDERS. 27 (1): 146-151. **I.F.: 4.50.**

8 Lees A.; Fahn S.; Eggert K.M.; Jankovic J.; Lang A.; Micheli F.; Mouradian M.M.; Oertel W.H.; Olanow C.W.; Poewe W.; Rascol O.; Tolosa E.; Squillacote D.; Kumar D. **Perampanel, an AMPA antagonist, found to have no benefit in reducing "off" time in Parkinson's disease.** MOVEMENT DISORDERS. 27 (2): 284-300. **I.F.: 4.50.**

9 Canto E.; Reverter F.; Morcillo-Suarez C.; Matesanz F.; Fernandez O.; Izquierdo G.; Vandenbroeck K.; Rodriguez-Antigueedad A.; Urcelay E.; Arroyo R.; Otaegui D.; Olascoaga J.; Saiz A.; Navarro A.; Sanchez A.; Dominguez C.; Caminero A.; Horga A.; Tintore M.; Montalban X.; Comabella M. **Chitinase 3-like 1 plasma levels are increased in patients with progressive forms of multiple sclerosis.** MULTIPLE SCLEROSIS JOURNAL. 18 (7): 983-990. **I.F.: 4.25.**

10 Luk C.; Compta Y.; Magdalinou N.; Marti J.M.; Hondhamuni G.; Zetterberg H.; Blennow K.; Constantinescu R.; Pijnenburg Y.; Mollenhauer B.; Trenkwalder C.; Van Swieten J.; Chiu W.Z.; Borroni B.; Camara A.; Cheshire P.; Williams D.R.; Lees A.J.; De Silva R. **Development and assessment of sensitive immuno-PCR assays for the quantification of cerebrospinal fluid three- and four-repeat tau isoforms in tauopathies.** JOURNAL OF NEUROCHEMISTRY. 123: 396-405. **I.F.: 4.06.**

11 Tolosa E. **Rasagiline improves key motor symptoms of Parkinson's disease in early stages: post-hoc analysis from the Attenuation of Disease progression with Azilect (R) Glven Once-daily (ADAGIO) study.** EUROPEAN JOURNAL OF NEUROLOGY. 19: 657-657. **I.F.: 3.69.**

12 Tolosa E.; Stern M.B. **Efficacy, safety and tolerability of rasagiline as adjunctive therapy in elderly patients with Parkinson's disease.** EUROPEAN JOURNAL OF NEUROLOGY. 19 (2): 258-264. **I.F.: 3.69.**

13 Santos-Garcia D.; De La Fuente-Fernandez R.; Valldeoriola F.;Palasi A.; Carrillo F.; Grande M.; Mir P.; De Fabregues O.; Casanova J. **Polyneuropathy while on duodenal levodopa infusion in Parkinson's disease patients: we must be alert.** JOURNAL OF NEUROLOGY. 259: 1668-1672. **I.F.: 3.47.**

14 Sala I.; Marquie M.; Sanchez-Saudinos M.B.; Sanchez-Valle R.; Alcolea D.; Gomez-Anson B.; Gomez-Isla T.; Blesa R.; Lleo A. **Rapidly Progressive Dementia Experience in a Tertiary Care Medical Center.** ALZHEIMER DISEASE & ASSOCIATED DISORDERS. 26: 267-271. **I.F.: 2.81.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	188.85	27	9	5
2011	237.08	44	24	10
2012	127.01	32	20	8

15 Botta-Orfila T.; Ezquerra M.; Pastor P.; Fernandez-Santiago R.; Pont-Sunyer C-; Compta Y.; Lorenzo-Betancor O.; Samaranch Ll.; Marti J.M.; Valldeoriola F.; Calopa M.; Fernandez M.; Aguilar M.; De Fabregas O.; Hernandez-Vara J.; Tolosa E. **Age at Onset in LRRK2-Associated PD is Modified by SNCA Variants.** JOURNAL OF MOLECULAR NEUROSCIENCE. 48: 245-247. **I.F.: 2.50.**

16 Ribalta T.; Tolosa E.; Navarro Otano J.; Gelpi E. **Alpha-synuclein (AS) pathology of the Peripheral Autonomic Nervous System (PANS) in Parkinson Disease (PD) and other Lewy Body Diseases (LBD).** VIRCHOWS ARCHIV. 461: S90-S90. **I.F.: 2.49.**

17 Cummings J.; Froelich L.; Black S.E.; Bakchine S.; Bellelli G.; Molinuevo J.L.; Kressig R.W.; Downs P.; Caputo A.; Strohmaier C. **Randomized, Double-Blind, Parallel-Group, 48-Week Study for Efficacy and Safety of a Higher-Dose Rivastigmine Patch (15 vs. 10 cm(2)) in Alzheimer's Disease.** DEMENTIA AND GERIATRIC COGNITIVE DISORDERS. 33 (5): 341-353. **I.F.: 2.14.**

18 Quintana M.; Guardia J.; Sanchez-Benavides G.; Aguilar M.; Molinuevo J.L.; Robles A.; Barquero M.S.; Antunez C.; Martinez-Parra C.; Frank-Garcia A.; Fernandez M.; Blesa R.; Pena-Casanova J. **Using artificial neural networks in clinical neuropsychology: High performance in mild cognitive impairment and Alzheimer's disease.** JOURNAL OF CLINICAL AND EXPERIMENTAL NEUROPSYCHOLOGY. 34 (2): 195-208. **I.F.: 2.13.**

19 Molinuevo J.L.; Hernandez B. **Assessment of the information provided by the medical specialist on Alzheimer's disease and that retained by the patient caregivers.** NEUROLOGIA. 27(8):453-71. **I.F.: 0.79.**

20 Perez Pintor L.; Valldeoriola F.; Fernandez-Egea E.; Sanchez R.; Rami L.; Tolosa E.; Muniz A.; Marti J.M.; Bernardo M. **Use of Electroconvulsive Therapy in Parkinson Disease With Residual Axial Symptoms Partially Unresponsive to L-Dopa A Pilot Study.** JOURNAL OF ECT. 28 (2): 87-91. **I.F.: 1.54.**

21 Rodriguez-Diehl R.; Rey M.J.; Gironell A.; Martinez-Saez E.; Ferrer I.; Sanchez-Valle R.; Jague J.; Nos C.; Gelpi E. **Preclinical MSA in definite Creutzfeldt-Jakob disease.** NEUROPATHOLOGY. 32 (2): 158-163. **I.F.: 2.02.**

22 Botta-Orfila T.; Tolosa E.; Gelpi E.; Sanchez-Pla A.; Marti M.J.; Valldeoriola F.; Fernandez M.; Carmona F.; Ezquerra M. **Microarray expression analysis in idiopathic and LRRK2-associated Parkinson's disease.** NEUROBIOLOGY OF DISEASE. 45 (1): 462-468. **I.F.: 5.40.**

23 Sanchez-Danes A.; Richaud-Patin Y.; Carballo-Carbajal I.; Jimenez-Delgado S.; Caig C.; Mora S.; Di Guglielmo C.; Ezquerra M.; Patel B.; Giralt A.; Canals J.M.; Memo M.; Alberch J.; Lopez-Barneo J.; Vila M.; Cuervo A.M.; Tolosa E.; Consiglio A.; Raya A. **Disease-specific phenotypes in dopamine neurons from human iPS-based models of genetic and sporadic Parkinson's disease.** EMBO MOLECULAR MEDICINE. 4 (5): 380-395. **I.F.: 10.33.**

24 Serranova T.; Jech R.; Marti, M.J.; Modreanu R.; Valldeoriola F.; Sieger T.; Ruzicka E.; Valls-Sole J. **A Loud Auditory Stimulus Overcomes Voluntary Movement Limitation in Cervical Dystonia.** PLOS ONE. 7(10):e46586. **I.F.: 4.09.**

25 Baggio H. C.; Segura B.; Ibarretxe-Bilbao N.; Valldeoriola F.; Marti M.J.; Compta Y.; Tolosa E.; Junque C. **Structural correlates of facial emotion recognition deficits in Parkinson's disease patients.** NEUROPSYCHOLOGIA. 50: 2121-2128. **I.F.: 3.64.**

26 Pereira J.B.; Ibarretxe-Bilbao N.; Marti M.J.; Compta Y.; Junque C.; Bargallo N.; Tolosa E. **Assessment of cortical degeneration in patients with Parkinson's disease by voxel-based morphometry, cortical folding, and cortical thickness.** HUMAN BRAIN MAPPING. 33: 2521-2534. **I.F.: 5.88.**

27 Frauscher B.; Iranzo A.; Gaig C.; Gschliesser V.; Guaita M.; Raffelseder V.; Ehrmann L.; Sola N.; Salamero M.; Tolosa E.; Poewe W.; Santamaria J.; Hoegl B. **Normative EMG Values during REM Sleep for the Diagnosis of REM Sleep Behavior Disorder.** SLEEP. 35 (6): 835-847. **I.F.: 5.05.**

28 Compta Y.; Ibarretxe-Bilbao N.; Pereira J:B.; Junque C.; Bargallo N.; Tolosa E.; Valldeoriola F.; Munoz E.; Camara A.; Buongiorno M.T.; Marti M.J. **Grey matter volume correlates of cerebrospinal markers of Alzheimer-pathology in Parkinson's disease and related dementia.** PARKINSONISM & RELATED DISORDERS. 18: 941-947. **I.F.: 3.79.**

29 Balasa M.; Vidal-Pineiro D.; Llado A.; Antonell A.; Bosch B.; Castellanos F.; Bargallo N.; Bartres-Faz D.; Molinuevo J.L.; Sanchez-Valle R. **PSEN1 Mutation Carriers Present**

Lower Cerebrospinal Fluid Amyoid-beta(42) Levels than Sporadic Early-Onset Alzheimer's Disease Patients but no Differences in Neuronal Injury Biomarkers. JOURNAL OF ALZHEIMERS DISEASE. 30 (3): 605-616. **I.F.: 3.74.**

30 Rami L.; Sole-Padulles C.; Fortea J.; Bosch B.; Llado A.; Antonell A.; Olives J.; Castellvi M.; Bartres-Faz D.; Sanchez-Valle R.; Molinuevo J.L. **Applying the new research diagnostic criteria: MRI findings and neuropsychological correlations of prodromal AD.** INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY. 27 (2): 127-134 FEB 2012. **I.F.: 2.42.**

31 Bosch B.; Arenaza-Urquijo E.M.; Rami L.; Sala-Llonch R.; Junque C.; Sole-Padulles C.; Pena-Gomez C.; Bargallo N.; Molinuevo J.L.; Bartres-Faz D. **Multiple DTI index analysis in normal aging, amnestic MCI and AD. Relationship with neuropsychological performance.** NEUROBIOLOGY OF AGING. 33 (1): 61-74. **I.F.: 6.19.**

32 Ibarretxe-Bilbao N.; Junque C.; Segura B.; Baggio H.C.; Marti M.J.; Valldeoriola F.; Bargallo N.; Tolosa E. **Progression of Cortical Thinning in Early Parkinson's Disease.** MOVEMENT DISORDERS. 27: 1746-1754. **I.F.: 4.50.**

REVIEWS
I.F.: 36.80

1 Pintor L.; Valldeoriola F.; Bailles E.; Marti M.J.; Muniz A.; Tolosa E. **Ziprasidone Versus Clozapine in the Treatment of Psychotic Symptoms in Parkinson Disease: A Randomized Open Clinical Trial.** CLINICAL NEUROPHARMACOLOGY. 35 (2): 61-66. **I.F.: 2.17.**

2 Jecmenica-Lukic M.; Poewe W.; Tolosa E.; Wenning G.K. **Premotor signs and symptoms of multiple system atrophy.** LANCET NEUROLOGY. 11 (4): 361-368. **I.F.: 23.46.**

3 Vanderstichele H.; Bibl M.; Engelborghs S.; Le Bastard N.; Lewczuk P.; Molinuevo J.L.; Parnetti L.; Perret-Liaudet A.; Shaw L.M.; Teunissen C.; Wouters D.; Blennow K. **Standardization of preanalytical aspects of cerebrospinal fluid biomarker testing for Alzheimer's disease diagnosis: A consensus paper from the Alzheimer's Biomarkers Standardization Initiative.** ALZHEIMERS & DEMENTIA. 8 (1): 65-73. **I.F.: 6.37.**

4 Del Campo M.; Mollenhauer B.; Bertolotto A.; Engelborghs S.; Hampel H.; Simonsen A.H.; Kapaki E.; Kruse N.; Le Bastard N.; Lehmann S.; Molinuevo J.L.; Parnetti L.; Perret-Liaudet A.; Saez-Valero J.; Saka E.; Urbani A.; Vanmechelen E.; Verbeek M.; Visser P.J.; Teunissen C. **Recommendations to standardize preanalytical confounding factors in Alzheimer's and Parkinson's disease cerebrospinal fluid biomarkers: an update.** BIOMARKERS IN MEDICINE. 6: 419-430. **I.F.: 2.63.**

5 Rascol O.; Barone P.; Behari M.; Emre M.; Giladi N.; Olanow C.W.; Ruzicka E.; Bibbiani F.; Squillacote D.; Patten A.; Tolosa E. **Perampanel in Parkinson Disease Fluctuations: A Double-Blind Randomized Trial With Placebo and Entacapone.** CLINICAL NEUROPHARMACOLOGY. 35 (1): 15-20. **I.F.: 2.16.**

EDITORIALS
I.F.: 3.41

1 Valldeoriola F.; Valls-Sole J. **Cycling thalamic stimulation, neuronal entropy, and tremor.** CLINICAL NEUROPHYSIOLOGY. 123 (5): 856-857. **I.F.: 3.41.**

GRANTS FOR RESEARCH IN PROGRESS

Tolosa E. **Síntomas no-motores e integridad de la vía nigroestriatal en portadores "asintomáticos" de mutaciones en el gen LRRK2.** Sponsored by: Instituto de Salud Carlos III, PI080155. Duration: 01/01/2009-30/06/2013.

Tolosa E. **Gait and motors symptoms in healthy asymptomatic relatives of Patients with PD carriers of mutations in the LRRK2 gene.** Sponsored by: Michael J. Fox Foundation for Parkinson's Disease, MJFF_2011_01. Duration: 21/05/2012-20/05/2014.

Tolosa E. **Autonomic dysfunction in LRRK2 mutation carriers: Characterization of autonomic profiles of patients with PD, carriers of mutations in the LRRK2 gene and no-manifesting first degree relatives.** Sponsored by: Michael J. Fox Foundation for Parkinson's Disease, MJFF_2011_02. Duration: 18/05/2012-17/05/2014.

Tolosa E. **LRRK2 Mutations and Cancer Risk.** Sponsored by: Michael J. Fox Foundation for Parkinson's Disease, MJFF_2012_01. Duration: 18/09/2012-17/09/2014.

Tolosa E. **Grup de recerca de malalties neurològiques.** Sponsored by: AGAUR (Generalitat de Catalunya), 2009 SGR1019. Duration: 01/01/2009-31/12/2013.

Ezquerra M. **Identificación de biomarcadores de mirnas en el líquido cefalorraquídeo con interés diagnóstico para la enfermedad de Parkinson y otros parkinsonismos relacionados.** Sponsored by: Instituto de Salud Carlos III, PI09/1038. Duration: 01/01/2010-31/12/2012.

Tolosa E. **European Project on Mendelian Forms of Parkinson's Disease.** Sponsored by: European Commission CE-FP7-HEALTH-1ST-09 (coordinated by Eberhard-Karls Universitaet Tuebingen) 241791. Duration: 01/04/2010-31/03/2013.

Molinuevo J.L. **Disfunción cerebral durante el envejecimiento: relevancia para la enfermedad de Alzheimer.** Sponsored by: Ministerio de Ciencia e Innovación CSD2010-00045. Duration: 27/12/2010-26/12/2015.

Tolosa E. **LRRK2 Cohort Consortium 2010 - "Expansion of the ASAP study" (ASymptomatic G2019S/R1441G LRRK2 mutation carriers and Assessment of factors influencing LRRK2-related PD expression study).** Sponsored by: Michael J. Fox Foundation for Parkinson Disease, MJF_LRRK2_10_001. Duration: 04/10/2011-03/10/2013.

Rami L. **Evolución cognitiva de un grupo de sujetos con envejecimiento saludable frente a sujetos con cognición normal a riesgo de la enfermedad de Alzheimer.** Sponsored by: MSPSI_Imserso, 11 197/11. Duration: 23/12/2011-22/12/2012.

Llado Plarrumani A. **Caracterización clínico-biológica de la enfermedad de Alzheimer de inicio precoz: desde las fases predemencia a los hallazgos neuropatológicos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00234. Duration: 01/01/2012-31/12/2014.

Rami Gonzalez L. **Cambios cognitivos y de resonancia magnética en sujetos con cognición normal y evidencia biológica de enfermedad de Alzheimer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01071. Duration: 01/01/2012-31/12/2014.

Marin Agustin M.C. **Neurogénesis en la enfermedad de Parkinson y su modulación con el tratamiento farmacológico: estudio comportamental, molecular y de neuroimagen en el parkinsonismo experimental.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01267. Duration: 01/01/2012-31/12/2014.

Marti Domenech M.J. **PET-FDDNP y diagnóstico in vivo de taupatía en el parkinsonismo inclasificable.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/02031. Duration: 01/01/2012-31/12/2014.

Molinuevo J.L. **BIOMARKAPD: Biomarkers for Alzheimer's disease and Parkinson's disease.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/03023 (JPND). Duration: 01/01/2012-31/12/2014.

Molinuevo J.L. **Disfunción cerebral durante el envejecimiento: relevancia para la enfermedad de Alzheimer.** Sponsored by: Spanish Ministry of Economy and Compititiveness. CONSOLIDER program, CSD2010-00045. Duration: 27/12/2010-26/12/2015.

DOCTORAL THESES

Tolosa E.; Ezquerra M. **Factors genètics i d'expressió implicats en la patogènia de la malaltia de parkinson idiopàtica i associada a la mutació G2019S a LRRK2.** PhD student: Mª Teresa Botta Orfila.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neurophysiology and functional studies of the nervous system

TEAM INVOLVED IN:
RETIC en Oftalmología (OFTARED)

GROUP MEMBERS

TEAM LEADER
Josep Valls Solé (Hospital Clínic)
Tel.: 93 227 54 13
E-mail: jvalls@clinic.cat

GROUP LEADER:
Xavier Gasull (UB)

RESEARCHERS:
Mar Carreño (Hospital Clínic)
Arcadi Gual (UB)
Alejandro Iranzo (Hospital Clínic)
Joan Santamaria (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Germán Cuesto Gil (IDIBAPS)
MonicaSerradell (FundacióClínic)
Astrid Tulleuda (UB)
Merche Morales (IDIBAPS)
Gerard Callejo Martin (UB)
Marc Güaita (IDIBAPS)
Aida Castellanos (UB)

COLLABORATORS:
Antonio Donaire (Hospital Clínic)
Jordi Palés (UB)
Xavier Sala Blanch (Hospital Clínic)
Carles Gaig (Hospital Clínic)
Javier Aparicio (Hospital Clínic)
Jonathan Giblin (UB, Investigador Ramon y Cajal)

VISITING SCIENTISTS:
Dylan Edwards (Burke Institute of Rehabilitation, New York)
Markus Kofler (HochzirlNeurorehabilitation Hospital, Zirl, Austria)
Juan M. Castellote (Instituto de Salud Carlos III, Madrid, España)

STRATEGIC OBJECTIVES

Expansion of scientific knowledge on functional aspects of the nervous system, with maximum integration of the basic and clinical aspects, fundamentally using neurophysiological techniques. From the clinical perspective, the principal objectives are the characterization of the neurophysiological aspects of motor control and perception, and the physiopathological aspects of neuromuscular diseases, sleep disturbances, epilepsy, and conditions characterized by neuropathic pain. In basic research, the principal objective is to understand the way that sensory neurons change their excitability in response to injury, inflammation or other abnormalities, as well as the role of different ion channels in the generation of inflammatory and neuropathic pain. The ocular research lines study the cellular processes involved in dry eye and glaucoma pathophysiology.

MAIN LINES OF RESEARCH

1. The participation of subcortical motor systems in the execution of movements, postural maintenance and reflex control. Study of the alarm circuits based on auditory or somatosensory stimuli. Prepulse-phenomena.
2. Physiology and physiopathology of neuropathic pain. Study of nociceptive evoked potentials. Reflex reactions of the autonomous nervous system in response to nociceptive stimulation.Conscious sensory perception.
3. Study of sleep and its disturbances in different disorders. Narcolepsy, Excessive daytime sleepiness and REM sleep behavior disorder. Sleep multiple latency testing. Restless legs syndrome. Periodic leg movements during sleep.
4. Epileptic phenomena and their treatment. Status epilepticus. Monitoring of epileptic seizures. Video-EEG and epidural recording. Epileptic crisis recordings with functional magnetic resonance imaging.
5. Characterization of ion channels involved in neuronal excitability in the sensory nervous system. Study of their role in sensory transduction and the generation of inflammatory and neuropathic pain.
6. Physiology of aqueous humor drainage and physiopathology of glaucoma. Ocular pathology in aging. Physiology of the cells of the ocular-trabecular meshwork. Physiopathology of dry eye.

RESEARCH GROUP
NEUROPHYSIOLOGY

Group Leader: Xavier Gasull (UB)

Within the field of neurophysiology, the group is interested in establishing the functions of different ion channels in the regulation of different cell processes. In particular, at cellular level, we are investigating different ion channels implicated in cellular excitability in sensory neurons of the dorsal root and trigeminal ganglia, and their relationship with neuropathic pain, with special interest on ocular pain after inflammation, injury or dry eye disease. On the other hand, in trabecular cells that regulate aqueous humor flow in the eye, we are exploring the role of the cytoskeleton and of different ion channels in the functioning of these cells and their relationship with the physiopathology of glaucoma.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	107.69	20	10	6
2011	128.70	26	12	7
2012	89.25	21	17	1

ORIGINALS
I.F.: 89.25

1 Kumru H.; Soler D.; Vidal J.; Tormos J.M.; Pascual-Leone A.; Valls-Sole J. **Evoked potentials and quantitative thermal testing in spinal cord injury patients with chronic neuropathic pain.** CLINICAL NEUROPHYSIOLOGY. 123 (3): 598-604. **I.F.: 3.41.**

2 Barraza G.; Serranova T.; Herrero C.; Casanova-Molla J.; To-Figueras J.; Herranz J.; Valls-Sole J. **Brainstem dysfunction in variegate porphyria.** MUSCLE & NERVE. 46(3):426-33. **I.F.: 2.37.**

3 Serranova T.; Jech R.; Marti M.J.; Modreanu R.; Valldeoriola F.; Sieger T.; Ruzicka E.; Valls-Sole J. **A Loud Auditory Stimulus Overcomes Voluntary Movement Limitation in Cervical Dystonia.** PLOS ONE. 7(10):e46586. **I.F.: 4.09.**

4 Postuma R.B.; Montplaisir J.Y.; Pelletier A.; Dauvilliers Y.; Oertel W.; Iranzo A.; Ferini-Strambi L.; Arnulf I.; Hogl B.; Manni R.; Miyamoto T.; Mayer G.; Stiasny-Kolster K.; Puligheddu M.; Ju Y.; Jennum P.; Sonka K.; Santamaria J.; Fantini M.L.; Zucconi M.; Leu-Semenescu S.; Frauscher B.; Terzaghi M.; Miyamoto M.; Unger M.M.; De Cock V.C.; Wolfson C. **Environmental risk factors for REM sleep behavior disorder A multicenter case-control study.** NEUROLOGY. 79(5):428-34. **I.F.: 8.31.**

5 Valls-Sole J.; Castellote J.M.; Kofler M.; Casanova-Molla J.; Kumru H.; Schestatsky P. **Awareness of Temperature and Pain Sensation.** JOURNAL OF PAIN. 13 (7): 620-627. **I.F.: 4.93.**

6 Fernandez-Del-Olmo M.; Bello O.; Lopez-Alonso V.; Sanchez J.A.; Santos-Garcia D.; Valls-Sole J. **The effects of auditory startle and nonstartle stimuli on step initiation in Parkinson's disease.** MOVEMENT DISORDERS. 27(12):1570-3. **I.F.: 4.50.**

7 Garcia-Borreguero D.; Ferini-Strambi L.; Kohnen R.; O'Keeffe S.; Trenkwalder C.; Hoegl B.; Benes H.; Jennum P.; Partinen M.; Fer D.; Montagna P.; Bassetti C.L.; Iranzo A.;Sonka K.; Williams A.M. **European guidelines on management of restless legs syndrome: report of a joint task force by the European Federation of Neurological Societies, the European Neurological Society and the European Sleep Research Society.** EUROPEAN JOURNAL OF NEUROLOGY. 19(11):1385-96. **I.F.: 3.69.**

8 Falip M.; Carreno M.; Miro J.; Saiz A.; Villanueva V.; Quilez A.; Molins A.; Barcelo I.; Sierra A.; Graus F. **Prevalence and immunological spectrum of temporal lobe epilepsy with glutamic acid decarboxylase antibodies.** EUROPEAN JOURNAL OF NEUROLOGY. 19 (6): 827-833. **I.F.: 3.69.**

9 Sierra-Marcos A.; Maestro I.; Rodriguez-Osorio X.; Miro J.; Donaire A.; Aparicio J.; Rumia J.; Forcadas M.; Garamendi I.; Pardo J.; Lopez J.; Prieto A.; Plans G.; Falip M.; Carreno, M. **Successful outcome of episodes of status epilepticus after vagus nerve stimulation: a multicenter study.** EUROPEAN JOURNAL OF NEUROLOGY. 19(9):1219-23. **I.F.: 3.69.**

10 Groppa S.; Oliviero A.; Eisen A.; Quartarone A.; Cohen L.G.; Mall V.; Kaelin-Lang A.; Mima T.; Rossi S.; Thickbroom G.W.; Rossini P.M.; Ziemann U.; Valls-Sole J.; Siebner H.R. **A practical guide to diagnostic transcranial magnetic stimulation: Report of an IFCN committee.** CLINICAL NEUROPHYSIOLOGY. 123 (5): 858-882. **I.F.: 3.41.**

11 Castellote J.M.; Queralt A.; Valls-Sole J. **Preparedness for landing after a self-initiated fall.** JOURNAL OF NEUROPHYSIOLOGY. 108(9):2501-8. **I.F.: 3.32.**

12 Guzman-Lopez J.; Costa J.; Selvi A.; Barraza G.; Casanova-Molla J.; Valls-Sole J. **The effects of transcranial magnetic stimulation on vibratory-induced presynaptic inhibition of the soleus H reflex.** EXPERIMENTAL BRAIN RESEARCH. 220 (3-4): 223-230. **I.F.: 2.39.**

13 Benito-Penalva J.; Edwards D.J.; Opisso E.; Cortes M.; Lopez-Blazquez R.; Murillo N.; Costa U.; Tormos J.M.; Vidal-Samso J.; Valls-Sole J.; Medina J. **Gait Training in Human Spinal Cord Injury Using Electromechanical Systems: Effect of Device Type and Patient Characteristics.** ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION. 93 (3): 404-412. **I.F.: 2.28.**

14 Carreno M.; Aparicio J.; Sierra A.; Aceituno A.; Pintor L.; Bargallo N.; Setoain J.; Rumia J.; Boget T.; Donaire A.; Bailles E.; Fernandez S. **Are patients referred for presurgical evaluation drug resistant according to the new consensus definition? A study in a tertiary center.** EPILEPSY RESEARCH. 98 (2-3): 277-280. **I.F.: 2.29.**

15 Yeramian A.; Sorolla A.; Velasco A.; Santacana M.; Dolcet X.; Valls J.; Abal L.; Moreno S.; Egido R.; Casanova J.M.; Puig S.; Vilella R.; Llombart-Cussac A.; Matias-Guiu X.; Marti R.M. **Inhibition of activated receptor tyrosine kinases by Sunitinib induces growth arrest and sensitizes melanoma cells to Bortezomib by blocking Akt pathway.** INTERNATIONAL JOURNAL OF CANCER. 130 (4): 967-978. **I.F.: 5.44.**

16 Sanchez-Gistau V.; Sugranyes G.; Bailles E.; Carreno M.; Donaire A.; Bargallo N.; Pintor L. **Is major depressive disorder specifically associated with mesial temporal sclerosis?** EPILEPSIA. 53 (2): 386-392. **I.F.: 3.96.**

17 Frauscher B.; Iranzo A.; Gaig C.; Gschliesser V.; Guaita M.; Raffelseder V.; Ehrmann L.; Sola N.; Salamero M.; Tolosa E.; Poewe W.; Santamaria J.; Hoegl B. **Normative EMG Values during REM Sleep for the Diagnosis of REM Sleep Behavior Disorder.** SLEEP. 35 (6): 835-847. **I.F.: 5.05.**

18 Pena-Gomez C.; Sole-Padulles C.; Clemente I.C.; Junque C.; Bargallo N.; Bosch B.; Molinuevo J.L.; Valls-Sole J.; Pascual-Leone A.; Bartres-Faz D. **APOE Status Modulates the Changes in Network Connectivity Induced by Brain Stimulation in Non-Demented Elders.** PLOS ONE. 7(12):e51833. **I.F.: 4.09.**

19 Pena-Gomez C.; Sala-Lonch R.; Junque C.; Clemente I.C.; Vidal D.; Bargallo N.; Falcon C.; Valls-Sole J.; Pascual-Leone A.; Bartres-Faz D. **Modulation of large-scale brain networks by transcranial direct current stimulation evidenced by resting-state functional MRI.** BRAIN STIMULATION. 5(3):252-63. **I.F.: 3.75.**

20 Llufriu S.; Blanco Y.; Martinez-Heras E.; Casanova-Molla J.; Gabilondo I.;Sepulveda M.; Falcon C.; Berenguer J.; Bargallo N.; Villoslada P.; Graus F.; Valls-Sole J.; Saiz A. **Influence of Corpus Callosum Damage on Cognition and Physical Disability in Multiple Sclerosis: A Multimodal Study.** PLOS ONE. 7 (5). **I.F.: 4.09.**

21 Bosch X.; Rovira M.; Sitges M.; Domenech A.; Ortiz J.T.; Morales M.; De Caralt T.M.; Perea R.J.; Monzo M.; Esteve J. **Enalapril and carvedilol in the prevention of chemotherapy-induced left ventricular systolic dysfunction in patients with malignant hemopathies. The OVERCOME study.** EUROPEAN HEART JOURNAL. 61(23):2355-62. **I.F.: 10.48.**

REVIEWS
I.F.: 6.86

1 Gaig C.; Iranzo A. **Sleep-Disordered Breathing in Neurodegenerative Diseases.** CURRENT NEUROLOGY AND NEUROSCIENCE REPORTS. 12 (2): 205-217. **I.F.: 3.45.**

2 Valls-Sole J. **Assessment of excitability in brainstem circuits mediating the blink reflex and the startle reaction.** CLINICAL NEUROPHYSIOLOGY. 123 (1): 13-20. **I.F.: 3.41.**

EDITORIALS
I.F.: 3.41

1 Valldeoriola F.; Valls-Sole J. **Cycling thalamic stimulation, neuronal entropy, and tremor.** CLINICAL NEUROPHYSIOLOGY. 123 (5): 856-857. **I.F.: 3.41.**

GRANTS FOR RESEARCH IN PROGRESS

Gual A. **Patologia ocular del envejecimiento, calidad visual y calidad de vida. Redes temáticas de centros (RETIC).** Sponsored by: Ministerio de Sanidad y Consumo, RD07/0062/0006. Duration: 01/01/2007-31/12/2012.

Gasull X. **El canal de leak TRESK en la excitabilidad neuronal nociceptiva: implicaciones en el dolor neuropático.** Sponsored by: FIS, Ministerio de Sanidad y Consumo, PI080014. Duration: 01/01/2009-20/03/2012.

Gual A. **Lab. Neurofisiologia. Grup consolidat Generalitat de Catalunya.** Sponsored by: Generalitat de Catalunya, SGR09_869. Duration: 01/01/2009-31/12/2013.

Gasull X. **Desarrollo de un proyecto llamado "Soluciones innovadoras para acelerar la identificación y desarrollo de fármacos para patologías del Sistema Nervioso.** Sponsored by: Ministerio de Economía y Competitividad, CENIT10 10/158. Duration: 01/01/2011-31/12/2012.

Gasull X. **Inflamación y dolor ocular: implicación de los canales ASIC (acid-sensing ion channels) como dianas farmacológicas.** Sponsored by: Ministerio de Ciencia e Innovación, PI11/01601. Duration: 31/12/2011-31/12/2014.

Valls J. **Neurofisiologia del dolor, epilèpsia, son i control motor (NEDESC).** Sponsored by: Generalitat de Catalunya - AGAUR, SGR09_1253. Duration: 15/09/2009-31/12/2013.

Valls Sole J. **Organització Congrés: Noves estratègies per optimitzar l'adquisició i consolidació d'habilitats motores.** Sponsored by: Diputació de Barcelona 2012/1210. Duration: 01/01/2012-31/12/2012-.

Iranzo De Riquer A. **El trastorno de conducta durante el sueño REM y el SPECT cerebral del transportador de la dopamina (123i-FP-CIT) como marcadores diferenciales del deterioro cognitivo leve.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01732. Duration: 01/01/2012-31/12/2014.

Valls Sole J. **Nuevas estrategias para optimizar la adquisición y consolidación de habilidades motoras.** Sponsored by: Ministerio de Economía y Competitividad BFU2011-15462-E. Duration: 26/10/2011-25/10/2013.

Valls Sole J. **Non-invasive early neurophysiological interventions in brain and spinal cord injury patients.** Sponsored by: Marató TV3 110930. Duration: 31/01/2012-30/01/2015.

DOCTORAL THESES

Grau J.M.; Valls Sole J. **Assessment of small fiber neuropathy by nociceptive evoked potentials and skin biopsy.** Jordi Casanova Mollà.

Valls J. **Tms studies exploring the interaction betwen neuronal systems and networks in man.** PhD student: Jessica Alejandra Guzmán López.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Muscle research and mitochondrial function

TEAM INVOLVED IN: ciberer & ciberobn

GROUP MEMBERS

TEAM LEADER
Josep M. Grau Junyent
(Hospital Clínic)
Tel.: 93 227 30 74
E-mail: jmgrau@clinic.cat

RESEARCHERS:
Francesc Cardellach (Hospital Clínic)
Joaquim Fernández (Hospital Clínic)
José Maria Nicolas (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Glòria Garrabou (CIBERER)
Constanza Morén (CIBERER-FIPSE)

PRE-DOCTORAL RESEARCHERS:
Marc Catalán (Fundació Cellex)
Maria Bañó (Estudiant de màster)
Anna Sandra Hernàndez (Hospital Clínic)

TECHNICIANS:
Ester Tobias (PAS UB)

COLLABORATORS:
Emilia Antunez (Facultat de Medicina)
Xavier Bosch (Hospital Clínic)

STRATEGIC OBJECTIVES

1. Research in metabolic, muscle and primary mitochondrial diseases of patients attended by the Group of Medical Care of Adult Patients with Rare Diseases (Hospital Clínic of Barcelona).
2. Research in other Rare Diseases with mitochondrial basis, such as Parkinson disease (associated to mutations in Parkin and LRRK2 genes), inclusion body myositis, obstetric problems (especially intrauterine growth restriction) and inflammatory and autoimmune muscle diseases.
3. Secondary mitochondrial pathology due to contact with toxic agents: gases as CO and NO, abuse drugs as tobacco, chemical products as methylene chloride, biological agents as HIV and pharmacological drugs as antibiotics, antipsychotics, antiretrovirals and hypolipemiant agents.
4. Mitochondrial dysfunction secondary to other medical problems such as lipodystrophy, hyperlactatemia, peripheral neuropathy, sepsis, schizophrenia or infertility and physiological processes (cell division, aging or inflammation).
5. Study of the pathological mechanisms of alcohol upon the organ cells and its pathological effects at neurological and cardiocirculatory level: (i) Prognosis of alcoholic myocardiopathy and its best management options; (ii) Study of muscle and myocardial apoptosis in subjects presenting chronic alcohol abuse; (iii) Study of myocardial regeneration in alcoholic cardiomyopathy; (iv) Study of factors influencing in myocyte hyperthrophy (myostatin, IGF-1).
6. Clinical and functional repercussions of chronic fatigue syndrome (CFS). (i) Evaluation of long-term effects of multidisciplinary treatment, (ii) Role and significance of co-morbid diseases in CFS, (iii) Influence of chemical and environmental factors in the pathogenesis of CFS.

7. Clinical and translational research on septic shock and multiorgan failure. Research on antibiotic policies in critically-ill patients.

Our future challenges are:

1. Deeply exploring primary mitochondrial basis of rare diseases with muscle and central nervous system involvement as well as secondary mitochondrial implication in toxicities, or physiological processes.
2. Cardiomyopathy and chronic fatigue. Improving knowledge in physiopathological mechanisms leading to disease in alcoholic cardiomyopathy and also in chronic fatigue syndrome in order to prevent or delay development of disease and apply potential treatment strategies.
3. To understand the pathophysiology in the development of organ failure in patients with severe sepsis and septic shock, as well as is to identify biological targets for prevention of organ damage.
4. Medical publishing: Study of the open-access movement. Comprehensive comparison of the editorial and ethical policies of open-access vs. non open-access journals through a case-control study.

MAIN LINES OF RESEARCH

1. Muscular pathology of mitochondrial, inflammatory and autoimmune origin.
2. Mitochondrial basis of other rare diseases such as Parkinson disease, inclusion body inclusion myositis and intrauterine growth restriction.
3. Mitotoxicity.
4. Mitochondrial involvement in physiological processes.
5. Cardiomyopathy in chronic alcoholic patients.
6. Chronic fatigue syndrome.
7. Septic shock and organ failure in critically-ill patients.
8. Journalology: research of editorial and ethical policies of biomedical journals.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	-	-	-	-
2011	-	-	-	-
2012*	47.50	11	6	3

* Team created in 2012

ORIGINALS
I.F.: 47.50

1 Anton J.M.; Castro P.; Espinosa G.; Marcos M.; Gandia M.; Merchan R.; Cervera R.; Nicolas J.M. **Mortality and long-term survival prognostic factors of patients with systemic autoimmune diseases admitted to an intensive care unit: a retrospective study.** CLINICAL AND EXPERIMENTAL RHEUMATOLOGY 30 (3): 338-344. **I.F.: 2.15.**

2 Juanos Iborra M.; Selva-O'Callaghan A.; Solanich Moreno J.; Vidaller-Palacin A.; Marti S.; Grau Junyent J.M.; Vilardell Tarres M. **Erdheim-Chester disease: study of 12 cases.** MEDICINA CLINICA 139(9):398-403. **I.F.: 1.38.**

3 Trabal J.; Leyes P.; Fernandez-Sola J.; Forga M.; Fernandez-Huerta J. **Patterns of food avoidance in chronic fatigue syndrome; is there a case for dietary recommendations?** NUTRICION HOSPITALARIA 27 (2): 659-662. **I.F.: 1.12.**

4 Masanes F.; Culla A.; Navarro-Gonzalez M.; Navarro-Lopez M.; Sacanella E.; Torres B.; Lopez-Soto A. **Prevalence of sarcopenia in healthy community-dwelling elderly in an urban area of Barcelona (Spain).** JOURNAL OF NUTRITION HEALTH & AGING 16 (2): 184-187. **I.F.: 2.69.**

5 Prieto-Gonzalez S.; Arguis P.; Garcia-Martinez A.; Espigol-Frigole G.; Tavera-Bahillo I.; Butjosa M.; Sanchez M.; Hernandez-Rodriguez J.; Grau J.M.; Cid M.C. **Large vessel involvement in biopsy-proven giant cell arteritis: prospective study in 40 newly diagnosed patients using CT angiography.** ANNALS OF THE RHEUMATIC DISEASES 71 (7): 1170-1176. **I.F.: 8.73.**

6 Garrabou G.; Moren C.; Lopez S.; Tobias E.; Cardellach F.; Miro O.; Casademont J. **The Effects of Sepsis on Mitochondria.** JOURNAL OF INFECTIOUS DISEASES 205 (3): 392-400. **I.F.: 6.41.**

7 Morén C.; Noguera-Julian A.; Garrabou G.; Catalán M.; Rovira N.; Tobías E.; Cardellach F.; Miró Ò.; Fortuny C. **Mitochondrial evolution in HIV-infected children receiving first- or second-generation nucleoside analogues.** JAIDS-J ACQ IMM DEF 60(2):111-6. **I.F.: 4.42.**

8 Hernàndez S.; Morén C.; López M.; Coll O.; Cardellach F.; Gratacós E.; Miró O.; Garrabou G. **Perinatal outcomes, mitochondrial toxicity and apoptosis in HIV-treated pregnant women and in-utero-exposed newborn.** AIDS 26(4):419-28. **I.F.: 6.24.**

9 Casanova-Molla J.; Morales M.; Garrabou G.; Solà-Valls N.; Soriano A.; Calvo M.; Grau J.M.; Valls-Solé J. **Mitochondrial loss indicates early axonal damage in small fiber neuropathies.** J PERIPHER NERV SYST 17(2):147-57. **I.F.: 2.80.**

10 Cuatrecasas G.; Alegre C.; Fernandez-Solà J.; Gonzalez M.J.; Garcia-Fructuoso F.; Poca-Dias V.; Nadal A.; Cuatrecasas G.; Navarro F.; Mera A.; Lage M.; Peinó R.;Casanueva F.; Liñan C.; Sesmilo G.; Coves M.J.; Izquierdo J.P.; Alvarez I.; Granados E.; Puig-Domingo M. **Growth hormone treatment for sustained pain reduction and improvement in quality of life in severe fibromyalgia.** PAIN 153(7):1382-9. **I.F.: 5.78.**

11 Casanova-Molla J.; Morales M.; Planas-Rigol E.; Bosch A.; Calvo M.; Grau-Junyent J.M.; Valls-Sole J. **Epidermal Langerhans cells in small fiber neuropathies.** PAIN 153 (5): 982-989. **I.F.:5.78.**

REVIEWS
I.F.: 7.87

1 Trallero-Araguas E.; Rodrigo-Pendas J.A.; Selva-O'Callaghan A.; Martinez-Gomez X.; Bosch X.; Labrador-Horrillo M.; Grau-Junyent J.M.; Vilardell-Tarres M. **Usefulness of anti-p155 autoantibody for diagnosing cancer-associated dermatomyositis: A systematic review and meta-analysis.** ARTHRITIS AND RHEUMATISM 64 (2): 523-532. **I.F.: 7.87.**

GRANTS FOR RESEARCH IN PROGRESS

Grau J. **Grup de Recerca Muscular. Miopatías inflamatorias, tóxicas y mitocondriales.** Sponsored by: –AGAUR (Generalitat de Catalunya) 2009_SGR_1158. Duration: 23/09/2009-31/12/2013.

Rubin E.; Fernández-Solà J. **Title: P30 Resource Core Alcohol Center "Integrated Resource for Basic and Translational Alcohol Researh".** Duration: 01/01/2010 to 01/12/2015. Sponsored by: National Health Institutes (NIH) (network collaboration in alcohol research).

Fernández-Solà J. **Cell Death in Alcoholic Heart and Muscle.** Duration: 30/09/2012 to 30/09/2017. Sponsored by: National Institutes of Health (NIH), Bethesda, MD, USA. Code: NIH IU01AA021122-01.

DOCTORAL THESES

Grau J.M.; Valls J. **Assessment of small fiber neuropathy by nociceptive evoked potentials and skin biopsy.** PhD student: Jordi Casanova Molla.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Cellular biology of pathological processes

TEAM INVOLVED IN: ciberned & Red de Terapia Celular

GROUP MEMBERS

TEAM LEADER
Jordi Alberch
(Universitat de Barcelona)
Tel.: 93 403 52 85
E-mail: alberch@ub.edu

RESEARCHERS:
Josep M. Canals (UB)
Esther Pérez (UB)
Silvia Ginés (UB)

POST-DOCTORAL RESEARCHERS:
Verónica Brito (CHDI Foundation)
Miriam Esgleas (IDIBAPS)
Albert Giralt (UB)
Andrés Míguez (IDIBAPS)
Ana Saavedra (Juan de la Cierva, UB)
Philip Sanders (CHDI Foundation)
Marco Straccia (CHDI Foundation)

PRE-DOCTORAL RESEARCHERS:
Laura Rué (UB)
Mar Puigdellívol (CHDI Foundation)
Marta Anglada (FPI, UB)
Andreas Mezger (FPU-UB)
Mónica Pardo (FI-UB)
Marta Cherubini (CIBERNED)
Gerardo García (UB)
Shiraz Tyebji (FI, UB)
Rafael Alcalá (FPI, UB)

TECHNICIANS:
Cristina Herranz (IDIBAPS)
Ana López (CIBERNED)
Maite Muñoz (UB)
Laetitia Casano (CHDI Foundation)

COLLABORATORS:
Raquel Martín-Ibáñez (CIBERNED-UB)
Xavier Xifro (UG)

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Cellular biology of pathological processes

STRATEGIC OBJECTIVES

1. Study of the cellular and molecular bases involved in neuronal dysfunction and death associated with basal ganglia neurodegenerative disorders, mainly Huntington's disease. Our aim is to identify intracellular pathways – both neuroprotective and apoptotic – that are selectively altered in the affected neuron populations, with the ultimate purpose of identifying new therapeutic targets in the management of these neurodegenerative diseases.
2. Identification of the mechanisms participating in the cognitive defects seen in Huntington's disease. Knowledge of these mechanisms will make it possible to develop new treatments for avoiding the cognitive disorders induced by the mutated huntingtin gene.
3. Characterization of the mechanisms of neuron differentiation of stem cells from different organs. Our aim is to identify different extrinsic and intrinsic factors contributing to neuron differentiation, with the aim of employing stem cells in cell substitution therapies against neurodegenerative diseases.

MAIN LINES OF RESEARCH

1. Study of the implication of neurotrophic factors in the physiopathology and treatment of neurodegenerative diseases of the basal ganglia.
2. Study of the intracellular signaling cascades implicated in the degeneration of striatal and hippocampal neurons in Huntington's disease.
3. Study of the mechanisms underlying the differentiation of stem cells into neurons, for application to cellular therapy in neurodegenerative diseases such as Huntington's chorea.
4. Characterization of extrinsic factors and new transcription factors of the development of human and mouse nucleus striatum.

PUBLICATIONS

ORIGINALS
I.F.: 39.22

1 Giralt A.; Puigdellivol M.; Carreton O.; Paoletti P.; Valero J.; Parra-Damas A.; Saura C.A.; Alberch J.; Gines S. **Long-term memory deficits in Huntingtons disease are associated with reduced CBP histone acetylase activity.** HUMAN MOLECULAR GENETICS. 21 (6): 1203-1216. **I.F.: 7.64.**

2 Anglada-Huguet M.; Giralt A.; Perez-Navarro E.; Alberch J.; Xifro X. **Activation of Elk-1 participates as a neuroprotective compensatory mechanism in models of Huntington's disease.** JOURNAL OF NEUROCHEMISTRY. 121 (4): 639-648. **I.F.: 4.06.**

3 Moreno B.; Di Penta A.; Fernandez B.; Errea O.; Agirrezabal I.; Escala N.; Matute C.; Sanchez M.V.; Domercq M.; Gottlieb M.; Cena V.; Posadas I.; Lopez I.; Alberch J.; Giralt A.; Parent J.M.; Zhang H.; Teixido M.; Giralt E.; Villoslada P. **Methylthioadenosine promotes neuroprotection for inflammatory and excitotoxic brain diseases.** JOURNAL OF NEUROIMMUNOLOGY. 253: 173-174. **I.F.: 2.96.**

4 Sanchez-Danes A.; Richaud-Patin Y.; Carballo-Carbajal I.; Jimenez-Delgado S.; Caig C.; Mora S.; Di Guglielmo C.; Ezquerra M.; Patel B.; Giralt A.; Canals J.M.; Memo M.; Alberch J.; Lopez-Barneo J.; Vila M.; Cuervo A.M.; Tolosa E.; Consiglio A.; Raya A. **Disease-specific phenotypes in dopamine neurons from human iPS-based models of genetic and sporadic Parkinson's disease.** EMBO MOLECULAR MEDICINE. 4 (5): 380-395. **I.F.: 10.33.**

5 Canela L.; Selga E.; García-Martínez J.M.; Amaral O.B.; Fernán-

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	65.35	11	10	1
2011	74.18	12	9	0
2012	39.22	8	5	1

dez-Dueñas V.; Alberch J.; Canela E.I.; Franco R.; Noé V.; Lluís C.; Ciudad C.J.; Ciruela F. **Transcriptional profiling of striatal neurons in response to single or concurrent activation of dopamine D2,adenosine A(2A) and metabotropic glutamate type 5 receptors: focus on beta-synuclein expression.** GENE. 508(2):199-205. **I.F.: 2.34.**

6 Carretón O.; Giralt A.; Torres-Peraza J.F.; Brito V.; Lucas J.J.; Ginés S.; Canals J.M.; Alberch J. **Age-dependent decline of motor neocortex but not hippocampal performance in heterozygous BDNF mice correlates with a decrease of cortical PSD-95 but an increase of hippocampal TrkB levels.** EXP NEUROL. 237(2):335-45. **I.F.: 4.70.**

7 Ruiz C.; Casarejos M.J.; Rubio I.; Gines S.; Puigdellivol M.; Alberch J.; Mena M.A.; De Yebenes J.G. **The dopaminergic stabilizer, (-)-OSU6162, rescues striatal neurons with normal and expanded polyglutaminechains in huntingtin protein from exposure to free radicals and mitochondrial toxins.** BRAIN RES. 1459:100-12. **I.F.: 2.73.**

8 Martín-Ibáñez R.; Crespo E.; Esgleas M.; Urban N.; Wang B.; Waclaw R.; Georgopoulos K.; Martínez S.; Campbell K.; Vicario-Abejón C.; Alberch J.; Chan S.; Kastner P.; Rubenstein J.L.; Canals J.M. **Helios transcription factor expression depends on Gsx2 and Dlx1&2 function in developing striatal matrixneurons.** STEM CELLS DEV. 21(12):2239-51. **I.F.: 4.46.**

GRANTS FOR RESEARCH IN PROGRESS

Canals J.M. **Red de Terapia Celular.** Sponsored by: Ministerio Sanidad y Consumo, RD06/0010/0006. Duration: 01/01/2007-31/12/2013.

Alberch J. **Habilitación de salas GMP para el programa de terapia celular de la Facultat de Medicina.** Sponsored by: Ministerio de Ciencia e Innovación (MICINN), PLE2009-0128. Duration: 01/11/2009-30/04/2013.

Canals J.M. **Mejora de la supervivencia y diferenciación de células madre neurales humanas para terapia celular de la enfermedad de Huntington.** Sponsored by: Ministerio de Ciencia e Innovación (MICINN), PLE2009-0089. Duration: 01/11/2009-31/01/2013.

Canals J.M. **Stem cell Differentiation JSC-Joint Collaborative effort between the IDIBAPS, Univ of Milano and Univ of Cardiff.** Sponsored by: CHDI Foundation A-4530. Duration: 01/01/2012-31/12/2013.

Gines S. **Role of p75 Neurotrophin Receptor in Huntington's Disease.** Sponsored by: HIGH Q FOUNDATION - INC -OFICIAL, A-3468. Duration: 01/05/2010-30/04/2013.

Gines S. **Role of Cdk5 in Striatal and Hippocamapl Pathology in Huntingtons Disease.** Sponsored by: HIGH Q FOUNDATION - INC -OFICIAL, A-3880. Duration: 01/11/2010-31/10/2013.

Gines S. **Estudio de las cascadas de señalización asociadas a la activación dopaminérgica y glutamatérgica como estrategia terapéutica en modelos murinos de la enfermedad de Huntington: Papel de la vía de Cdk5.** Sponsored by: Ministerio de Ciencia e Innovación, SAF2009-07077. Duration: 01/01/2009-31/12/2012.

Gines S. **Cdk5: una diana terapéutica para el tratamiento de los déficits motores y cognitivos en la Enfermedad de Huntington.** Sponsored by: Fundación Ramon Areces. Duration 7/2012-6/2015.

Canals J.M. **Caracterización de nuevos factores de transcripción para la diferenciación neuronal de células madre para la enfermedad neurodegenerativa de Huntington.** Sponsored by: Ministerio de Ciencia e Innovación (MICINN), SAF2009-07774. Duration: 01/01/2010-31/12/2012.

Alberch J. **Fisiopatología de las enfermedades neurodegenerativas.** Sponsored by: Generalitat de Catalunya, SGR2009-00326. Duration: 01/01/2009-31/12/2013.

Canals J.M. **Terapia Celular: Implicación de células madre adultas.** Sponsored by: CMRB-Generalitat de Catalunya, PROMT-0901. Duration: 01/01/2010-31/12/2012.

Perez E. **Regulación de la vía PKA como estrategia terapéutica para la enfermedad de Huntington.** Sponsored by: Fondo de Investigaciones Sanitarias, Instituto de Salud Carlos III, Ministerio de Ciencia e Innovación, PI10/0172. Duration: 10/12/2010-10/12/2013.

DOCTORAL THESES

Pérez E. **Characterization of the mechanisms underlying alterations in macroautophagy and survival signalling in huntington's disease.** PhD student: Laura Rué Cabré.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Biological bases of psychiatric disorders and nuclear psychiatry

TEAM INVOLVED IN: cibersam

GROUP MEMBERS

TEAM LEADER
Miquel Bernardo (Hospital Clínic)
Tel.: 93 227 54 00 (Ext 3142)
E-mail: bernardo@clinic.cat

GROUP LEADERS:
Eduard Vieta (Hospital Clínic)
Miquel Bernardo (Hospital Clínic)
Cristobal Gastó (Hospital Clínic)
Josefina Castro (Hospital Clínic)

RESEARCHERS:
Rosa Catalán (Hospital Clínic)
Antoni Gual (Hospital Clínic)
Fernando Gutierrez (Hospital Clínic)
Amalia Lafuente (TU)
Luisa Lázaro (Hospital Clínic)
Francisco J. Lomeña (Hospital Clínic)
Anabel Martínez-Arán (Hospital Clínic)
Guillem Masana (Hospital Clínic)
Eduard Parellada (Hospital Clínic)
Luis Pintor (Hospital Clínic)
Mercè Torra (Hospital Clínic)
Manuel Valdés (Hospital Clínic)
Antonio Benabarre (Hospital Clínic)
Rocío Martín-Santos (Hospital Clínic)
Francesc Colom (Fundació Clínic)
Lluïsa Garcia-Esteve (Hospital Clínic)
Inmaculada Baeza (Hospital Clínic)
Astrid Morer Liñán (Hospital Clínic)
Susana Andrés (Hospital Clínic)
Rafel Penadés (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Patricia Gasso (Fundació Clínic)
Rosa Calvo (Hospital Clínic)
Elena de la Serna (CIBERSAM)
Caterina del Mar Bonnin (IDIBAPS)
Isabella Pachiarotti (CIBERSAM)
Marc Valentí (IDIBAPS)
Clemente Garcia-Rizo (Hospital Clínic)
Núria Cruz (CIBERSAM)
Vanessa Sánchez (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
José Sánchez-Moreno (CIBERSAM)
Andrea Murru (Fundació Clínic)
Brisa Solé (IDIBAPS)
Miquel Bioque (CIBERSAM)
Alicia Valiente (Hospital Clínic)
Esther Jimenez (IDIBAPS)
Alessandra Nivoli (Fundació Clínic)
Javier Goti (Hospital Clínic)
Maria Teresa Plana (Hospital Clínic)
Soledad Romero (Hospital Clínic)
Bibiana Cabrera (Fundació Clínic)
Nuria Pujol (IDIBAPS)
Olga Puig (Hospital Clínic)
M Luisa Imaz (Hospital Clínic)
Anna Torres (Hospital Clínic)
Juan Undurraga (Hospital Clínic)
Iria Grande (Hospital Clínic)
Gisela Mezquida (Fundació Clínic)

TECHNICIANS:
M Alicia Durán (Fundació Clínic)
Rosa Maria Palaus (Fundació Clínic)

NURSING STAFF:
Ana Meseguer (CIBERSAM)

ADMINISTRATIVE STAFF:
Anna Folch (CIBERSAM)

COLLABORATORS:
Jordi Blanch (Hospital Clínic)
Mercè Comes (Hospital Clínic)
Jose Manuel Goikolea (Hospital Clínic)
Ester Gómez (Hospital Clínic)
Joana Guarch (Hospital Clínic)
Teodoro Marcos (Hospital Clínic)
Sergi Mas Herrero (Associat)
Victor Navarro (Hospital Clínic)
Maria Reinares (CIBERSAM)
Carla Torrent (CIBERSAM)
Piero Castro Loli (Fundació Clínic)
Carolina Franco (Hospital Clínic)
Adriane R. Rosa (IDIBAPS)
Cristina V. Oliveira (Fundació Clínic)
Pere Castellví (CIBERSAM)
Rosa Díaz (Hospital Clínic)
Enric Buisan (ForumClínic)

STRATEGIC OBJECTIVES

Our group studies serious psychiatric disorders from the neurobiological and therapeutic perspectives, based on the following 6 research lines: bipolar disorders, schizophrenia and depression-anxiety, pediatric psychiatry and psychology, psychiatric intervention in medical pathology and alcoholism.

MAIN LINES OF RESEARCH

The **bipolar disorders** program mainly investigates the neurobiological and anatomofunctional mechanisms implicated in the development of the disease (genetics, neuromodulators, hormone factors and neuroimaging) and its relapses, the clinical course and neuropsychological consequences, the efficacy of drug treatments and novel therapies, and psychological interventions for the early detection and prevention of recurrences – increasing treatment compliance and improving the efficacy of the therapeutic strategies applied to bipolar disorder. The strategic objectives are to investigate the causes and mechanisms involved in the etiopathogenesis of bipolar disorder, and to investigate new treatments with a view to improving the prognosis of the disease.

The **schizophrenia** program focuses research on the first schizophrenic episodes and on resistant and comorbid schizophrenia, through functional neuroimaging (brain perfusion and receptors SPECT, PET and functional magnetic resonance imaging). Sensory and cognitive neuroactivation studies have been made with frontal activation neuropsychological tests and dopaminergic receptor occupation studies, as well as studies of the presynaptic dopaminergic function. A program has been developed for characterizing and preventing second psychotic episodes, in order to design preventive strategies allowing us to influence the course of the disease. Likewise, plasma metabolites of dopamine have been investigated as biological indicators of relapse in a prospective longitudinal follow-up and treatment response study. We have examined the role of schizophrenia in the development of cardiovascular and metabolic diseases, and secondarily also the role of antipsychotic drugs. The pharmacogenetics of antipsychotic drugs has been studied to assess the efficacy and safety of these drugs on the basis of the individual patient genetic characteristics. Specifically, we have analyzed the pharmacogenetics of the extrapyramidal effects caused by antipsychotic drug therapy, the polymorphisms associated with the risk of schizophrenia, and new pharmacogenetic techniques for implantation at healthcare and hospital level. A psychoeducational program is adopting new knowledge transmission and exchange formulas, with the application of new technologies and offering rigorous and communicatively adequate contents. The FòrumClínic web (www.forumclinic.org) is an interactive program designed to increase patient autonomy in relation to personal health.

The **Alcohol Unit** is the reference in Catalonia for the treatment of alcohol dependency. We are one of the main research groups in Spain and we also have a European leadership position in the area of brief interventions designed to reduce consumption among at risk drinkers. This leadership allowed us to coordinate two FP7 European projects: Amphora (www.amphoraproject.net) and Odhin (www.odhinproject.eu), and to be partners also in two SANCO projects: EWA and Bistairs. A number of research lines are being conducted in the context of the Alcohol Unit. The main lines are the following: Prospective longitudinal study of alcohol dependent patients; Follow-up of a cohort of 850 patients starting treatment in 1987 in the Catalan Drug Dependencies Network (Xarxa Catalana de Drogodependències); Screening instruments and techniques for early detection and brief interventions in risky drinkers in hospital and primary care settings; Evaluation and prognosis of alcoholic patients candidates for liver transplantation; treatment of smoking in alcoholic patients; and Evaluation of the European alcohol policies and their public health impact. In 2011 we started a new European project that expands the scope of the Unit towards other addictive behaviors, keeping the focus on public health from an interdisciplinary perspective. The project is called Alice Rap (www.alicerap.eu). Finally, we must also mention the research on anticraving drugs, because we have already completed a trial with Nalmefene and another one with Sodium Oxibate is ongoing.

The line relating to **depression** aims to implement new psychopathological and biological endophenotypic methods in application to major depression, with the development of mechanisms for the analysis of the mechanism of action of antidepressant drugs based on the platelet model of depression (developed together with the hemostasis group led by Prof. Ginés-Escolar); the investigation of neurotrophic factors (BDNF) in depressive patients; and the exploration of factors conditioning the residual symptoms of major depression.

The main research lines of the **pediatric psychiatry and psychology research group** of the Hospital Clínic are the following:

- Schizophrenia and bipolar disorder: Study and follow-up of the first psychotic episodes, cognitive rehabilitation of adolescent patients with schizophrenia, study of children and adolescents with a high genetic risk of developing schizophrenia and bipolar disorder (offspring of

patients with such disorders), study of the prodromic manifestations of psychotic disorders in children and adolescents, and study of the tolerance and safety of antidepressants in children and adolescents.

- Anorexia and bulimia nervosa, and obsessive-compulsive disorder: Study of the common and differential alterations (genetic, neuropsychological and neuroimaging) of anorexia nervosa and obsessive-compulsive disorder, study of new management approaches (psychological and pharmacological) in bulimia and anorexia nervosa, and study of autoimmune alterations in obsessive behavior and in anorexia.
- Others: mention should be made of the investigation of **addictive behaviors**, analyzing the percentages of patients seen in the Department of Pediatric Psychiatry with different disorders and who moreover consume, abuse of or show dependency of toxic substances – exploring the efficacy of new multimodal management modalities for addictive behavior in adolescents. In addition, the study line of the efficacy and safety of psychoactive drugs in children and adolescents focuses on the evaluation and follow-up of the side effects of these drugs in children and adolescents, as well as on the identification of pharmacogenetic predictors of drug response in such patients. The study line in **autistic spectrum** disorders explores the efficacy of new psychological and pharmacological treatments in these disorders, with examination of the neuropsychological profile of children with highfunction autistic spectrum disorders and the correlation to clinical variables. Mention also should be made of the line for the development and validation of scales in application to different pathologies or symptoms. In turn, the line referred to attention deficit hyperactivity disorder (ADHA) involves the neuropsychological, clinical and neuroimaging assessment of predominantly inattentive children versus children with combined-type attention deficit. Lastly, the research line in autoimmune/Tourette syndrome explores the inflammatory and autoimmune processes, and their relation to serious psychiatric pathology, in children and adolescents.

The line of **psychiatric intervention in clinical pathology** has focused research on knowledge of the psychiatric alterations seen in the main neurological diseases: dementia, multiple sclerosis, epilepsy, Parkinson's disease and Huntington's disease. The study of psychiatric disease and psychological aspects associated with medical-surgical hospital processes in turn addresses: transplantation, delirium, psychiatric problems in clinical patients admitted to a general hospital, the evaluation of predictive variables and factors associated with suicide in a general hospital. In outpatients setting the research has been focused on clinical and biological markers related with gender identity disorder (transsexual population).

Studies are also made of the biological markers and therapeutic aspects of major depression. Investigations likewise have been conducted into personality disorders: the structure of the diagnostic systems, their relationship to adjustment to the environment and the validation of new models and instruments.

RESEARCH GROUP

RESEARCH GROUP IN PEDIATRIC PSYCHIATRY AND PSYCHOLOGY

Group Leader:
Josefina Castro (Hospital Clínic)

The research group in childhood psychology and psychiatry of the Clinic Hospital forms part of the Department of Childhood and Adolescent Psychiatry, which has developed three fields: healthcare, teaching and research. These fields are all clearly interrelated with a view to affording better healthcare, with standardized protocols and evaluation and teaching at pre- and postgraduate level. Our aim is to facilitate both clinical research and collaboration with groups specialized in genetics, neuroimaging and neurobiology. The group is predominantly composed of members of the Department of Childhood Psychology and Psychiatry, and is integrated within the Biological Bases of Psychiatric Disorders group (coordinated by Dr. M. Bernardo). It also forms part of the CIBERSAM (Centro de Investigación Biomédica en Red de Salud Mental) of the Carlos III Healthcare Institute. In addition, it has established important collaboration agreements with the Department of Adult Psychiatry of the Clinic Hospital (especially as refers to schizophrenia, bipolar disorder and addictive behavior), as well as with other centers at international level, such as the Childhood Psychiatry Group of the ECNP (European College of Neuopsychopharmacology), with which relevant aspects of childhood psychopharmacology are investigated in the context of different projects, the University of Pittsburgh Medical Center, Neuroimaging Laboratory, Western Psychiatric Institute and Clinic, Pittsburgh (United States), with which studies are made in relation to bipolar disorder, and the Child and Adolescent Psychiatry Yale Child Study Center, New Haven (United States), with which aspects relating to autoimmunity are studied. Our research objectives are the study of the manifestations, causes and treatment of the most serious and/or prevalent disorders found in these age groups: schizophrenia and bipolar disorder, anorexia and bulimia nervosa, obsessive-compulsive behavior, autistic disorders, attention deficit disorders, and addictive behaviors. In parallel, other lines have been developed related to the efficacy and safety of psychoactive drugs in children and adolescents, the development and validation of assessment scales, and the investigation of autoimmunity and psychiatric disease such as Tourette syndrome.

RESEARCH GROUP
BIPOLAR DISORDERS

Group Leader: Eduard Vieta (Hospital Clínic)

The bipolar disorder program has been recognized as a consolidated research group (2009 SGR 1022) by the Agency for the Management of University and Research Aids (Agència de Gestió d'Ajuts Universitaris i de Recerca, AGAUR). The bipolar disorders program fundamentally investigates the neurobiological and anatomo-functional mechanisms involved in the development of the disease and its clinical course, comorbidity with other diseases, the implicated neurocognitive mechanisms, and the search for new pharmacological, biophysical and psychosocial treatments designed to improve the prognosis and quality of life of the patients. The program is characterized by a multidiscipline approach and includes psychiatrists, psychologists, pharmacologists, biologists, nurses, social workers and personnel in training. Our group has pioneered effort in the characterization of associated neurocognitive dysfunction, and the functional remediation, the development of new drug treatments, and in the implementation of psychoeducational techniques targeted at both patients and their relatives. As a result of such research and innovation, the main international diagnostic and treatment guides document these contributions and recommend their application in clinical practice. Our program is carried out in active collaboration with other groups of the IDIBAPS, with other groups of the CIBERSAM, and with European and other international research centers, with a view to conducting multicenter studies with a special dedication to translational and innovative investigation.

RESEARCH GROUP
SCHIZOPHRENIA

Group Leader: Miquel Bernardo (Hospital Clínic)

The Clinical Schizophrenia Group (GEC) has been recognized as a consolidated research group (2005SGR00223; 2009SGR1295) by the Agency for the Management of University and Research Aids (Agència de Gestió d'Ajuts Universitaris i de Recerca, AGAUR) since the year 2005. In 2011 we received the National Health System Best in Class Prize, to the Best Schizophrenia Unit in the Patient Care Expertise in Schizophrenia category. This grant is awarded by Gaceta Médica and the Cátedra de Innovación y Gestión Sanitaria of the Universidad Rey Juan Carlos. This is an interdisciplinary group composed of psychiatrists, psychologists, neuropsychologists, nurses, physicians specialized in nuclear medicine, physicists, pharmacologists, toxicologists and biochemists linked to the Clinic Hospital and the University of Barcelona. Ours is a group of investigators forming part of the Clinical Schizophrenia Program (PEC) and working in disorders related to schizophrenia. This is a clinical care, research and teaching program at both hospital and outpatient level that includes different management and research protocols designed to address problems raised by schizophrenia and which integrates the different resources of the Barcelona Clinic Hospital. In the year 2007, the group became a constituting member of the Network of Mental Diseases and Affective and Psychotic Disorders (REMTAP), and in 2008 we likewise became a constituting member of the Center of Biomedical Research in Mental Health Network (CIBERSAM) (www.cibersam.es). The Clinical Schizophrenia Group centers its research on the study of the first schizophrenic episodes, schizophrenia starting in childhood/adolescence, and resistant and comorbid schizophrenia. The main research lines are physical health, neuroimaging, psychoeducation and psychometric evaluation, genetics, neurobiology and neuropsychopharmacology in schizophrenia, with a supervisor for each of them, under the coordination of Dr. Miguel Bernardo. Another research line focuses on childhoodand adolescent-onset schizophrenia – these representing a high risk population for schizophrenia. This line is conducted in close collaboration with the Department of Childhood and Adolescent Psychiatry of the Clinic Hospital, directed by Dr. Castro, together with Drs. Baeza, Lázaro and Sánchez-Gistau (Study of high genetic risk for schizophrenia and early onset schizophrenia).

EMERGENT GROUP
CLINICAL DEPRESSION GROUP

Group Leader:
Cristobal Gastó (Hospital Clínic)

Our group is specialized in the investigation of the neurobiological bases and clinical indicators of depression associated with treatment response and the course of this disease. It has been estimated that depression affects 10% of all people at some point in their lives. Depression is currently one of the most important health problems, particularly considering its slow and sometimes incomplete resolution. This disorder significantly interferes with the normal functions of the patients and their relatives, and implies a suicide risk in more than 10% of cases. The project of the World Health Organization (WHO) for the year 2020 considers that depression will be the second cause of disability after cardiovascular disease. In Europe it has been estimated that about 30 million people suffer some form of depression, generating an annual cost of approximately 100 billion euros. Our group is actively involved in the early detection and treatment of this disease, and its comorbidities (medical and psychiatric). The genetic and neuroendocrine markers we are investigating have contributed better understanding of the physiopathological mechanisms of depression. Likewise, a number of investigators in our group are actively working on the design of new individual- and group-based pharmacological and psychotherapeutic management strategies.

PUBLICATIONS

ORIGINALS
I.F.: 339.62

1 Alvarez-Larran A.; Rimola J.; Lomena F.; Rozman M. **A 67 year-old male with abdominal pain, splenomegaly, lymphadenopathies, and bone density changes.** MEDICINA CLINICA. 139: 300-306. **I.F.: 1.38.**

2 Gasso P.; Mas S.; Alvarez S.; Ortiz J.; Sotoca J.M.; Francino A.; Carne X.; Lafuente A. **A common variant of the ABO gene protects against hypertension in a Spanish population.** HYPERTENSION RESEARCH. 35 (6): 592-596. **I.F.: 2.58.**

3 Vieta E.; Montgomery S.; Sulaiman A.H.; Cordoba R.; Huberlant B.; Martinez L.; Schreiner A. **A randomized, double-blind, placebo-controlled trial to assess prevention of mood episodes with risperidone long-acting injectable in patients with bipolar I disorder.** EUROPEAN NEUROPSYCHOPHARMACOLOGY. 22: 825-835. **I.F.: 4.05.**

4 Anaya C.; Martinez Aran A.; Yuso-Mateos J.L.; Wykes T.; Vieta E.; Scott J. **A systematic review of cognitive remediation for schizo-affective and affective disorders.** JOURNAL OF AFFECTIVE DISORDERS. 142: 13-21. **I.F.: 3.52.**

5 Martin-Santos R.; Crippa J.A.; Batalla A.; Bhattacharyya S.; Atakan Z.; Borgwardt S.; Allen P.; Seal M.; Langohr K.; Farre M.; Zuardi A. W.; McGuire P. K. **Acute Effects of a Single, Oral dose of d9-tetrahydrocannabinol (THC) and Cannabidiol (CBD) Administration in Healthy Volunteers.** CURRENT PHARMACEUTICAL DESIGN. 18: 4966-4979. **I.F.: 3.87.**

6 Baldessarini R.J.; Tondo L.; Vazquez G.H.; Undurraga J.; Bolzani L.; Yildiz A.; Khalsa H.M.K.; Lai M.; Lepri B.; Lolich M.; Maffei P.M.; Salvatore P.; Faedda G.L.; Vieta E.; Tohen M. **Age at onset versus family history and clinical outcomes in 1,665 international bipolar-I disorder patients.** WORLD PSYCHIATRY. 11 (1): 40-46. **I.F.: 6.23.**

7 Gonzalez-Pinto A.; Martinez-Cengotitabengoa M.; Arango C.; Baeza I.; Otero-Cuesta S.; Graell-Berna M.; Soutullo C.; Leza J.C.; Mico J.A. **Antioxidant defense system and family environment in adolescents with family history of psychosis.** BMC PSYCHIATRY. 12: 200. **I.F.: 2.55.**

8 Gonzalez-Pinto A.; Galan J.; Martin-Carrasco M.; Ballesteros J.; Maurino J.; Vieta E. **Anxiety as a marker of severity in acute mania.** ACTA PSYCHIATRICA SCANDINAVICA. 126: 351-355. **I.F.: 4.22.**

9 Bschor T.; Angst J.; Azorin J.M.; Bowden C. L.; Perugi G.; Vieta E.; Young A.H.; Krueger S. **Are bipolar disorders underdiagnosed in patients with depressive episodes? Results of the multicenter BRIDGE screening study in Germany.** JOURNAL OF AFFECTIVE DISORDERS. 142: 45-52. **I.F.: 3.52.**

10 Carreno M.; Aparicio J.; Sierra A.; Aceituno A.; Pintor L.; Bargallo N.; Setoain J.; Rumia J.; Boget T.; Donaire A.; Bailles E.; Fernandez S. **Are patients referred for presurgical evaluation drug resistant according to the new consensus definition? A study in a tertiary center.** EPILEPSY RESEARCH. 98 (2-3): 277-280. **I.F.: 2.29.**

11 Undurraga J.; Baldessarini R.J.; Valenti M.; Pacchiarotti I.; Tondo L.; Vazquez G.; Vieta E. **Bipolar depression: Clinical correlates of receiving antidepressants.** JOURNAL OF AFFECTIVE DISORDERS. 139 (1): 89-93. **I.F.: 3.52.**

12 Plaza A.; Garcia-Esteve Ll.; Torres A.; Ascaso C.; Gelabert E.; Imaz M.L.; Navarro P.; Valdes M.; Martin-Santos R. **Childhood physical abuse as a common risk factor for depression and thyroid dysfunction in the earlier postpartum.** PSYCHIATRY RESEARCH. 200: 329-335. **I.F.: 2.52.**

13 Grande I.; Balanza-Martinez V.; Jimenez-Arriero M.A.; Iglesias Lorenzo F.G.; Franch Valverde J.I.; De Arce R.; Zaragoza S.; Cobaleda S.; Vieta E. **Clinical factors leading to lamotrigine prescription in bipolar outpatients: Subanalysis of the SIN-DEPRES study.** JOURNAL OF AFFECTIVE DISORDERS. 143: 102-108. **I.F.: 3.52.**

14 Fraguas D.; Gonzalez-Pinto A.; Mico J.A.; Reig S.; Parellada M.; Martinez-Cengotitabengoa M.; Castro-Fornieles J.; Rapado-Castro M.; Baeza I.; Janssen J.; Desco M.; Leza J.C.; Arango C. **Decreased glutathione levels predict loss of brain volume in children and adolescents with first-episode psychosis in a two-year longitudinal study.** SCHIZOPHRENIA RESEARCH. 137 (1-3): 58-65. **I.F.: 4.75.**

15 Moreno C.; Hasin D.S.; Arango C.; Oquendo M.A.; Vieta E.; Liu S.M.; Grant B.F.; Blanco C. **Depression in bipolar disorder versus major depressive disorder: results from the National Epidemiologic Survey on Alcohol and Related Conditions.** BIPOLAR DISORDERS. 14 (3): 271-282 MAY 2012. **I.F.: 5.29.**

16 Navines R.; Castellvi P.; Moreno-Espana J.; Gimenez D.; Udina M.; Canizares S.; Diez-Quevedo C.; Valdes M.; Sola R.; Martin-Santos R. **Depressive and anxiety disorders in chronic hepatitis C patients: Reli-**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	271.16	75	50	12
2011	286.57	68	46	10
2012	339.62	88	63	13

ability and validity of the Patient Health Questionnaire. JOURNAL OF AFFECTIVE DISORDERS. 138 (3): 343-351. **I.F.: 3.52.**

17 Escamez T.; Bahamonde O.; Tabares-Seisdedos R.; Vieta E.; Martinez S.; Echevarria D. **Developmental Dynamics of PAFAH1B Subunits During Mouse Brain Development.** JOURNAL OF COMPARATIVE NEUROLOGY. 520: 3877-3894. **I.F.: 3.81.**

18 Angst J.; Gamma A.; Bowden C.L.; Azorin J.M.; Perugi G.; Vieta E.; Young A.H. **Diagnostic criteria for bipolarity based on an international sample of 5,635 patients with DSM-IV major depressive episodes.** EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE. 262 (1): 3-11. **I.F.: 3.49.**

19 Casanas R.; Catalan R.; Del Val J.L.; Real J.; Valero S.; Casas M. **Effectiveness of a psycho-educational group program for major depression in primary care: a randomized controlled trial.** BMC PSYCHIATRY. 12: 230. **I.F.: 2.55.**

20 Rumia J.; Marmol F.; Sanchez J.; Carrerno M.; Bargallo N.; Boget T.; Pintor L.; Setoain X.; Bailles E.; Donaire A.; Ferrer E.; Puig-Parellada P. **Eicosanoid levels in the neocortex of drug-resistant epileptic patients submitted to epilepsy surgery.** EPILEPSY RESEARCH. 99 (1-2): 127-131. **I.F.: 2.29.**

21 Flamarique I.; Castro-Fornieles J.; Garrido J.M.; De La Serna E.; Pons A.; Bernardo M.; Baeza I. **Electroconvulsive Therapy and Clozapine in Adolescents With Schizophrenia Spectrum Disorders Is It a Safe and Effective Combination?** JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY. 32: 756-766. **I.F.: 4.10.**

22 Amann B.; Gomar J.J.; Ortiz-Gil J.; McKenna P.; Sans-Sansa B.; Sarro S.; Moro N.; Madre M.; Landin-Romero R.; Vieta E.; Giokolea J.M.; Salvador R.; Pomarol-Clotet E. **Executive dysfunction and memory impairment in schizoaffective disorder: a comparison with bipolar disorder, schizophrenia and healthy controls.** PSYCHOLOGICAL MEDICINE. 42: 2127-2135. **I.F.: 6.16.**

23 Sala R.; Axelson D.A.; Castro-Fornieles J.; Goldstein T.R.; Goldstein B.I.; Ha W.H.; Liao F.Z.; Gill M.K.; Iyengar S.; Strober M.A;. Yen S.; Hower H.; Hunt J.I.; Dickstein D.P.; Ryan N.D.; Keller M.B.; Birmaher B. **Factors Associated With the Persistence and Onset of New Anxiety Disorders in Youth With Bipolar Spectrum Disorders.** JOURNAL OF CLINICAL PSYCHIATRY. 73 (1): 87-94. **I.F.: 5.80.**

24 Pomarol-Clotet E.; Moro N.; Sarro S.; Goikolea J.M.; Vieta E.; Amann B.; Fernandez-Corcuera P.; Sans-Sansa B.; Monte G.C.; Capdevila A.; Mckenna P.J.; Salvador R. **Failure of de-activation in the medial frontal cortex in mania: evidence for default mode network dysfunction in the disorder.** WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY. 13: 616-626. **I.F.: 2.38.**

25 Gomez-Caro A.; Boada M.; Cabanas M.; Sanchez M.; Arguis P.; Lomena Francisco; Ramirez J.; Molins L. **False-negative rate after positron emission tomography/computer tomography scan for mediastinal staging in cl stage non-small-cell lung cancer.** EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY. 42 (1): 93-100. **I.F.: 2.55.**

26 Blazquez A.; Mas S.; Plana M.T.; Lafuente A.; Lazaro L. **Fluoxetine pharmacogenetics in child and adult populations.** EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 21: 599-610. **I.F.: 2.82.**

27 Vieta E.; Cruz N. **Head to head comparisons as an alternative to placebo-controlled trials.** EUROPEAN NEUROPSYCHOPHARMACOLOGY. 22: 800-803. **I.F.: 4.05.**

28 Azorin J.M.; Angst J.; Gamma A.; Bowden C.L.; Perugi G.; Vieta E.; Young A. **Identifying features of bipolarity in patients with first-episode postpartum depression: Findings from the international BRIDGE study.** JOURNAL OF AFFECTIVE DISORDERS. 136 (3): 710-715. **I.F.: 3.52.**

29 Bauer M.; Glenn T.; Alda M.; Andreassen O.A.; Ardau R.; Bellivier F.; Berk M.; Bjella T.D.; Bossini L.; Del Zompo M.; Dodd S.; Fagiolini A.; Frye M.A.; Gonzalez-Pinto A.; Henry C.; Kapczinski F.; Kliwicki S.; Koenig B.; Kunz M.; Lafer B.; Lopez-Jaramillo C.; Manchia M.; Marsh W.; Martinez-Cengotitabengoa M.; Melle I.; Morken G.; Munoz R.; Nery F.G.; O'Donovan C.; Pfennig A.; Quiroz D.; Rasgon N.; Reif A.; Rybakowski J.; Sagduyu K.; Simhandl C.; Torrent C.; Vieta E.; Zetin M.; Whybrow P.C. **Impact of sunlight on the age of onset of bipolar disorder.** BIPOLAR DISORDERS. 14: 654-663. **I.F.: 5.29.**

30 Jimenez E.; Arias B.; Castellvi P.; Goikolea J.M.; Rosa A.R.; Fananas L.; Vieta E.; Benabarre A. **Impulsivity and functional impairment in bipolar disorder.** JOURNAL OF AFFECTIVE DISORDERS. 136 (3): 491-497. **I.F.: 3.52.**

31 Garcia-Rizo C.; Fernandez-Egea E.; Oliveira C.; Justicia A.; Bernardo M.; Kirkpatrick B. **Inflammatory markers in antipsychotic-naive patients with nonaffective psychosis and deficit vs. nondeficit features.** PSYCHIATRY RESEARCH. 198: 212-215. **I.F.: 2.52.**

32 Udina M.; Castellvi P.; Moreno-Espana J.; Navines R.; Valdes M.; Forns X.; Langohr K.; Sola R.; Vieta E.; Martin-Santos R. **Interferon-Induced Depression in Chronic Hepatitis C: A Systematic Review and Meta-Analysis.** JOURNAL OF CLINICAL PSYCHIATRY. 73: 1128-1138. **I.F.: 5.80.**

33 Mas S.; Gasso P.; Alvarez S.; Parellada E.; Bernardo, M.; Lafuente A. **Intuitive pharmacogenetics: spontaneous risperidone dosage is related to CYP2D6, CYP3A5 and ABCB1 genotypes.** PHARMACOGENOMICS JOURNAL. 12 (3): 255-259. **I.F.: 4.54.**

34 Kirkpatrick B.; Miller B.J.; Garcia-Rizo C.; Fernandez-Egea E.; Bernardo M. **Is Abnormal Glucose Tolerance in Antipsychotic-Naive Patients With Nonaffective Psychosis Confounded by Poor Health Habits?** SCHIZOPHRENIA BULLETIN. 38 (2): 280-284. **I.F.: 8.80.**

35 Sanchez-Gistau V.; Sugranyes G.; Bailles E.; Carreno M.; Donaire A.; Bargallo N.; Pintor L. **Is major depressive disorder specifically associated with mesial temporal sclerosis?** EPILEPSIA. 53 (2): 386-392. **I.F.: 3.96.**

36 Fernandez-Egea E.; Parellada E.; Sugranyes G.; Horga G.; Lomena F.; Falcon C.; Pavia J.; Bernardo M. **Left amygdalar activation in deficit syndrome compared with non-deficit subjects with schizophrenia during the control task in a facial emotion recognition paradigm.** PSYCHIATRY RESEARCH-NEUROIMAGING. 203: 109-110. **I.F.: 2.96.**

37 Mayoral M.; Bombin I.; Castro-Fornieles J.; Gonzalez-Pinto A.; Otero S.; Parellada M.; Moreno D.; Baeza I.; Graell M.; Rapado M.; Arango C. **Longitudinal study of neurological soft signs in first-episode early-onset psychosis.** JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY. 53 (3): 323-331. **I.F.: 4.28.**

38 Vieta E.; Suppes T.; Ekholm B.; Udd M.; Gustafsson U. **Long-term efficacy of quetiapine in combination with lithium or divalproex on mixed symptoms in bipolar I disorder.** JOURNAL OF AFFECTIVE DISORDERS. 142: 36-44. **I.F.: 3.52.**

39 Grande I.; Magalhaes P.V.; Kunz M.; Vieta E.; Kapczinski F. **Mediators of allostasis and systemic toxicity in bipolar disorder.** PHYSIOLOGY & BEHAVIOR. 106 (1): 46-50 Sp. Iss. . **I.F.: 2.87.**

40 Sole B.; Bonnin C.M.; Torrent C.; Balanza-Martinez V.; Tabares-SeisDedos R.; Popovic D.; Martinez-Aran A.; Vieta E. **Neurocognitive impairment and psychosocial functioning in bipolar II disorder.** ACTA PSYCHIATRICA SCANDINAVICA. 125 (4): 309-317. **I.F.: 4.22.**

41 Gasso P.; Mas S.; Molina O.; Bernardo M.; Lafuente A.; Parellada E. **Neurotoxic/neuroprotective activity of haloperidol, risperidone and paliperidone in neuroblastoma cells.** PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY. 36 (1): 71-77. **I.F.: 3.25.**

42 Rosa A.R.; Gonzalez-Ortega I.; Gonzalez-Pinto A.; Echeburua E.; Comes M.; Martinez-Aran A.; Ugarte A.; Fernandez M.; Vieta E. **One-year psychosocial functioning in patients in the early vs. late stage of bipolar disorder.** ACTA PSYCHIATRICA SCANDINAVICA. 125 (4): 335-341. **I.F.: 4.22.**

43 De Antonio I.E.; Gomez-Gil E.; Almaraz M.C.; Martinez-Tudela J.; Bergero T.; Olveira G.; Soriguer F. **Organization of healthcare for transsexual persons in the Spanish national health system.** GACETA SANITARIA. 26 (3): 203-209. **I.F.: 1.33.**

44 Gelabert E.; Subira S.; Garcia-Esteve L.; Navarro P.; Plaza A.; Cuyas E.; Navines R.; Gratacos M.; Valdes M.; Martin-Santos R. **Perfectionism dimensions in major postpartum depression.** JOURNAL OF AFFECTIVE DISORDERS. 136 (1-2): 17-25. **I.F.: 3.52.**

45 Grande I.; Kapczinski F.; Stertz L.; Colpo G.D.; Kunz M.; Cereser K.M.; Kauer-Sant'Anna M.; Frey B.; Vieta E.; Magalhaes P.V.S. **Peripheral brain-derived neurotrophic factor changes along treatment with extended release quetiapine during acute mood episodes: An open-label trial in drug-free patients with bipolar disorder.** JOURNAL OF PSYCHIATRIC RESEARCH. 46: 1511-1514. **I.F.: 4.66.**

46 Dias V.V.; Balanza-Martinez V.; Soeiro-de-Souza M.G.; Moreno R.A.; Figueira M.L.; Machado-Vieira R.; Vieta E. **Pharmacological approaches in bipolar disorders and the impact on cognition: a critical overview.** ACTA PSYCHIATRICA SCANDINAVICA. 126: 315-331. **I.F.: 4.22.**

47 Popovic D.;Reinares M.; Goikolea J.M.; Bonnin C.M.; Gonzalez-Pinto A.; Vieta E. **Polarity index of pharmacological agents used for maintenance treatment of bipolar disorder.** EUROPEAN NEUROPSYCHOPHARMACOLOGY. 22 (5): 339-346. **I.F.: 4.05.**

48 Altamirano J.; Bataller R.; Cardenas A.; Michelena J.; Freixa N.; Monras M.; Rios J.; Liccioni A.; Caballeria J.; Gual A.; Lligona A. **Predictive factors of abstinence in patients undergoing liver transplantation for alcoholic liver disease.** ANNALS OF HEPATOLOGY. 11 (2): 213-221. **I.F.: 1.81.**

49 De Dios C.; Gonzalez-Pinto A.; Montes J.M.; Goikolea J.M.; Saiz-Ruiz J.; Prieto E.; Vieta E. **Predictors of recurrence in bipolar disorders in Spain (PREBIS study data).** JOURNAL OF AFFECTIVE DISORDERS. 141: 406-414. **I.F.: 3.52.**

50 Baldessarini R.J.; Undurraga J.; Vazquez G.H.; Tondo L.; Salvatore P.; Ha K.; Khalsa H.M.K.; Lepri B.; Ha T.H.; Chang J.S.; Tohen M.; Vieta E. **Predominant recurrence polarity among 928 adult international bipolar I disorder patients.** ACTA PSYCHIATRICA SCANDINAVICA. 125 (4): 293-302. **I.F.: 4.22.**

51 Bhattacharyya S.; Atakan Z.; Martin-Santos R.; Crippa J.A.; Kambeitz J.; Prata D.; Williams S.; Brammer M.; Collier D.A.; McGuire P.K. **Preliminary report of biological basis of sensitivity to the effects of cannabis on psychosis: AKT1 and DAT1 genotype modulates the effects of delta-9-tetrahydrocannabinol on midbrain and striatal function.** MOLECULAR PSYCHIATRY. 17: 1152-1155. **I.F.: 13.67.**

52 Puig O.; Penades R.; Baeza I.; Sanchez-Gistau V.; De La Serna, E.; Fonrodona L.; Andres-Perpina S.; Bernardo M.; Castro-Fornieles J. **Processing speed and executive functions predict real-world everyday living skills in adolescents with early-onset schizophrenia.** EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 21 (6): 315-326. **I.F.: 2.82.**

53 Arango C.; Rapado-Castro M.; Reig S.; Castro-Fornieles J.; Gonzalez-Pinto A.; Otero S; Baeza I.; Moreno C.; Graell M.; Janssen J.; Parellada M.; Moreno D.; Bargallo N.; Desco M. **Progressive Brain Changes in Children and Adolescents With First-Episode Psychosis.** ARCHIVES OF GENERAL PSYCHIATRY. 69 (1): 16-26. **I.F.: 12.02.**

54 Garcia-Rizo C.; Fernandez-Egea E.; Oliveira C.; Justicia A.; Parellada E.; Beranardo M.; Kirkpatrick B. **Prolactin concentrations in newly diagnosed, antipsychotic-naive patients with nonaffective psychosis.** SCHIZOPHRENIA RESEARCH. 134: 16-19. **I.F.: 4.75.**

55 Lazaro L.; Bargallo N.; Andres S.; Falcon C.; Morer A.; Junque C.; Castro-Fornieles J. **Proton magnetic resonance spectroscopy in pediatric obsessive-compulsive disorder: Longitudinal study before and after treatment.** PSYCHIATRY RESEARCH-NEUROIMAGING. 201 (1): 17-24. **I.F.: 2.96.**

56 Vieta E.; Azorin J.M.; Bauer M.; Frangou S.; Perugi G.; Martinez G.; Schreiner A. **Psychiatrists' perceptions of potential reasons for non-and partial adherence to medication: Results of a survey in bipolar disorder from eight European countries.** JOURNAL OF AFFECTIVE DISORDERS. 143: 125-130. **I.F.: 3.52.**

57 Al-Halabi S.; Garcia-Portilla M.P.; Alejandra Saiz P.; Fonseca E.; Bobes-Bascaran M.T.; Galvan G.; Iglesias C.; Arrojo M.; Benabarre A.; Goikolea J.M.; Sanchez E.; Sarramea F.; Bobes J. **Psychometric properties of the Spanish version of the Body Weight, Image and Self-Esteem Evaluation questionnaire in patients with severe mental disorders.** COMPREHENSIVE PSYCHIATRY. 53: 1237-1242. **I.F.: 2.26.**

58 Murru A.; Pacchiarotti I.; Nivoli A.M.A.; Bonnin C.M.; Patrizi B.; Amann B.; Vieta E.; Colom F. **Rates and clinical correlates of treatment non-adherence in schizoaffective bipolar patients.** ACTA PSYCHIATRICA SCANDINAVICA. 125 (5): 412-418. **I.F.: 4.22.**

59 Ballbe M.; Nieva G.; Mondon S.; Pinet C.; Bruguera E.; Salto E.; Fernandez E.; Gual A. **Smoke-free policies in psychiatric services: identification of unmet needs.** TOBACCO CONTROL. 21: 549-554. **I.F.: 3.01.**

60 Mas S.; LLerena A.; Saiz J.; Bernardo M.; Lafuente A. **Strengths and weaknesses of pharmacogenetic studies of antipsychotic drugs: the potential value of the PEPs study.** PHARMACOGENOMICS. 13: 1773-1782. **I.F.: 3.97.**

61 De Dios C.; Ezquiaga E.; Agud J.L.; Vieta E.; Soler B.; Garcia-Lopez A. **Subthreshold symptoms and time to relapse/recurrence in a community cohort of bipolar disorder outpatients.** JOURNAL OF AFFECTIVE DISORDERS. 143: 160-165. **I.F.: 3.52.**

62 Bonnin C.M.; Sanchez-Moreno J.; Martinez-Aran A.; Sole B.; Reinares M.; Rosa A.R.; Goikolea J.M.; Benabarre A.; Ayuso-Mateos J.L.; Ferrer M.; Vieta E.; Torrent C. **Subthreshold symptoms in bipolar disorder: Impact on neurocognition, quality of life and disability.** JOURNAL OF AFFECTIVE DISORDERS. 136 (3): 650-659. **I.F.: 3.52.**

63 Undurraga J.; Baldessarini R.J.; Valenti M.; Pacchiarotti I.; Vieta E. **Suicidal Risk Factors in Bipolar I and II Disorder Patients.** JOURNAL OF CLINICAL PSYCHIATRY. 73: 778-782. **I.F.: 5.80.**

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Biological bases of psychiatric disorders and nuclear psychiatry

64 Mas S.; Gasso P.; Trias G.; Bernardo M.; Lafuente A. **Sulforaphane protects SK-N-SH cells against antipsychotic-induced oxidative stress.** FUNDAMENTAL & CLINICAL PHARMACOLOGY. 26: 712-721. **I.F.: 1.80.**

65 De Dios C.; Agud J.L.; Ezquiaga E.; Garcia-Lopez A.; Soler B.; Vieta E. **Syndromal and Subsyndromal Illness Status and Five-Year Morbidity Using Criteria of the International Society for Bipolar Disorders Compared to Alternative Criteria.** PSYCHOPATHOLOGY. 45 (2): 102-108. **I.F.: 1.82.**

66 Magallon-Neri E.M.; Canalda G.; Eugenio De la Fuente J; Forns M.; Garcia R.; Gonzalez E.; Castro-Fornieles J. **The influence of personality disorders on the use of mental health services in adolescents with psychiatric disorders.** COMPREHENSIVE PSYCHIATRY. 53 (5): 509-515. **I.F.: 2.26.**

67 Scott J.; Colom F.; Pope M.; Reinares M.; Vieta E. **The prognostic role of perceived criticism, medication adherence and family knowledge in bipolar disorders.** JOURNAL OF AFFECTIVE DISORDERS. 142: 72-76. **I.F.: 3.52.**

68 Tohen M.; Khalsa H.M.K.; Salvatore P.; Vieta E.; Ravichandran C.; Baldessarini R.J. **Two-year outcomes in first-episode psychotic depression The McLean-Harvard first-episode project.** JOURNAL OF AFFECTIVE DISORDERS. 136 (1-2): 1-8. **I.F.: 3.52.**

69 Perez Pintor L.; Valldeoriola F.; Fernandez-Egea E.; Sanchez R.; Rami L.; Tolosa E.; Muniz A.; Marti M.J.; Bernardo M. **Use of Electroconvulsive Therapy in Parkinson Disease With Residual Axial Symptoms Partially Unresponsive to L-Dopa A Pilot Study.** JOURNAL OF ECT. 28 (2): 87-91. **I.F.: 1.54.**

70 Guilera G.; Gomez-Benito J.; Pino O.; Emilio Rojo J.; Cuesta M.J.; Martinez-Aran A.; Safont G.; Tabares-Seisdedos R.; Vieta E.; Bernardo M.; Crespo-Facorro B.; Franco M.; Rejas J. **Utility of the World Health Organization Disability Assessment Schedule II in schizophrenia.** SCHIZOPHRENIA RESEARCH. 138 (2-3): 240-247. **I.F.: 4.75.**

71 Setoain X.; Pavia J.; Seres E.; Garcia R.; Carreno M.M.; Donaire A.; Rubi S.; Bargallo N.; Rumia J.; Boget T.; Pintor L.; Fuster D.; Pons F. **Validation of an Automatic Dose Injection System for Ictal SPECT in Epilepsy.** JOURNAL OF NUCLEAR MEDICINE. 53 (2): 324-329. **I.F.: 6.38.**

72 Kemp D.E.; Karayal O.N.; Calabrese J.R.; Sachs G.S.; Pappadopulos E.; Ice K.S.; Siu C.O.; Vieta E. **Ziprasidone with adjunctive mood stabilizer in the maintenance treatment of bipolar I disorder: Long-term changes in weight and metabolic profiles.** EUROPEAN NEUROPSYCHOPHARMACOLOGY. 22 (2): 123-131. **I.F.: 4.05.**

73 Calvo N.; Gutiérrez F.; Andión O.; Caseras X.; Torrubia R.; Casas M. **Psychometric properties of the Spanish version of the self-report Personality Diagnostic Questionnaire -4+ (PDQ-4+) in psychiatric outpatients.** PSICOTHEMA. 24(1):156-60. **I.F.: 1.02.**

74 Gutiérrez F.; Vall G.; Peri J.M.; Baillés E.; Ferraz L.; Gárriz M.; Caseras X. **Personality disorder features through the life course.** J PERS DISORD. 26(5):763-74. **I.F.: 2.31.**

75 Magallón-Neri E.; Díaz R.; Forns M.; Goti J.; Canalda G.; Castro-Fornieles J. **Subtypes of adolescents with substance use disorders and psychiatric comorbidity using cluster anddiscriminant analysis of MMPI-A profiles.** ADICCIONES. 24(3):219-27. **I.F.: 0.80.**

76 Goldberg X.; Fatjó-Vilas M.; Muñoz M.J.; Campanera S.; Miret S.; Miñano M.J.; Aguilera M.; Miralles M.L.; Navarro M.E.; Lázaro L.; Guitart M.; Barrantes-Vidal N.; Fañanás L. **Increased familiarity of intellectual deficits in early-onset schizophrenia spectrum disorders.** WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY. 13(7):493-500. **I.F.: 2.38.**

77 Bernardo M.; Coma A.; Ibáñez C.; Zara C.; Bari J.M.; Serrano-Blanco A. **Antipsychotic polypharmacy in a regional health service: a population-based study.** BMC PSYCHIATRY. 12: 42. **I.F.: 2.55.**

78 Bobes J.; Cavada C.; Luquín R.; Morales G.; Manrique M.; Sáiz J.; Molero Ruiz J.L.; Carbone G.; Arango C. **Consenso DELPHI sobre la salud fisica del paciente con esquizofrenia: valoración por un panel de expertos de las recomendaciones de las Sociedades Españolas de Psiquiatría y de Psiquiatría Biológica.** ACTAS ESP PSIQUIATRI. 40(3):114-128. **I.F.: 0.59.**

79 Gutiérrez-Zotes J.A.; Valero J.; Cortés M.J.; Labad A.; Ochoa S.; Ahuir M.; Carlson J.; Bernardo M.; Cañizares S.; Escartin G.; Cañete J.; Gallo P.; Salamero M. **Spanish adaptation of the Beck Cognitive Insight Scale (BCIS) for schizophrenia.** ACTAS ESP PSIQUIATRI. 40(1):2-9. **I.F.: 0.59.**

80 Valentí M.; Pacchiarotti I.; Bonnín C.M.; Rosa A.R.; Popovic D.; Nivoli A.M.; Goikolea J.M.; Murru A.; Undurraga J.; Colom F.; Vieta E.

Risk factors for antidepressant-related switch to mania. JOURNAL OF CLINICAL PSYCHIATRY. 73(2):e271-6. **I.F.: 5.80.**

81 Etain B.; Lajnef M.; Bellivier F.; Mathieu F.; Raust A.; Cochet B.; Gard S.; M'Bailara K.; Kahn J.P.; Elgrabli O.; Cohen R.; Jamain S.; Vieta E.; Leboyer M.; Henry C. **Clinical expression of bipolar disorder type I as a function of age and polarity at onset: convergent findings insamples from France and the United States.** JOURNAL OF CLINICAL PSYCHIATRY. 73(4):e561-6. **I.F.: 5.80.**

82 Torrent C.; Martinez-Arán A.; del Mar Bonnin C.; Reinares M.; Daban C.; Solé B.; Rosa A.R.; Tabarés-Seisdedos R.; Popovic D.; Salamero M.; Vieta E. **Long-term outcome of cognitive impairment in bipolar disorder.** JOURNAL OF CLINICAL PSYCHIATRY. 73(7):e899-905. **I.F.: 5.80.**

83 M'Bailara K.; Atzeni T.; Colom F.; Swendsen J.; Gard S.; Desage A.; Henry C. **Emotional hyperreactivity as a core dimension of manic and mixed states.** PSYCHIATRY RESEARCH-NEUROIMAGING. 197(3):227-30. **I.F.: 2.96.**

84 Bhattacharyya S.; Crippa J.A.; Allen P.; Martin-Santos R.; Borgwardt S.; Fusar-Poli P.; Rubia K.; Kambeitz J.; O'Carroll C.; Seal M.L.; Giampietro V.; Brammer M.; Zuardi A.W.; Atakan Z.; McGuire P.K. **Induction of psychosis by ϰ9-tetrahydrocannabinol reflects modulation of prefrontal and striatal function duringattentional salience processing.** ARCH GEN PSYCHIAT. 69(1):27-36. **I.F.: 12.02.**

85 Martín-Santos R.; Gelabert E.; Subirà S.; Gutierrez-Zotes A.; Langorh K.; Jover M.; Torrens M.; Guillamat R.; Mayoral F.; Canellas F.; Iborra J.L.; Gratacos M.; Costas J.; Gornemann I.; Navinés R.; Guitart M.; Roca M.; De Frutos R.; Vilella E.; Valdés M.; Esteve L.G.; Sanjuan J. **Research letter: is neuroticism a risk factor for postpartum depression?** PSYCHOLOGICAL MEDICINE. 42(7):1559-65. **I.F.: 6.16.**

86 Giménez M.; Pujol J.; Ortiz H.; Soriano-Mas C.; López-Solà M.; Farré M.; Deus J.; Merlo-Pich E.; Martín-Santos R. **Altered brain functional connectivity in relation to perception of scrutiny in social anxiety disorder.** PSYCHIATRY RESEARCH-NEUROIMAGING. 202(3):214-23. **I.F.: 2.96.**

87 Mendes A.V.; Loureiro S.R.; Crippa J.A.; De Meneses Gaya C.; García-Esteve L.; Martín-Santos R. **Mothers with depression, schoolage children with depression? A systematic review.** PERSPECT PSYCHIATR C. 48(3):138-48. **I.F.: 1.30.**

88 Mitjans M.; Gastó C.; Catalán R.; Fañanás L.; Arias B. **Genetic variability in the endocannabinoid system and 12-week clinical response to citalopram treatment: the roleof the CNR1, CNR2 and FAAH genes.** JOURNAL OF PSYCHOPHARMACOLOGY. 26(10):1391-8. **I.F.: 3.04.**

REVIEWS
I.F.: 29.28

1 Bhattacharyya S.; Atakan Z.; Martin-Santos R.; Crippa J.A.; McGuire P. K. **Neural Mechanisms for the Cannabinoid Modulation of Cognition and Affect in Man: A Critical Review of Neuroimaging Studies.** CURRENT PHARMACEUTICAL DESIGN. 18: 5045-5054. **I.F.: 3.87.**

2 Sole B.; Bonnin C.M.; Torrent C.; Martinez-Aran A.; Popovic D.; Tabares-SeisDedos R.; Vieta E. **Neurocognitive Impairment Across the Bipolar Spectrum.** CNS NEUROSCIENCE & THERAPEUTICS. 18 (3): 194-200. **I.F.: 4.44.**

3 Nivoli A.M.A.; Murru A.; Goikolea J.M.; Crespo J.M.; Montes J.M.; Gonzalez-Pinto A.; Garcia-Portilla P.; Bobes J.; Saiz-Ruiz J.; Vieta E. **New treatment guidelines for acute bipolar mania: A critical review.** JOURNAL OF AFFECTIVE DISORDERS. 140 (2): 125-141. **I.F.: 3.52.**

4 Ciudad A.; San L.; Bernardo M.; Olivares J.M.; Polavieja P.; Valladares A.; Gilaberte I. **Relapse and therapeutic interventions in a 1-year observational cohort study of nonadherent outpatients with schizophrenia.** PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY. 36 (2): 245-250. **I.F.: 3.25.**

5 Schlaepfer T.E.; Agren H.; Monteleone P.; Gasto C.; Pitchot W.; Rouillon F.; Nutt D.J.; Kasper S. **The hidden third: improving outcome in treatment-resistant depression.** JOURNAL OF PSYCHOPHARMACOLOGY. 26 (5): 587-602. **I.F.: 3.04.**

6 Pintor L.; Valldeoriola F.; Bailles E.; Marti M.J.; Muniz A.; Tolosa E. **Ziprasidone Versus Clozapine in the Treatment of Psychotic Symptoms in Parkinson Disease: A Randomized Open Clinical Trial.** CLINICAL NEUROPHARMACOLOGY. 35 (2): 61-66. **I.F.: 2.17.**

7 Zuardi A.W., Crippa J.A., Hallak J.E., Bhattacharyya S., Atakan Z., Martin-Santos R., McGuire P.K., Guimarães F.S. **A critical re-**

view of the antipsychotic effects of cannabidiol: 30 years of a translational investigation. CURR PHARM DESIGN. 18(32):5131-40. **I.F.: 3.87.**

8 Atakan Z., Morrison P., Bossong M.G., Martin-Santos R., Crippa J.A. **The effect of cannabis on perception of time: a critical review.** CURR PHARM DESIGN. 18(32):4915-22. **I.F.: 3.87.**

9 Crippa J.A., Derenusson G.N., Chagas M.H., Atakan Z., Martín-Santos R., Zuardi A.W., Hallak J.E. **Pharmacological interventions in the treatment of the acute effects of cannabis: a systematic review of literature.** HARM REDUCT J. 9(1):7. **I.F.: 1.26.**

EDITORIALS
I.F.: 4.22

1 Colom F. **Social cognition and its potential role in bipolar disorder roughening.** ACTA PSYCHIATRICA SCANDINAVICA. 125 (4): 264-265. **I.F.: 4.22.**

CLINICAL GUIDELINES
I.F.: 9.26

1 Mathurin P.; Hadengue A.; Bataller R.; Addolorato G.; Burra P.; Burt A.; Caballeria J.; Cortez-Pinto H.; Day C.P.; Forrest E.H.; Gual A.; Leon D.A.; Lligoña A.; Jepsen P.; Mueller S.; Pageaux G.P.; Roskams T.; Seitz H.K.; Stickel F.; Thursz M.; Naveau S.; Morgan T.; Nevens F. **EASL clinical practical guidelines: management of alcoholic liver disease.** J HEPATOL. 57(2):399-420. **I.F.: 9.26.**

GRANTS FOR RESEARCH IN PROGRESS

Andrés Perpiñá S. **Trastornos de la conducta alimentaria, veinte años después. Estudio de estado psicopatológico y físico y su relación con el funcionamiento general.** Sponsored by: Ministerio de Igualdad-Instituto de la mujer, 234/09. Duration: 03/02/2010-30/06/2013

Baeza Pertegaz I. **Estudio multicéntrico longitudinal sobre características clínicas, cognitivas y de neuroimagen en niños y adolescentes con Síndrome de Riesgo de Psicosis.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01349. Duration: 01/01/2012-31/12/2014.

Bernardo M. **Interacción genotipo-fenotipo y ambiente. Aplicación a un modelo predictivo en primeros episodios psicóticos.** Sponsored by: FIS (ISCIII), PI080208. Duration: 01/01/2009-30/06/2013.

Bernardo M. **Reconocimiento como Grupo Consolidado de Investigación.** Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca, Generalitat de Catalunya, 2009SGR1295. Duration: 01/01/2009-31/12/2013.

Bernardo Arroyo M. **Antipsicóticos típicos vs. atípicos; impacto de la farmacogenética en la farmacocinética, la ocupación de receptores estriatales y la aparición se sintomatología extrapiramidal.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad TRA-065. Duration: 01/01/2010-31/12/2012.

Bernardo Arroyo M. **Determinantes clínicos y neurobiológicos de segundos episodios de esquizofrenia. Estudio longitudinal de primeros episodios psicóticos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00325. Duration: 01/01/2012-31/12/2014.

Castro Fornieles J. **Estudio de seguimiento tras cuatro años de la primera evaluación de niños y adolescentes hijos de pacientes con esquizofrenia o trastorno bipolar.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00683. Duration: 01/01/2012-31/12/2014.

Castro Fornieles J. **Grup de recerca en Psiquiatria i Psicologia Infantil Clínic (GRUPPIC).** Sponsored by: AGAUR 2009_SGR_1119. Duration: 29/07/2009-31/12/2013.

Castro Fornieles J. **Paediatric European Risperidone Studies.** Sponsored by: European Commission 241959. Duration: 01/05/2010-30/04/2015.

Castro Fornieles J. **Suicidality: Treatment Occurring in Paediatrics.** Sponsored by: European Commission 261411. Duration: 01/11/2010-30/04/2014.

Castro Fornieles J. **Two year follow-up study of children and adolescent offspring of subjects with schizophrenia or bipolar disorders.** Sponsored by: Marató TV3 91630. Duration: 29/01/2010-28/02/2014.

Catalan Campos R. **Evaluación del coste/efectividad de la intervención farmacogenética en la optimización del tratamiento con antipsicóticos en pacientes con esquizofrenia.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/02006. Duration: 01/01/2012-31/12/2014.

Catalan Campos R. **Identificación de predictores clínicos, neurohormonales, farmacogenéticos en la respuesta terapéutica a clozapina en pacientes diagnosticados de es-**

quizofrenia refractaria. Sponsored by: Instituto de Salud Carlos III (ISCIII) EC08/00184. Duration: 01/01/2009-30/06/2013.

Colom Victoriano F. **e-Enseñanza y desarrollo de un programa psicoeducativo basado en la evidencia en primeros episodios psicóticos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/02209. Duration: 01/01/2011-31/12/2013.

Colom Victoriano F. **Factores neurobiológicos, cognitivos y clínicos asociados al pronóstico clínico y funcional a un año de seguimiento de la psicoeducación en el trastorno bipolar.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1044. Duration: 01/01/2010-30/06/2013.

Garcia Esteve M.L. **Estudio farmacogenético y de seguridad clínica en hijos de madres tratadas con antidepresivos ISRS durante el embarazo: Evaluación del funcionamiento cognitivo-conductual a los 5 años.** Sponsored by: Instituto de Salud Carlos III (ISCIII) EC08/00170. Duration: 01/01/2009-31/07/2013.

Garcia Esteve M.L. **Violencia sexual, estrés agudo y calidad de vida: estudio de los factores de riesgo en las mujeres atendidas en urgencias tras una agresión sexual.** Sponsored by: Instituto de la Mujer 235/09. Duration: 03/02/2010-21/12/2013.

Gasto Ferrer C. **Análisis de perfiles de metilación en genes involucrados en la respuesta al estrés y su correlación con morfología cerebral (MRI) en trastornos afectivos severos.** Sponsored by: Ministerio de Economía y Competitividad SAF2008-05674-C03-03. Duration: 01/01/2009-31/12/2012.

Gual Sole A. **Addictions and Lifestyles In Contemporary Europe - Reframing Addictions Project.** Sponsored by: European Commission 266813. Duration: 01/04/2011-31/03/2016.

Gual Sole A. **European Workplace and Alcohol.** Sponsored by: European Commission CE_SANCO_09_01. Duration: 01/01/2011-30/06/2013.

Gual Sole A. **Good practice on brief interventions to address alcohol use disorders in primary health care, workplace health services, emergency care and social services.** Sponsored by: European Commission 29908. Duration: 01/05/2012-30/04/2015.

Gual Sole A. **Optimizing delivery of health care interventions.** Sponsored by: European Commission 259268. Duration: 01/01/2011-31/12/2014.

Gual Sole A. **AMPHORA: Alcohol Measures for Public Health Research Alliance. Centre coordinador: HCPB.** Sponsored by: European Commission 223059. Duration: 01/01/2009-31/01/2013.

Lazaro Garcia M.L. **Analysis of polimorphisms in candidate genes in early onset obsessive-compulsive disorder. Relationship with cerebral abnormalities and symptom dimensions.** Sponsored by: Marató TV3 91710. Duration: 29/01/2010-28/07/2013.

Lazaro Garcia M.L. **Identificación de predictores farmacogenéticos en la respuesta terapéutica a Fluoxetina en niños y adolescentes.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01965. Duration: 01/01/2011-31/12/2013.

Lazaro Garcia M.L. **Identificación de predictores farmacogenéticos en la respuesta terapéutica a Fluoxetina en niños y adolescentes.** Sponsored by: Fundación Alicia Koplowitz. Duration: 01/01/2010-31/12/2012.

Martin-Santos Laffon R. **Bases neurobiológicas de la depresión inducida por interferón en la hepatitis C crónica. Estudio PSICOCIT. Subproyecto I.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/02206. Duration: 01/01/2011-31/12/2013.

Martin-Santos Laffon R. **Grup de recerca en: "Vulnerabilitat, psicopatologia i gènere".** Sponsored by: AGAUR 2009_SGR_1435. Duration: 26/11/2009-31/12/2013.

Martin-Santos Laffon R. **Repercusión del inicio precoz del consumo continuado (crónico) de substancias de abuso sobre la red atencional: estudio de conectividad funcional cerebral y modulación genética.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad 2011/050. Duration: 08/11/201107/11/2014.

Martinez-Arán A. **Discapacidad en el trastorno bipolar e impacto funcional de una estrategia de intervención neurocognitiva.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI080180. Duration: 01/01/2009 – 30/09/2012.

Martinez-Arán A. **Eficacia comparativa de una estrategia de rehabilitación neurocognitiva en pacientes con trastorno bipolar tipo I tras un primer episodio maníaco versus pacientes con múltiples episodios.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00637. Duration: 01/01/2012 – 31/12/2014.

Morer Liñan A. **European Multicentre Tics in Children Studies.** Sponsored by: European Commission 278367. Duration: 01/12/2011-30/05/2017.

Morer Liñan A. **Inflamación, autoinmunidad y psicopatología: estudio en niños y adolescentes con patología psiquiátrica aguda y en hijos de madres afectadas de lupus eritematoso sistémico.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1347. Duration: 01/01/2010-30/06/2013.

Parellada Rodon E. **Apoptosis y cambios neuroestructurales progresivos en pacientes con un primer episodio de esquizofrenia: esudio longitudinal y multimodal de neuroimagen y biología molecular.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI080055. Duration: 01/01/2009-30/06/2013.

Penades Rubio R. **El BDNF (Brain-derived neurotrophic factor) como posible biomarcador del tratamiento de rehabilitación neurocognitiva en la esquizofrenia de predominio negativo.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01958. Duration: 01/01/2012-31/12/2014.

Vieta Pascual E. **European Network of Bipolar Research Expert CentresCentre coordinador: FondaMental.** Sponsored by: European Commission 223102. Duration: 01/07/2009-30/06/2012.

Vieta Pascual E. **Impacte d'un programa d'intervenció multidisciplinar sobre l'estil de vida en la millora del funcionament psicosocial i la qualitat de vida dels pacients bipolars d'inici precoç.** Sponsored by: Col·legi Oficial d'Infermeres i Infermers de Barcelona PR-5385-11. Duration: 01/01/2012-31/12/2013.

Vieta Pascual E. **Metilfenidato en el tratamiento inicial de mania aguda.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC10-064. Duration: 01/01/2011-31/12/2013.

Vieta Pascual E. **The neural correlates of euthymic cognitive impairment in bipolar disorder.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1893. Duration: 01/01/201031/12/2012.

Vieta Pascual E. **Trastorn bipolar.** Sponsored by: AGAUR 2009_SGR_1022. Duration: 15/09/2009-31/12/2013.

DOCTORAL THESES

Vieta E. **Estats mixtes, viratges i antidepressius: estudi d'una cohort de pacients bipolars.** PhD student: Marc Valenti Ribas.

Vieta E. **Propiedades reguladoras del humor de los antipsicóticos atípicos en los episodios afectivos del trastorno bipolar.** PhD student: José Manuel Goikolea Alberdi.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neuropsychology

GROUP MEMBERS

TEAM LEADER
Carme Junqué
(Universitat de Barcelona)
Tel.: 93 403 92 98
E-mail: cjunque@ub.edu

RESEARCHERS:
Núria Bargalló (Hospital Clínic)
David Bartrés-Faz (UB)
Teresa Boget (Hospital Clínic)
Teodor Marcos (Hospital Clínic)
José M. Mercader (Hospital Clínic)
Manuel Salamero (Hospital Clínic)
Josep M. Serra (UB)
Pere Vendrell (UB)

RESEARCHERS:
Bárbara Segura (UB)

RESEARCH FELLOWS:
Joana B. Pereira (MICINN)
Leire Zubiaurre (MICINN)
Eider Martinez de Arenaza (DGR)
Eva M. Palacios (IDIBAPS)
Roser Sala (MICINN)
Didac Vidal (DGR)
Nuria Pujol (Rio Hortega)
Hugo Cesar Baggio (DGR)
Juan Pablo Martin Trias (IMI-European Project)

STRATEGIC OBJECTIVES

Study of the consequences of cerebral lesions and dysfunctions in behavior and cognition. The technique preferentially used in our studies is magnetic resonance imaging in its structural and functional applications. We are equipped with a neuroimaging laboratory with several high-performance workstations as well as with a neuronavigated transcranial magnetic stimulation (TMS) equipment.

MAIN LINES OF RESEARCH

1. **Neuropsychology and neuroimaging in normal aging and in degenerative diseases:** Neuroanatomical and neurofunctional bases of cognitive impairment in normal aging, Pakinson's disease and Alzheimer's disease. This line makes use of combined structural and functional magnetic resonance imaging to detect early alterations in brain connectivity prior to clear cerebral atrophy caused by neuronal death. Identification of the symptoms prior to actual clinical manifestations in degenerative diseases is a challenge for treatment intervention aimed to slow the neurodegenerative processes. As a subline, mention should be made of the study of the contribution of the so-called 'cognitive or brain reserve' variables as modulators of the relationships between brain damage and its clinical and cognitive expression associated with age and dementia, as well as of the neuroanatomical and neurophysiological bases of this phenomenon.

2. **Cerebral plasticity:** Long-term consequences of brain damage. In the field of cerebral plasticity we investigate the changes in brain structure

and function detectable by magnetic resonance imaging that are induced by transcranial electric stimulation. This technique can be used to simulate reversible lesions or to investigate the changes in brain connectivity in normal subjects and also in degenerative processes. Another line of interest in which work is being done is the study of cerebral language response in patients who as a result of head injuries are in a chronic vegetative state or minimally responsive state. Brain response in the absence of motor response can have clear consequences in the differential diagnosis of these two conditions. Likewise in head injury patients, we study the relationship between the long-term cognitive sequelae and the white matter alterations identified by diffusion tensor imaging (DTI), and also analyze the changes in the cortical thickness related to alterations attributable to diffuse axonal damage.

3. Development of imaging techniques to study the areas of the brain implicated in the higher function alterations in epileptic patients, based on functional magnetic resonance imaging. The aim of this line of research is to develop cognitive paradigms such as those relating to speech, perception or memory, based on functional magnetic resonance imaging techniques - validating and applying them to clinical practice with a view to predicting neuropsychological sequelae and investigating cerebral plasticity mechanisms.

PUBLICATIONS

ORIGINALS
I.F.: 142.75

1 Arango C.; Rapado-Castro M.; Reig S.; Castro-Fornieles J.; Gonzalez-Pinto A.; Otero S.; Baeza I.; Moreno C.; Graell M.; Janssen J.; Parellada M.; Moreno D.; Bargallo N.; Desco M. **Progressive Brain Changes in Children and Adolescents With First-Episode Psychosis.** ARCHIVES OF GENERAL PSYCHIATRY. 69 (1): 16-26. **I.F.: 12.02.**

2 Lazaro L.; Bargallo N.; Andres S.; Falcon C.; Morer A.; Junque C.; Castro-Fornieles J. **Proton magnetic resonance spectroscopy in pediatric obsessive-compulsive disorder: Longitudinal study before and after treatment.** PSYCHIATRY RESEARCH-NEUROIMAGING. 201 (1): 17-24. **I.F.: 2.96.**

3 Setoain X.; Pavia J.; Seres E.; Garcia R.; Carreno M.M.; Donaire A.; Rubi S.; Bargallo N.; Rumia J.; Boget T.; Pintor L.; Fuster D.; Pons F. **Validation of an Automatic Dose Injection System for Ictal SPECT in Epilepsy.** JOURNAL OF NUCLEAR MEDICINE. 53 (2): 324-329. **I.F.: 6.38.**

4 Baggio H.C.; Segura B.; Ibarretxe-Bilbao N.; Valldeoriola F.; Marti M.J.; Compta Y.; Tolosa E.; Junque C. **Structural correlates of facial emotion recognition deficits in Parkinson's disease patients.** NEUROPSYCHOLOGIA. 50: 2121-2128. **I.F.: 3.64.**

5 Pereira J.B.; Ibarretxe-Bilbao N.; Marti M.J.; Compta Y.; Junque C.; Bargallo N.; Tolosa E. **Assessment of cortical degeneration in patients with Parkinson's disease by voxel-based morphometry, cortical folding, and cortical thickness.** HUMAN BRAIN MAPPING. 33: 2521-2534. **I.F.: 5.88.**

6 Batalle D.; Eixarch E.; Figueras F.; Munoz-Moreno E.; Bargallo N.; Illa M.; Acosta-Rojas R.; Amat-Roldan I.; Gratacós E. **Altered small-world topology of structural brain networks in infants with intrauterine growth restriction and its association with later neurodevelopmental outcome.** NEUROIMAGE. 60 (2): 1352-1366. **I.F.: 5.89.**

7 Carreno M.; Aparicio J.; Sierra A.; Aceituno A.; Pintor L.; Bargallo N.; Setoain J.; Rumia J.; Boget T.; Donaire A.; Bailles E.; Fernandez S. **Are patients referred for presurgical evaluation drug resistant according to the new consensus definition? A study in a tertiary center.** EPILEPSY RESEARCH. 98 (2-3): 277-280. **I.F.: 2.29.**

8 Sanchez-Gistau V.; Sugranyes G.; Bailles E.; Carreno M.; Donaire A.; Bargallo N.; Pintor L. **Is major depressive disorder specifically associated with mesial temporal sclerosis?** EPILEPSIA. 53 (2): 386-392. **I.F.: 3.96.**

9 Frauscher B.; Iranzo A.; Gaig C.; Gschliesser V.; Guaita M.; Raffelseder V.; Ehrmann L.; Sola N.; Salamero M.; Tolosa E.; Poewe W.; Santamaria J.; Hoegl B. **Normative EMG Values during REM Sleep for the Diagnosis of REM Sleep Behavior Disorder.** SLEEP. 35 (6): 835-847. **I.F.: 5.05.**

10 Fernandez-Espejo D.; Soddu A.; Cruse D.; Palacios E.M.; Junque C.; Vanhaudenhuyse A.; Rivas E.; Newcombe V.; Menon D.K.; Pickard J.D.; Laureys S.; Owen A.M. **A role for the default mode network in the bases of disorders of consciousness.** ANNALS OF NEUROLOGY. 72: 335-343. **I.F.: 11.09.**

11 Palacios E.M.; Sala-Llonch R.; Junque C.; Roig T.; Tormos J.M.; Bargallo N; Vendrell P. **White matter in-**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	100.84	23	15	5
2011	125.07	29	17	4
2012	142.75	30	22	7

tegrity related to functional working memory networks in traumatic brain injury. NEUROLOGY. 78 (12): 852-860. **I.F.: 8.31.**

12 Sala-Llonch R.; Pena-Gomez C.; Arenaza-Urquijo E.M.; Vidal-Pineiro D.; Bargallo N.; Junque C.; Bartres-Faz D. **Brain connectivity during resting state and subsequent working memory task predicts behavioural performance.** CORTEX. 48: 1187-1196. **I.F.: 6.08.**

13 Gomez-Gil E.; Zubiaurre-Elorza L.; Esteva I.; Guillamon A.; Godas T.; Almaraz M.C.; Halperin I.; Salamero M. **Hormone-treated transsexuals report less social distress, anxiety and depression.** PSYCHONEUROENDOCRINOLOGY. 37 (5): 662-670. **I.F.: 5.81.**

14 Rametti G.; Carrillo B.; Gomez-Gil E.; Junque C.; Zubiaurre-Elorza L.; Segovia S.; Gomez A.; Karadi K.; Guillamon A. **Effects of androgenization on the white matter microstructure of female-to-male transsexuals. A diffusion tensor imaging study.** PSYCHONEUROENDOCRINOLOGY. 37 (8): 1261-1269. **I.F.: 5.81.**

15 Zubiaurre-Elorza L.; Soria-Pastor S.; Junque C.; Sala-Llonch R.; Segarra D.; Bargallo N.; Macaya A. **Cortical Thickness and Behavior Abnormalities in Children Born Preterm.** PLOS ONE. 7(7):e42148. **I.F.: 4.09.**

16 Soriano-Raya J.J.; Miralbell J.; Lopez-Cancio E.; Bargallo N.; Arenillas J.F.; Barrios M.; Caceres C.; Toran P.; Alzamora M.; Davalos A.; Mataro M. **Deep versus Periventricular White Matter Lesions and Cognitive Function in a Community Sample of Middle-Aged Participants.** JOURNAL OF THE INTERNATIONAL NEUROPSYCHOLOGICAL SOCIETY. 18: 874-885. **I.F.: 2.76.**

17 Zubiaurre-Elorza L.; Soria-Pastor S.; Junque C.; Fernandez-Espejo D.; Segarra D.; Bargallo N.; Romano-Berindoague C.; Macaya A. **Thalamic changes in a preterm sample with periventricular leukomalacia: correlation with white-matter integrity and cognitive outcome at school age.** PEDIATRIC RESEARCH. 71 (4): 354-360 Part 1. **I.F.: 2.70.**

18 Sala-Llonch R.; Arenaza-Urquijo E.M.; Valls-Pedret C.; Vidal-Pineiro D.; Bargallo N.; Junque C.; Bartres-Faz D. **Dynamic functional reorganizations and relationship with working memory performance in healthy aging.** FRONTIERS IN HUMAN NEUROSCIENCE. 6. **I.F.: 2.34.**

19 Gomez-Gil E.; Gomez A.; Canizares S.; Guillamon A.; Rametti G.; Esteva I.; Vazquez A.; Salamero-Baro M. **Clinical Utility of the Bem Sex Role Inventory (BSRI) in the Spanish Transsexual and Nontranssexual Population.** 94 (3): 304-309. **I.F.: 1.46.**

20 Rumia J.; Marmol F.; Sanchez J.; Carrerno M.; Bargallo N.; Boget T.; Pintor L.; Setoain X.; Bailles E.; Donaire A.; Ferrer E.; Puig-Parellada P. **Eicosanoid levels in the neocortex of drug-resistant epileptic patients submitted to epilepsy surgery.** EPILEPSY RESEARCH. 99 (1-2): 127-131. **I.F.: 2.29.**

21 Miralbell J.; Soriano J.J.; Spulber G.; Lopez-Cancio E.; Arenillas J.F.; Bargallo N.; Galan A.; Barrios M.T.; Caceres C.; Alzamora M.T.; Pera G.; Kivipelto M.; Wahlund L.O.; Davalos A.; Mataro M. **Structural brain changes and cognition in relation to markers of vascular dysfunction.** NEUROBIOLOGY OF AGING. 33 (5). **I.F.: 6.19.**

22 Compta Y.; Ibarretxe-Bilbao N.; Pereira J.B.; Junque C.; Bargallo N.; Tolosa E.; Valldeoriola F.; Munoz E.; Camara A.; Buongiorno M.; Marti M.J. **Grey matter volume correlates of cerebrospinal markers of Alzheimer-pathology in Parkinson's disease and related dementia.** PARKINSONISM & RELATED DISORDERS. 18: 941-947. **I.F.: 3.79.**

23 Balasa M.; Vidal-Pineiro D.; Llado A.; Antonell A.; Bosch B.; Castellanos F.; Bargallo N.; Bartres-Faz D.; Molinuevo J.L.; Sanchez-Valle R. **PSEN1 Mutation Carriers Present Lower Cerebrospinal Fluid Amyoid-beta(42) Levels than Sporadic Early-Onset Alzheimer's Disease Patients but no Differences in Neuronal Injury Biomarkers.** JOURNAL OF ALZHEIMERS DISEASE. 30 (3): 605-616. **I.F.: 3.74.**

24 Rami L.; Sole-Padulles C.; Fortea J.; Bosch B.; Llado A.; Antonell A.; Olives J.; Castellvi M.; Bartres-Faz D.; Sanchez-Valle R.; Molinuevo J.L. **Applying the new research diagnostic criteria: MRI findings and neuropsychological correlations of prodromal AD.** INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY. 27 (2): 127-134. **I.F.: 2.42.**

25 Bosch B.; Arenaza-Urquijo E.M.; Rami L.; Sala-Llonch R.; Junque C.; Sole-Padulles C.; Pena-Gomez C.; Bargallo N.; Molinuevo J.L.; Bartres-Faz D. **Multiple DTI index analysis in normal aging, amnestic MCI and AD. Relationship with neuropsychological performance.** NEUROBIOLOGY OF AGING. 33 (1): 61-74. **I.F.: 6.19.**

26 Ibarretxe-Bilbao N.; Junque C.; Segura B.; Baggio H.C.; Marti M.J.; Valldeoriola F.; Bargallo N.; Tolosa E. **Progression of Cortical Thinning in Early Parkinson's Disease.** MOVEMENT DISORDERS. 27: 1746-1754. **I.F.: 4.50.**

27 Guaita M.; Salamero M.; Romero-Cardos M.; Vilaseca I.; Motserrat J.; Embid C.; Iranzo A.; De Pablo J.; Gaig C.; Leon C.; Santamaria J. **Barcelona Sleepiness Scale validation to assess sleepiness in obstructive sleep apnoea.** JOURNAL OF SLEEP RESEARCH. 21: 33-33. **I.F.: 3.16.**

28 Pena-Gomez C.; Sole-Padulles C.; Clemente I.C.; Junque C.; Bargallo N.; Bosch B.; Molinuevo J.L.; Valls-Sole J.; Pascual-Leone A.; Bartres-Faz D. **APOE Status Modulates the Changes in Network Connectivity Induced by Brain Stimulation in Non-Demented Elders.** PLOS ONE. 7(12):e51833. **I.F.: 4.09.**

29 Pena-Gomez C.; Sala-Lonch R.; Junque C.; Clemente I.C.; Vidal D.; Bargallo N.; Falcon C.; Valls-Sole J.; Pascual-Leone A.; Bartres-Faz D. **Modulation of large-scale brain networks by transcranial direct current stimulation evidenced by resting-state functional MRI.** BRAIN STIMULATION. 5: 252-263. **I.F.: 3.75.**

30 Llufriu S.; Blanco Y.; Martinez-Heras E.; Casanova-Molla J.; Gabilondo I.; Sepulveda M.; Falcon C.; Berenguer J.; Bargallo N.; Villoslada P.; Graus F.; Valls-Sole J.; Saiz A. **Influence of Corpus Callosum Damage on Cognition and Physical Disability in Multiple Sclerosis: A Multimodal Study.** PLOS ONE. 7(5):e37167. **I.F.: 4.09.**

GRANTS FOR RESEARCH IN PROGRESS

Salamero M. **Desarrollo y validación en una nueva escala de somnolencia de aplicación clínica.** Sponsored by: Ministerio Sanidad y Consumo, PI070318. Duration: 26/11/2007-31/12/2012.

Junqué C. **Ajuts de Suport als grups de Recerca.** Sponsored by: AGAUR, 2009SGR941. Duration: 01/01/2009-31/12/2013.

Marcos T. **Estudio de la eficacia de la rehabilitación cognitiva en el trastorno depresivo mayor refractario al tratamiento farmacológico.** Sponsored by: Instituto de Salud Carlos III, PI09/90126. Duration: 01/01/2010-30/03/2012.

Bartrés D. **Relación entre variables de reserva cerebral de tipo ambientales y genéticas y la función y estructura cerebrales en el envejecimiento sano y patológico.** Sponsored by: Ministerio de Ciencia e Innovación, 052296. Duration: 01/01/2010-31/12/2012.

Bartrés D. **Prediction of cognitive properties of new drug candidates for neurodegenerative diseases in early clinical development.** Sponsored by: European Commission, IMI/115009. Duration: 01/01/2010-31/12/2015.

Bartrés D. **Estilos de vida y variantes genéticas como predictores de diferencias individuales del estado y funcionalidad cerebrales en el envejecimiento sano. Estudio mediante resonancia magnética funcional y estructural.** Sponsored by: Instituto de Mayores y Servicios Sociales (IMSERSO). Duration 01/01/2012-31/03/2013.

Junqué C. **Alteraciones en la conectividad cerebral estructural y funcional relacionadas con el deterioro cognitivo leve en la enfermedad de Parkinson.** Sponsored by: Ministerio de Ciencia e Innovación, PSI2010-16174. Duration: 01/01/2011-31/12/2013.

DOCTORAL THESES

Bartrés D. **Effects of noninvasive brain stimulation on network connectivity, emotional processing and cognitive performance.** PhD student: Cleofe Peña Gomez.

Junqué C. **Disfuncions del còrtex orbitofrontal en pacients amb hemorràgia subaracnoïdal per ruptura d'aneurismes de l'artèria comunicant anterior: efecte de tractament.** PhD student: Gemma Escartin Martin.

Junqué C. **The neural correlates of cognitive impairment in schizophrenia.** PhD student: Jordi Ortiz Gil.

Junqué C. **Verbal fluency in parkinson`s disease: neuroanatomical correlates and functional networks modulated by noninvasive brain stimulation.** PhD student: Joana Braga Pereira.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Systems neuroscience

GROUP MEMBERS

TEAM LEADER
Maria Victoria Sánchez Vives (ICREA-IDIBAPS)
Tel.: 93 227 54 00 (Ext. 4301)
E-mail: msanche3@clinic.cat

GROUP LEADER:
Albert Compte (IDIBAPS)

RESEARCHERS:
David Robbe (IDIBAPS, Inmed)
Perla Kaliman (IDIBAPS)
Jaime de la Rocha (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Daniel Perez Marcos (IDIBAPS)
David Borland (IDIBAPS)
Ilias Bergstrom (IDIBAPS)
Pavel Rueda-Orozco (IDIBAPS, Inmed))
Alexander Roxin (IDIBAPS)
Rita Almeida (IDIBAPS)
Klaus Wimmer (Deutsche Forschungs-gemeinschaft)
Juan Abolafia (IDIBAPS)
Matteo Martini (IDIBAPS)
Gabriela Mochol
Marc Ramon-Bohigas (IDIBAPS)
Pierre Bourdin (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Maria Cano Colino (IDIBAPS)
Daniel Jercog (IDIBAPS)
Diego López Pigozzi (IDIBAPS)
Maria Pérez Zabalza (IDIBAPS)
Marcel Ruiz Mejias (IDIBAPS)
María Jesús Álvarez López (FI-AGAUR)
Marco Castro (IDIBAPS)
Juan Pablo Ramírez Mahaluf (FPI-IDIBAPS)
Marta Cosín-Tomás (IDIBAPS)
Sofia Seinfeld (IDIBAPS)
Nuria Tort (IDIBAPS)
Beatriz Rebollo (IDIBAPS)
Ainhoa Hermoso Mendizabal (IDIBAPS)
Patricia Castaño Prat (IDIBAPS)

TECHNICIANS:
Carolina Sales Carbonell (IDIBAPS, Inmed)

COLLABORATORS:
Vanessa Fernandez Descalzo (IDIBAPS)
Lorena Pérez Méndez (IDIBAPS)
Laura Ciria (IDIBAPS)
Luis Zapata (IDIBAPS)
Thomas Gener (CRG)
Guillermo Uriretagoyena (IDIBAPS)

VISITING SCIENTISTS:
Maurizio Mattia
(Istituto Superiore di Sanità, Roma)
Julia Weinert (University of Lübeck)

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Systems neuroscience

STRATEGIC OBJECTIVES

The growing knowledge of synaptic physiology and brain circuits, together with the development of new instruments with which to register, analyze and model the activity of a large number of neurons has made possible to address one of the great pending challenges in neuroscience: to understand the relationship between the activity of the neuron population and behavioral performance. The objective of the systems neuroscience group is to address this challenge combining experimental studies in basal ganglia, hippocampal and cortical networks with a theoretical approach.

MAIN LINES OF RESEARCH

- Electrical activity generation and control mechanisms in neuronal networks – specifically, in the brain cortex.
- Hippocampal and subicular mechanisms of spatial processing.
- Neuronal activity synchronization mechanisms in cortical networks.
- Distributed cortical network mechanisms implicated in selective attention, working memory, preceptual decision-making and executive control.
- Simple motor coding (head movement, lever activation) based on striatal clustering.
- Mechanism of information transfer between networks.
- Effect of cannabinoids on high-voltage axes.
- Use of virtual reality in neuroscience, in the context of theEVENT Lab (Virtual Environments in Neuroscience and Technology), in collaboration with Mel Slater (University of Barcelona).
- Effect of behavioral interventions on the epigenetic regulation of processes implicated in chronic diseases and related to aging.

1. **Cortical networks and EVENT Lab (Virtual Environments in Neuroscience and Technology). Headed by Dr. Maria Victòria Sánchez (IDIBAPS):**
Neuronal connectivity and cellular and synaptic properties determine and give shape to the emergent population activity (spontaneous or invoked) generated by the neuronal networks. At the same time, such activity has effects upon the network, with the regulation of relevant mechanisms such as synaptic plasticity. We are interested in different aspects of the activity generated: the mechanisms that regulate it, the information it encodes, and the consequences of this activity upon the network.
The impact which the different cellular processes (e.g., ion channels activation) have upon the resultant network activity tends to be non-intuitive and unpredictable – thus making it necessary to adopt a not only theoretical but also experimental approach.
Changes in the functional structure of the cerebral cortex results into altered patterns of the emergent activity. We are studying this in transgenic mice that are models of different neurological disorders. The understanding of these changes gives as hints on the underlying mechanisms in these processes and their possible reversion with treatment.
Lastly, integration of the cortical information giving rise to bodily representation and the combination of brain-computer interfaces and virtual reality for understanding these processes, is another research line of our group, as part of the EVENT Lab (http://www.event-lab.org).

For further information:
http://www.sanchez-vives.org

2. **Theoretical neurobiology of the cortical networks.Headed by Dr. Albert Compte (IDIBAPS):**
Our research is aimed at clarifying the mechanisms that operate in the cortical microcircuit, with a view to conducting computations of relevance to behavior. The tools we use are computer-implemented cortical network models seeking biological plausibility, and technically sophisticated data-analysis tools. We work in parallel at two levels. On the one hand, we model the activity of the cortical microcircuit in order to understand and quantify the mechanisms underlying the generation of population activity in the circuit. On the other hand, we study the physiological bases of cognitive capacities such as working memory and selective attention, and their dysfunction in psychiatric disorders.

For further information:
http://complab.fcrb.es

3. Physiology and basal ganglia networks and regulation with cannabinoids. Headed by Dr. David Robbe (IDIBAPS):
The principal objective of the laboratory is to understand the processing of cognitive and motor-sensory (cortical) information in the basal ganglia - a group of subcortical nuclei that are essential for motor coordination and the formation of habits, and which are implicated in Parkinson's disease and in addictions. Surprisingly, the excellent description of the anatomical characteristics of the basal ganglia (BG) has given rise to two opposed reference models of processing carried out in the BG. In the first model, the BG have been modelled as independent information processing channels, while the other model postulates that the ganglia act as cortical input integrators. In order to address this controversy, we use large-scale electrophysiological recording techniques (silica catheters, tetrodes) in the course of specific motor activities, in combination with advanced analytical tools and pharmacological perturbation (cannabinoids).

For further information:
http://neuro.fcrb.es/BasalGangLab/RobbeLab/Welcome.html

4. Neuroepigenetics lab. Headed by Perla Kaliman (IDIBAPS):
It is now accepted that brain networks and genetic information in adults are both sensitive and responsive to experience. An increasing number of studies in animal models are starting to show that behavioral interventions can induce changes in epigenetic codes in the nervous system that may be critical for synaptic plasticity and complex processes such as memory, learning and stress resistance. In this context, our research is aimed at identifying behavioral-induced molecular biomarkers associated with adaptive psychological and physiological changes. Accordingly, we investigate the effect of behavioral interventions (e.g. voluntary exercise and enriched environment in rodents and meditationbased trainings in humans) on the epigenetic regulation of processes such as oxidative stress and inflammation, which are at the root of most chronic and aging-related diseases.

5. Cortical Circuit Dynamics Group. Headed by Dr. Jaime de la Rocha (IDIBAPS):
The main focus of our research is the study of the neuronal circuit mechanisms underlying perception and decision making. In particular we are interested in the neural basis of auditory representation and its dependence on brain state and other contextual variables (attention, expectation, etc). We investigate the generation and spatio-temporal structure of ongoing cortical activity, its impact on perception and on guiding decisions. We are particularly interested in the variability and co-variability among cortical neuron in their observed in the sensory-evoked responses of cortical neurons, the mechanisms which generate them and their role in a neural code. We combine population cortical recordings in rats, quantitative analysis and computational modeling to address these questions.

For further information:
http://neuro.fcrb.es/delaRochaLab

RESEARCH GROUP
THEORETICAL NEUROBIOLOGY OF CORTICAL CIRCUITS

Group Leader: Albert Compte (IDIBAPS)
Our research is aimed at clarifying the mechanisms that operate in the cortical microcircuit, with a view to conducting computations of relevance to behavior. The tools we use are computer-implemented cortical network models seeking biological plausibility, and technically sophisticated data-analysis tools. We work in parallel at two levels. On the one hand, we model the activity of the cortical microcircuit in order to understand and quantify the mechanisms underlying the generation of population activity in the circuit. On the other hand, we study the physiological bases of cognitive capacities such as working memory and selective attention, and their dysfunction in psychiatric disorders.

For further information:
http://complab.fcrb.es

PUBLICATIONS

ORIGINALS
I.F.: 54.40

1 Llagostera E.; Álvarez López M.J.; Scimia C.; Catalucci D.; Párrizas M.; Ruiz-Lozano P.; Kaliman P. **Altered β-adrenergic response in mice lacking myotonic dystrophy protein kinase.** MUSCLE NERVE. 45(1):128-30. **I.F.: 2.37.**

2 Scimia M.C.; Hurtado C.; Ray S.; Metzler S.; Wei K.; Wang J.; Woods C.E.; Purcell N.H.; Catalucci D.; Akasaka T.; Bueno O.F.; Vlasuk G.P.; Kaliman P.; Bodmer R.; Smith L.H.; Ashley E.; Mercola M.; Brown J.H.; Ruiz-Lozano P. **APJ acts as a dual receptor in cardiac hypertrophy.** NATURE. 488(7411):394-8. **I.F.: 36.28.**

3 Mattia M.; Sanchez-Vives M.V. **Exploring the spectrum of dynamical regimes and timescales in spontaneous cortical activity.** COGNITIVE NEURODYNAMICS. 6 (3): 239-250 Sp. Iss. **I.F.: 0.98.**

4 Benita J.M.; Guillamon A.; Deco G.; Sanchez-Vives M.V. **Synaptic depression and slow oscillatory activity in a biophysical network model of the cerebral cortex.** FRONTIERS IN COMPUTATIONAL NEUROSCIENCE. 6: 64. **I.F.: 2.60.**

5 Arnold M.M.; Szczepanski J.; Montejo N.; Amigo J.M.; Wajnryb E.; Sanchez-Vives M.V. **Information Content in Cortical Spike Trains during Brain State Transitions.** J SLEEP RES. Doi: 10.1111/j.1365-2869.2012.01031. **I.F.: 3.36.**

6 Normand J.M.; Sanchez-Vives M.V.; Waechter C.; Giannopoulos E.; Grosswindhager B.; Spanlang B.; Guger C.; Klinker G.; Srinivasan M.A.; Slater M. **Beaming into the Rat World: Enabling Real-Time Intereaction between Rat and Human each at their own scale.** PLOS ONE. 7(10): e48331. **I.F.: 4.41.**

7 Perez-Marcos D.; Solazzi M.; Steptoe W.; Oyekoya W.; Frisoli A.; Weyrich T.; Steed A.; Tecchia F.; Slater M.; Sanchez-Vives M.V. **A fully-immersive set-up for remote interaction and neurorehabilitation based on virtual body ownership.** FRONT. NEUR. 3:110. doi: 10.3389/fneur.2012.00110. **I.F.: Not yet.**

8 Kilteni K.; Normand J.M.; Sanchez-Vives M.V.; Slater M. **Extending Body Space in Immersive Virtual Reality: A Very Long Arm Illusion.** PLOS ONE. 7(7): e40867. **I.F.: 4.41.**

GRANTS FOR RESEARCH IN PROGRESS

Compte A. **Mecanismos de redes distribuidas en memoria de trabajo y atención selectiva.** Sponsored by: Ministerio de Educación, BFU2009_09537. Duration: 01/01/2010-31/12/2013.

Compte A. **Dinámica de la memoria: evidencia experimental.** Sponsored by: Ministerio de Economía y Competitividad BFU2011-14847-E. Duration: 01/01/2012-30/06/2013.

Compte, Albert. **Dynamics of memory: What is the evidence?** Sponsored by: AGAUR 2011 ARCS1 00043. Duration: 01/09/2008-31/08/2012

De La Rocha J. **Dinámica estocástica de los circuitos corticales y representación sensorial.** Sponsored by: Ministerio de Educación y Ciencia (MICINN), SAF201015730. Duration: 01/01/2011-31/12/2013.

De La Rocha J. **Network dynamics of auditory cortex and the impact of correlations on the encoding of sensory information.** Sponsored by: European Commission, FP7PEOPLE-IRG-10_01. Duration: 01/09/2010-31/08/2014.

Kaliman P. **Physical exercise and aging: transcriptional and epigenetic effects in and accelerated aging mouse model.** Sponsored by: Ministerio de Ciencia y Tecnología, SAF2010-15050. Duration: 01/01/2010-31/12/2013.

Kaliman P. **Wisconsin Center for the Neuroscience and Psychophysiology of Meditation.** Sponsored by: University of Wisconsin Madison, Office of Research and Sponsored Programs, U.WISC_ KALIMAN. Duration: 2012-2013.

Kaliman Pestchansky P.O. **Wisconsin Center for the Neuroscience and Psycophysiology of Meditation.** Sponsored by: National Institutes of Health U.WISC_KALIMAN_02. Duration:

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	51.07	11	4	5
2011	16.04	4	3	1
2012	54.40	8	3	2

Robbe D. **Dynamic of neuronal network interactions in the basal ganglia.** Sponsored by: European PUBLICATIONS Commission, 230976. Duration: 01/09/2008-31/08/2012.

Robbe D. **Basal Ganglia and the control of locomotion.** Sponsored by: European Commission, 253873. Duration: 01/10/2010-30/09/2012.

Sanchez-Vives M.V. **Dinámica y modulación de ritmos de la red cortical en diferentes estados cerebrales.** Sponsored by: Ministerio de Economía y Competitividad BFU2011-27094. Duration: 01/01/2012-31/12/2014.

Sanchez-Vives M.V. **Understanding brain network alteration leading to cognitive impairment in Down Syndrome and indentification of new therapeutic targets.** Sponsored by: Jérôme Lejeune Foundation INT_FLEJEUNE_2011_01. Duration: 21/02/2012-20/02/2014

Sanchez-Vives M.V. **BEAMING: Being through augmented media for natural networked gatherings.** Sponsored by: European Commission, 248620. Duration: 01/01/2010-30/06/2014.

Sanchez-Vives M.V. **Grups Consolidats de Recerca "Neurociencias de Sistemas".** Sponsored by: AGAUR, 2009 SGR1363. Duration: 01/01/2009-31/12/2013.

Sanchez-Vives M.V. **MELOMICS: Optimización de la respuesta terapéutica a la modulación de estímulos auditivos.** Sponsored by: Ministerio Ciencia e Innovación, INNPACTO IPT-300000-2010-0010. Duration: 22/06/2010-31/12/2013.

Sanchez-Vives M.V. **VERE: Virtual Embodiment and Robotic Re-Embodiment.** Sponsored by: European Commission, 257695. Duration: 01/06/2010-31/05/2015.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Clinical and experimental neuroimmunology

TEAM INVOLVED IN:

redEspañolade esclerosismúltiple

GROUP MEMBERS

TEAM LEADER
Francesc Graus (Hospital Clínic)
Tel.: 93 227 57 85
E-mail: fgraus@clinic.cat

GROUP LEADERS:
Pablo Villoslada (IDIBAPS)
Núria de la Iglesia (IDIBAPS)
Josep Dalmau (ICREA-IDIBAPS)

RESERCHERS:
Beatriz Moreno (IDIBAPS)
Lidia Sabater (Fundació Clínic)
Albert Saiz (Hospital Clínic)
Yolanda Blanco (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Ekaterina Kotelnikova (IDIBAPS)
Vesna Prchkovska (IDIBAPS)
Nuria Gresa (IDIBAPS)
Maarten Titulaer (IDIBAPS,)
Romana Höftberger (IDIBAPS)
Jesus Pladagumá (FIS)

PRE-DOCTORAL RESEARCHERS:
Inna Pertsovskaya (IDIBAPS)
Oihana Errea (IDIBAPS)
Sara Llufriu (IDIBAPS)
Francesco Mannara (Fundació Clínic)
Marta Moreno (FPI)
Iñigo Gabilondo (IDIBAPS)
Sara Martínez (IDIBAPS)
Elena Hernandez (IDIBAPS)

TECHNICIANS:
Begoña Fernández (IDIBAPS)
Nagore Escala (IDIBAPS)
Mercè Albà (Fundació Clínic)
Eva Caballero (Fundació Clínic)
Esther Aguilar (IDIBAPS)
Elena Fraga (IDIBAPS)

NURSING STAFF:
Montserrat Artola (IDIBAPS)

ADMINISTRATIVE STAFF:
Gemma Castillo (Fundació Clínic)
Eva Valero (IDIBAPS)
Laura Planas (IDIBAPS)
Maria Rodés (IDIBAPS)

COLLABORATORS:
Myrna Rosenfeld (IDIBAPS)
Santiago Ortiz (Hospital Clínic)
Bernardo Sanchez-Dalmau (Hospital Clínic)

STRATEGIC OBJECTIVES

1. The principal objective of the neuroimmunology group is the study of inflammation of the central nervous system, and of the mechanisms that are involved in this inflammatory response, and their implication in neurological disorders - fundamentally multiple sclerosis, autoimmune encephalitis and paraneoplastic neurological disorders.
2. Identification and characterization of factors implicated in the pathogenesis of gliomas, based on the study of proteins that control the maintenance, differentiation and migration of normal neural stem cells.

MAIN LINES OF RESEARCH

1. Study of autoimmune mechanisms in paraneoplastic neurological disorders.
2. Synaptic autoimmunity study in encephalitis and other autoimmune diseases of the central nervous system.
3. Development of biomarkers and new therapies in application to multiple sclerosis and other neurological diseases.
4. Functional imaging in neuroimmunology.
5. Study of the molecular bases of glioma pathogenesis: Identification and functional characterization of new factors implicated in the maintenance, differentiation and/or migration of neural stem cells, and study of the role of these factors in the initiation and invasion of gliomas.

RESEARCH GROUP
PATHOGENESIS AND NEW TREATMENTS IN MULTIPLE SCLEROSIS

Group Leader: Pablo Villoslada (IDIBAPS)

The great challenge for our research team is to apply our discoveries to the clinical management of patients with multiple sclerosis. By late 2013 we plan to enter the clinical phase of the study of BN201 as treatment in cases of multiple sclerosis. Also, our team is pioneering the application of systems biology to the study of MS and development new tools for personalized medicine. As the coordinating team of the RETICS REEM (Spanish Multiple Sclerosis Network - www.reem.es), another of our strategic objectives is the transverse diffusion of knowledge and optimum use of synergies, with a view to transferring the advances in research to the clinical practice setting and to patients. Lastly, the group has a constant commitment to innovation, both in terms of the generation of patents and as regards the creation of spin-off companies to cover the gap in financing existing between basic research and the clinical phase development of new drugs on the part of the biopharmaceutical industry.

EMERGENT GROUP
GLIOMA AND NEURAL STEM CELL GROUP

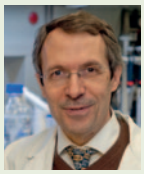
Group Leader: Nuria De La Iglesia (IDIBAPS)

Our research group is devoted to applying developmental neurobiology knowledge to the study of gliomas, some of the most aggressive human tumors. Gliomas arise from a rare subpopulation of cells which have stem-like properties such as self-renewal, multipotency and the ability to initiate a tumor upon serial transplantation. These so-called glioma initiating cells (GIC) share specific properties with neural stem cells (NSC), including the localization to specialized microenvironments within the brain that support their maintenance. This suggests that factors involved in either NSC maintenance or differentiation are likely to contribute to the pathogenesis of gliomas.

Our main lines of research are:

- Identification and characterization of new factors involved in NSC maintenance and differentiation, with a special emphasis on factors that mediate the localization of NSC to their niches.
- Functional characterization of the factors identified above in the initiation, maintenance and invasiveness of gliomas.
- Design of new, alternative therapies for gliomas.

RESEARCH GROUP
PATHOGENESIS OF AUTOIMMUNE NEURONAL DISORDERS



Group Leader: Josep Dalmau (IDIBAPS)

Our research is focused on a group of disorders at the intersection of autoimmunity, cancer and synaptic proteins. This includes the description of novel syndromes and associated immune-mechanisms, isolation of the target antigens and development of diagnostic tests and treatment strategies. These studies have identified 17 auto-antigens and have generated a number of diagnostic tests, some of which are used worldwide. In the last 5 years, we have discovered a new category of autoimmune disorders which affect memory, behavioural and cognitive functions and can cause psychosis. These disorders are associated with autoimmune responses characterised by antibodies against synaptic receptors and proteins, such as the glutamate receptors (NMDA, AMPA) or GABA(B) receptors, or against synaptic proteins related to epilepsy (LGI1, Caspr2).

Once the antigens are identified, our studies focus on identifying the cellular and molecular mechanisms by which the antibodies alter the function of the synaptic receptors and proteins, thereby causing symptoms. The results of these studies have had an impact on many different medical and neuroscience disciplines, providing a link between immunological processes and neuronal functions involved in memory, behaviour, psychosis, epilepsy and neuronal degeneration.

PUBLICATIONS

ORIGINALS
I.F.: 131.10

1 Rojas-Marcos I.; Picard G.; Chinchon D.; Gelpi E.; Psimaras D.; Giometto B.; Delattre J.Y.; Honnorat J.; Graus F. **Human epidermal growth factor receptor 2 overexpression in breast cancer of patients with anti-Yo-associated paraneoplastic cerebellar degeneration.** NEURO-ONCOLOGY. 14 (4): 506-510.
I.F.: 5.72.

2 Mannara F.; Valente T.; Saura J.; Graus F.; Saiz A.; Moreno B. **Passive Experimental Autoimmune Encephalomyelitis in C57BL/6 with MOG: Evidence of Involvement of B Cells.** PLOS ONE. 7: e52361-. **I.F.: 4.09.**

3 Pruess H.; Finke C.; Hoeltje M.; Hofmann J.; Klingbeil C.; Probst C.; Borowski K.; Ahnert-Hilger G.; Harms L.; Schwab J.M.; Ploner C.J.; Komorowski L.; Stoecker W.; Dalmau J.; Wandinger K.P. **N-Methyl-D-Aspartate Receptor Antibodies in Herpes Simplex Encephalitis.** ANNALS OF NEUROLOGY. 72: 902-911. **I.F.: 11.09.**

4 Stoeck K.; Sanchez-Juan P.; Gawinecka J.; Green A.; Ladogana A.; Pocchiari M.; Sanchez-Valle R.; Mitrova E.; Sklaviadis T.; Kulczycki J.; Slivarichova D.; Saiz A.; Calero M.; Knight R.; Aguzzi A.; Laplanche J.L; Peoc'h K.; Schelzke G.; Karch A.; Van Duijn C.M.; Zerr I. **Cerebrospinal fluid biomarker supported diagnosis of Creutzfeldt-Jakob disease and rapid dementias: a longitudinal multicentre study over 10 years.** BRAIN. 135: 3051-3061. **I.F.: 9.46.**

5 Gable M.S.; Sheriff H.; Dalmau J.; Tilley D.H.; Glaser C.A. **The Frequency of Autoimmune N-Methyl-D-Aspartate Receptor Encephalitis Surpasses That of Individual Viral Etiologies in Young Individuals Enrolled in the California Encephalitis Project.** CLINICAL INFECTIOUS DISEASES. 54 (7): 899-904. **I.F.: 9.15.**

6 Pruss H.; Holtje M.; Maier N.; Gomez A.; Buchert R.; Harms L.; Ahnert-Hilger G.; Schmitz D.; Terborg C.; Kopp U.; Klingbeil C.; Probst C.; Kohler S.; Schwab J.M.; Stoecker W.; Dalmau J.; Wandinger K.P. **IgA NMDA receptor antibodies are markers of synaptic immunity in slow cognitive impairment.** NEUROLOGY. 78 (22): 1743-1753. **I.F.: 8.31.**

7 Costa C.; Arrambide G.; Tintore M.; Castillo J.; Sastre-Garriga J.; Tur C.; Rio J.; Saiz A.; Vidal-Jordana A.; Auger C.; Nos C.; Rovira A.; Comabella M.; Horga A.; Montalban X. **Value of NMO-IgG determination at the time of presentation as CIS.** NEUROLOGY. 78 (20): 1608-1611. **I.F.: 8.31.**

8 Gleichman A.J.; Spruce L.A.; Dalmau J.; Seeholzer S.H.; Lynch D.R. **Anti-NMDA Receptor Encephalitis Antibody Binding Is Dependent on Amino Acid Identity of a Small Region within the GluN1 Amino Terminal Domain.** JOURNAL OF NEUROSCIENCE. 32(32):11082-94. **I.F.: 7.11.**

9 Leypoldt F.; Buchert R.; Kleiter I.; Marienhagen J.; Gelderblom M.; Magnus T.; Dalmau J.; Gerloff C.; Lewerenz J. **Fluorodeoxyglucose positron emission tomography in anti-N-methyl-D-aspartate receptor encephalitis: distinct pattern of disease.** JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY. 83 (7): 681-686. **I.F.: 4.76.**

10 Villoslada P.; Cuneo A.; Gelfand J.; Hauser S.L.; Green A. **Color vision is strongly associated with retinal thinning in multiple sclerosis.** MULTIPLE SCLEROSIS JOURNAL. 18 (7): 991-999. **I.F.: 4.25.**

11 Varade J.; Comabella M.; Ortiz M.A.; Arroyo R.; Fernandez O.; Pinto-Medel M.J.; Fedetz M.; Izquierdo G.; Lucas M.; Lopez Gomez C.; Catala Rabasa A.; Alcina A.; Matesanz F.; Alloza I.; Antigueedad Alfredo.; Garcia-Barcina M.; Otaegui D.; Olascoaga J.; Saiz A.; Blanco Y.; Montalban X.; Vandenbroeck K.; Urcelay E. **Replication study of 10 genes showing evidence for association with multiple sclerosis: validation of TMEM39A, IL12B and CLBL genes.** MULTIPLE SCLEROSIS JOURNAL. 18 (7): 959-965. **I.F.: 4.25.**

12 Alloza I.; Otaegui D.; De Lapuente A.L.; Antiguedad A.; Varade J.; Nunez C.; Arroyo R.; Urcelay E.; Fernandez O.; Leyva L.; Fedetz M.; Izquierdo G.; Lucas M.; Oliver-Martos B.; Alcina A.; Saiz A.; Blanco Y.; Comabella M.; Montalban X.; Olascoaga J.; Matesanz F.; Vandenbroeck K. **ANKRD55 and DHCR7 are novel multiple sclerosis risk loci.** GENES AND IMMUNITY. 13 (3): 253-257. **I.F.: 3.87.**

13 Bseikri M.R.; Barton J.R.; Kulhanjian J.A.; Dalmau J.; Cohen R.A.; Glaser C.A.; Roy-Burman A. **Anti-N-Methyl D-Aspartate receptor encephalitis mimics viral encephalitis.** PEDIATRIC INFECTIOUS DISEASE JOURNAL. 31 (2): 202-204. **I.F.: 3.58.**

14 Simo M.; Velasco R.; Graus F.; Verger E.; Gil M.; Pineda E.; Blasco J.; Bruna J. **Impact of antiepileptic drugs on thrombocytopenia in glioblastoma patients treated with standard chemoradiotherapy.** JOURNAL OF NEURO-ONCOLOGY. 108 (3): 451-458. **I.F.: 3.21.**

15 Boronat A.; Sepulveda M.; Llufriu S.; Sabater L.; Blanco Y.; Gabilondo I.; Sola N.; Villoslada P.; Dalmau J.; Graus F.; Saiz A. **Analysis of antibodies to surface epitopes of contactin-2 in multiple sclerosis.** JOURNAL OF NEUROIMMUNOLOGY. 244 (1-2): 103-106. **I.F.: 2.96.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	98.76	19	11	4
2011	139.97	24	12	5
2012	131.10	25	19	6

16 Sabater L.; Hoeftberger R.; Boronat A.; Saiz A.; Dalmau J.; Graus F. **Antibody repertoire in paraneoplastic cerebellar degeneration associated with small cell lung cancer.** JOURNAL OF NEUROIMMUNOLOGY. 253: 133-133. **I.F.: 2.96.**

17 Tanyi J.L.; Marsh E.B.; Dalmau J.; Chu C.S. **Reversible paraneoplastic encephalitis in three patients with ovarian neoplasms.** ACTA OBSTETRICIA ET GYNECOLOGICA SCANDINAVICA. 91 (5): 630-634. **I.F.: 1.77.**

18 Armangue T.; Petit-Pedrol M.; Dalmau J. **Autoimmune Encephalitis in Children.** JOURNAL OF CHILD NEUROLOGY. 27(11):1460-9. **I.F.: 1.75.**

19 Akasbi M.; Berenguer J.; Saiz A.; Brito-Zeron P.; Perez-De-Lis M.; Bove A.; Diaz-Lagares C.; Retamozo S.; Blanco Y.; Perez-Alvarez R.; Bosch X.; Siso A.; Graus F.; Ramos-Casals M. **White matter abnormalities in primary Sjogren syndrome.** QJM-AN INTERNATIONAL JOURNAL OF MEDICINE. 105 (5): 433-443. **I.F.: 2.32.**

20 Bien C.G.; Vincent A.; Barnett M.H.; Becker A.J.; Blumcke I.; Graus F.; Jellinger K.A.; Reuss D.E.; Ribalta T.; Schlegel J.; Sutton I.; Lassmann H.; Bauer J. **Immunopathology of autoantibody-associated encephalitides: clues for pathogenesis.** BRAIN. 135: 1622-1638 Part 5. **I.F.: 9.46.**

21 Llufriu S.; Blanco Y.; Martinez-Heras E.; Casanova-Molla J.; Gabilondo I.; Sepulveda M.; Falcon C.; Berenguer J.; Bargallo N.; Villoslada P.; Graus F.; Valls-Sole J.; Saiz A. **Influence of Corpus Callosum Damage on Cognition and Physical Disability in Multiple Sclerosis: A Multimodal Study.** PLOS ONE. 7 (5). **I.F.: 4.09.**

22 Sola-Valls N.; Gaba L.; Munoz E.; Mellado B.; Ribalta T.; Saiz A.; Graus F. **Paraneoplastic cerebellar degeneration associated with thymic germinoma.** JOURNAL OF THE NEUROLOGICAL SCIENCES. 320: 153-155. **I.F.: 2.35.**

23 Falip M.; Carreno M.; Miro J.; Saiz A.; Villanueva V.; Quilez A.; Molins A.; Barcelo I.; Sierra A.; Graus F. **Prevalence and immunological spectrum of temporal lobe epilepsy with glutamic acid decarboxylase antibodies.** EUROPEAN JOURNAL OF NEUROLOGY. 19 (6): 827-833. **I.F.: 3.69.**

24 Canto E.; Reverter F.; Morcillo-Suarez C.; Matesanz F.; Fernandez O.; Izquierdo G.; Vandenbroeck K.; Rodriguez-Antiguedad A.; Urcelay E.; Arroyo R.; Otaegui D.; Olascoaga J.; Saiz A.; Navarro A.; Sanchez A.; Dominguez C.; Caminero A.; Horga A.; Tintore M.; Montalban X.; Comabella M. **Chitinase 3-like 1 plasma levels are increased in patients with progressive forms of multiple sclerosis.** MULTIPLE SCLEROSIS JOURNAL. 18 (7): 983-990. **I.F.: 4.25.**

25 Schmitt SE, Pargeon K, Frechette ES, Hirsch LJ, Dalmau J, Friedman D. **Extreme delta brush: a unique EEG pattern in adults with anti-NMDA receptor encephalitis.** NEUROLOGY. 79(11):1094-100. **I.F.: 8.31.**

REVIEWS
I.F.: 45.62

1 Lancaster E.; Dalmau J. **Neuronal autoantigens-pathogenesis, associated disorders and antibody testing.** NATURE REVIEWS NEUROLOGY. 8 (7): 380-390. **I.F.: 12.46.**

2 Graus F.; Dalmau J. **Paraneoplastic neurological syndromes.** CURRENT OPINION IN NEUROLOGY. 25: 795-801. **I.F.: 4.94.**

3 Zuliani L.; Graus F.; Giometto B.; Bien C.; Vincent A. **Central nervous system neuronal surface antibody associated syndromes: review and guidelines for recognition.** JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY. 83 (6): 638-645. **I.F.: 4.76.**

4 Graus F, Dalmau J. CNS autoimmunity: new findings and pending issues. Lancet Neurol. 11(1):17-9. I.F.: 23.462.

EDITORIALS
I.F.: 8.31

1 Zhao C.Z.; Erickson J.; Dalmau J. **Clinical Reasoning: Agitation and psychosis in a patient after renal transplantation.** NEUROLOGY. 79: E41-E44. **I.F.: 8.31.**

CLINICAL GUIDELINES
I.F.: 1.83

1 Hoeftberger R.; Dalmau J.; Graus F. **Clinical neuropathology practice guide 5-2012: Updated guideline for the diagnosis of anti-neuronal antibodies.** CLINICAL NEUROPATHOLOGY. 31: 337-341. **I.F.: 1.04.**

2 Fernandez O.; Garcia-Merino J.A.; Arroyo R.; Alvarez-Cermeno J.C.; Arbizu T.; Izquierdo G.; Saiz A.; Olascoaga J.; Rodriguez-Antiguedad A.; Prieto J.M.; Oreja-Guevarak C.; Hernandez M.A.; Montalban X. **Spanish consensus on the use of natalizumab (Tysabri (R))-2011.** NEUROLOGIA. 27: 432-441. **I.F.: 0.79.**

MULTICENTRICS
I.F.: 53.30

1. Comi G; Jeffery D; Kappos L; Montalban X; Boyko A; Rocca MA; Filippi M; ALLEGRO Study Group. Placebo-controlled trial of oral laquinimod for multiple sclerosis. N ENGL J MED. 366(11):1000-9. IF: 53.30.

GRANTS FOR RESEARCH IN PROGRESS

Villoslada P. **Red Española de Esclerosis Múltiple.** Sponsored by: Instituto de Salud Carlos III, RD07/0060/0000. Duration: 10/02/2009-31/12/2013.

Villoslada P. **Estudio del daño axonal en esclerosis múltiple mediante estudios de neuroimagen de la vía óptica.** Sponsored by: Instituto de Salud Carlos III, PS09/00259. Duration: 01/01/2010-31/12/2012.

Graus F. **Anticuerpos contra de antígenos de membrana neuronal en síndormes neurológicos paraneoplásicos del sistema nervioso central.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI09/0193. Duration: 01/01/2010-31/12/2012.

Graus F. **Antibodies against neuronal membrane antigens in the opsoclonus-myoclus syndrome.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI12/00611. Duration: 01/01/2013-31/12/2015.

Villoslada P. **Studying the relapsing dynamics of major depression through network analysis of fMRI connectivity maps: inplications for therapy.** Sponsored by: Fundació La Marató de TV3, 091430. Duration: 29/01/2010-28/01/2013.

De la Iglesia N. **Factores de mantenimiento y diferenciación de células madre neurales como actores principales en la patogénesis de los gliomas.** Sponsored by: Ministerio de Educación, BFU2009_14616. Duration: 01/01/2010-31/12/2012.

Graus F.; Dalmau J. **Clinical spectrum and cellular and synaptic mechanisms of autoimmune synaptic encephalitides.** Sponsored by: Fundació La Marató de TV3, 101530. Duration: 10/12/2010-09/12/2013.

Saiz A. **Analysis of new antigens in seronegative (NMO-IgG/AQP4) neuromyelitis optica (Devic disease).** Sponsored by: Fundació La Marató de TV3, 101610. Duration: 10/12/2010-09/12/2013.

Mahy N.; Villoslada P. **Nuevas aproximaciones terapéuticas para la Esclerosis Múltiple y la Esclerosis Lateral Amiotrófica: efectos modificadores de la enfermedad y neuroprotección.** Sponsored by: Ministerio de Ciencia e Innovación - ADVANCELL -Advanced in vitro celltechno. IPT-010000-2010-0035. Duration: 25/06/2010-31/12/2012.

Dalmau J. **Paraneoplasic Disorders of CNS: Autoantigen.** Sponsored by: National Institutes of Health (NIH), NINDS 9RO1NS077851-05A2 (previously RO1CA107192). Duration: 01/04/2004-31/07/2016.

Dalmau J. **Caspr2, Igi-1 and novel antigen autoimmunity in neuropsychiatric dysfunction.** Sponsored by: NIMH, Eureka, 1RO1MH094741. Duration: 01/08/2011-30/04/2015.

Dalmau J. **Cellular, synaptic, and circuit mechanisms of autoimmune anti-glutamate receptor disorders of memory and cognition.** Sponsored by: MCKNIGHT FOUNDATION. Duration: 01/02/2010-31/01/2013.

Dalmau J. **Immunity to brain Ma proteins: A remote effect of cancer.** Sponsored by: National Institutes of Health (NIH), NCI, 2RO1CA89054-06A2. Duration: 01/12/2000-31/05/2013.

Dalmau J. **Synaptic autoimmunity in disorders of memory behavior, cognition and psychosis.** Sponsored by: NINDS/NIH ARRA Challenge Award, IRCINS068204. Duration: 30/09/2009-31/08/2012.

Villoslada P. **Congress of the International Society of Neuroimmunology (ISNI).** Sponsored by: Generalitat de Catalunya, AGAUR, AGAUR_ARCS10 2010 ARCS1 00329. Duration: 26/10/2010-04/05/2012.

Villoslada P. **Desarrollo de terapias neuroprotectoras para Esclerosis Múltiple.** Sponsored by: MICINN_INNPACTO11, IPT-2011-1312-900000. Duration: 04/05/2011-31/12/2013.

Villoslada P. **STOP-ELA: Aproximación multi-tecnológica para el desarrollo de nuevas terapias y sistemas.** Sponsored by: MICINN_INNPACTO11, IPT-2011-1091-900000. Duration: 20/09/2008-31/12/2012.

Villoslada P. **Congreso Internacional de Neuroinmunología.** Sponsored by: MICINN_AccCompl10 SAF2010-09238-E. Duration: 1/6/2010-30/4/14.

Dalmau J.; Nath A. **Treatment of anti-NMDA receptor encephalitis.** Sponsored by: NIH Beside to Brench Program. Duration: 01/05/12-30/04/14.

Villoslada P. **Development of a Raman Spectrofotometer Camera for molecular imaging of the retina in patients with retina and brain diseases.** Sponsored by: Institució CERCA PROVAT-2011-007-BES. Duration: 01/01/2012-31/12/2013.

Dalmau J. **Immune-mediated disorders of memory, behavior, cognition and psychosis.** Sponsored by: Fondo de Investigaciones Sanitarias de la Seguridad Social, 11/01780. Duration: 01/01/2012-31/12/2014.

De la Iglesia N. **Diferenciación neuronal dirigida de células "stem-like" iniciadoras de gliomas.** Sponsored by: Fundación Ramón Areces, CIVP16A1850. Duration: 27/6/2012-26/6/20.

DOCTORAL THESES

Graus F. **Anticossos contra antígens de membrana neuronal en encefalitis paraneoplàsica i idiopàtica.** PhD student: Anna Boronat Barado.

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neurobiology Unit

TEAM INVOLVED IN: ciberned

GROUP MEMBERS

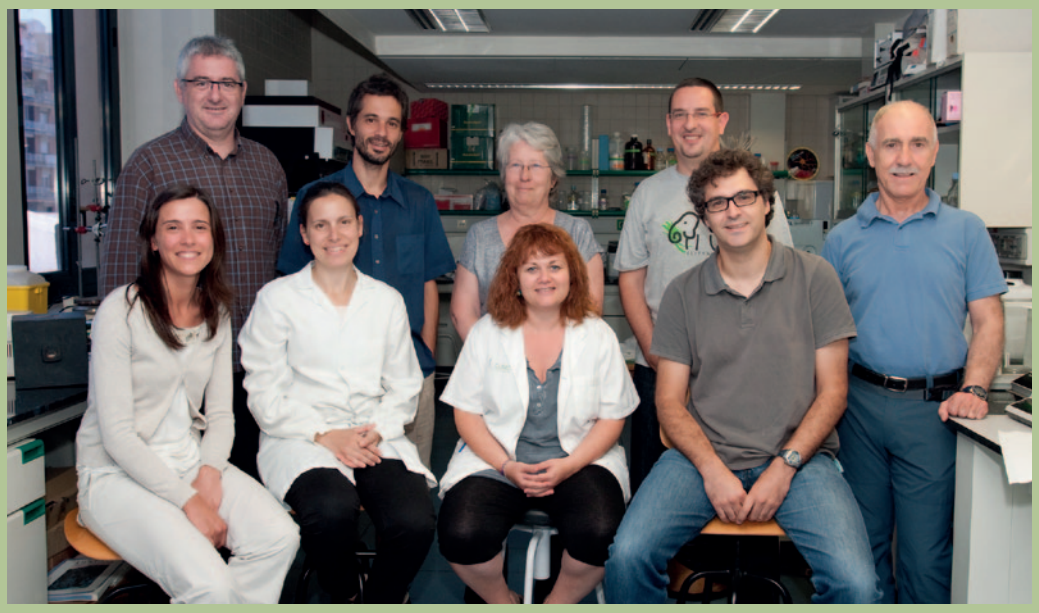
TEAM LEADER
Ramon Trullàs (IIBB-CSIC)
Tel.: 93 363 83 03
E-mail: ramon.trullas@iibb.csic.es

RESEARCHERS:
Nicole Mahy (UB)
Manuel Rodríguez (UB)

TECHNICIANS:
Carmen Andrade (UB)
Nuria Serra (CIBERNED)

PRE-DOCTORAL RESEARCHERS:
Javier Ortega (UB)
Joana Figueiro-Silva (IIBB-CSIC)
Margot Martínez (IDIBAPS)
Alan López (IDIBAPS)
Iván Cester (IDIBAPS)
Javier Gimeno-Bayón (UB)

COLLABORATORS:
Marco Pugliese (UB)
Petar Podlesniy (CIBERNED)
José Manuel Vidal-Taboada (UB)
Anna Gieryng (IDIBAPS)



CLINICAL AND EXPERIMENTAL NEUROSCIENCE

Neurobiology Unit

STRATEGIC OBJECTIVES

The Neurobiology Unit investigates molecular mechanisms of excitotoxic and apoptotic neuron death with the objective of identifying new therapeutic targets for the management of neurodegenerative diseases. Another objective is to gain knowledge of the mechanisms regulating neurogenesis in the adult brain.

MAIN LINES OF RESEARCH

1. Identify new biomarkers for early detection of Alzheimer's disease in the preclinical phase, using a new method of differential proteomic analysis.
2. Investigation of the function of neuronal pentraxin 1 (NP1) during programmed neuron death, with the hypothesis that inhibition of the expression of this protein may constitute a new treatment for chronic neurodegenerative disorders.
3. Study of the mechanism by which the KATP channel modulates microglial activation, thereby allowing the in vivo and in vitro characterization of the neuroprotective and neurotoxic effect of microglia in various neurological disorders, through the activation and blockade of this channel.
4. Investigation of the role of the glia in the neurogenesis mechanisms associated with chronic neurodegeneration in the hippocampus of the adult brain.
5. Investigation of the efficacy and safety of anti-A beta immunotherapy as treatment for Alzheimer's disease.

In the last year we have shown that NP1 inhibits the transport of mitochondria to synaptic terminals, reduces the amount of energy needed for normal functioning of synapses and disrupts communication between neurons. We have also shown that NP1 is responsible for the fragmentation of the mitochondria that occurs during neurodegenerative process. These results provide further evidence in support of the hypothesis that inhibition of the expression of NP1 may be an effective target for therapeutic intervention to prevent neurodegeneration in AD. The article where we published these results in 2012 was chosen as featured article in the Journal of Neuroscience. In addition, results obtained in the last year have allowed us to identify a new AD biomarker. This new biomarker can be detected well before the appearance of clinical symptoms of the disease and is present both in patients with familial AD and in subjects at risk for sporadic AD. We have also found that this biomarker is specific of AD and is not present in other types of dementia such as dementia associated with fronto-temporal lobe degeneration. These results have formed the basis for a patent application for a new method of preclinical diagnosis of AD. In our studies investigating the role of the KATP channel in the modulation of microglia activity, we have found that microglia regulates neuron survival in the first phases of cerebral stroke. We have shown that glibenclamide, administered during the early stages of ischemia to tMCAO rats, improves neurological outcome and preserves neurons in the lesioned core three days after reperfusion. Resident amoeboid microglia are the main cell population in the ischemic necrotic zone and express SUR1, SUR2B and Kir6.2 proteins that assemble in functional KATP channels. Our findings provide evidence showing that KATP channels play a key role in the control of microglial reactivity and suggest a neuroprotective role of microglia in the early stages of stroke.

PUBLICATIONS

ORIGINALS
I.F.: 34.98

1 Lopez-Hernandez B.; Posadas I.; Podlesniy P.; Abad M.A.; Trullas R.; Cena V. **HIF-1 alpha is neuroprotective during the early phases of mild hypoxia in rat cortical neurons.** EXPERIMENTAL NEUROLOGY. 233 (1): 543-554. **I.F.: 4.70.**

2 Clayton K.B.; Podlesniy P.; Figueiro-Silva J.; López-Doménech G.; Benitez L.; Enguita M.; Abad M.A.; Soriano E.; Trullas R. **NP1 regulates neuronal activity-dependent accumulation of BAX in mitochondria and mitochondrial dynamics.** J NEUROSCI. 32(4):1453-66 **I.F.: 7.11.**

3 López-Doménech G.; Serrat R.; Mirra S.; D'Aniello S.; Somorjai I.; Abad A.; Vitureira N.; García-Arumí E.; Alonso M.T.; Rodriguez-Prados M.; Burgaya F.; Andreu A.L.; García-Sancho J.; Trullas R.; Garcia-Fernàndez J.; Soriano E. **The Eutherian Armcx genes regulate mitochondrial trafficking in neurons and interact with Miro and Trak2.** NAT COMMUN. 3:814 **I.F.: 7.40.**

4 Zapata A.; Pontis S.; Schepers R.J.; Wang R.; Oh E.; Stein A.; Bäckman C.M.; Worley P.; Enguita M.; Abad M.A.; Trullas R.; Shippenberg T.S. **Alleviation of neuropathic pain hypersensitivity by inhibiting neuronal pentraxin 1 in the rostral ventromedialmedulla.** J NEUROSCI. 32(36):12431-6 **I.F.: 7.11.**

5 Ortega F.J.; Gimeno-Bayon J.; Espinosa-Parrilla J.F.; Carrasco J.L.; Batlle M.; Pugliese M.; Mahy N.; Rodríguez M.J. **ATP-dependent potassium channel blockade strengthens microglial neuroprotection after hypoxia-ischemia inrats.** EXPERIMENTAL NEUROLOGY. 235(1):282-96 **I.F.: 4.70.**

6 Bosch M.N.; Pugliese M.; Gimeno-Bayón J.; Rodríguez M.J.; Mahy N. **Dogs with cognitive dysfunction syndrome: a natural model of Alzheimer's disease.** CURR ALZHEIMER RES. 9(3):298-314 **I.F.: 3.95.**

GRANTS FOR RESEARCH IN PROGRESS

Mahy N. **Grup de Neuroquímica FM.** Sponsored by: AGAUR (Generalitat de Catalunya), 2009SGR1380. Duration: 01/01/2009-31/12/2013.

Mahy N.; Villoslada P. **Nuevas aproximaciones terapéuticas para la Esclerosis Múltiple y la Esclerosis Lateral Amiotrófica: efectos modificadores de la enfermedad y neuroprotección.** Sponsored by: Ministerio de Ciencia e Innovación ADVANCELL -Advanced in vitro cell techno. IPT-010000-2010-0035. Duration: 25/06/2010-31/12/2012.

Mahy N. **STOP-ELA: aproximación multi-tecnológica para el desarrollo de nuevas terapias y sistemas avanzados de administración farmacológica para la esclerosis lateral amiotrófica.** Sponsored by: Ministerio de Ciencia e Innovación, IPT-2011-1091-900000. Duration: 25/06/2011-31/12/2013.

Rodríguez M.J. **Nuevas aproximaciones terapéuticas basadas en derivados de ácidos grasos esenciales dirigidos a enfermedades oncológicas y neurológicas no cubiertas.** Sponsored by: Ministerio de Economia y Competitividad. IPT-2012-0614-010000. Duration 1/10/2012 - 31/12/2015.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	16.78	4	2	2
2011	11.11	2	1	0
2012	34.98	6	6	0

Trullas R. **Mecanismos de eliminación de sinapsis y dinámica mitocondrial durante la neurodegeneración: función de la pentraxina neuronal 1.** Sponsored by. Ministerio de Economia y competitividad. SAF2011-23550. Duration 1/1/2012- 31/12/2014

DOCTORAL THESES

April 2012. **"KATP Channel blockade instructs microglia to foster brain repair and neurogenesis after stroke".** PhD student: Francisco Javier Ortega González, Dept. Ciències Fisiològiques I, Facultat de Medicina de la UB. Director Manuel J Rodríguez.

June 2012. **"Desenvolupament d'una teràpia anti-amiloide per a la malaltia d'Alzheimer en el gos amb disfunció cognitiva".** PhD Student: Maria Neus Bosch Pont, Dept. Ciències Fisiològiques I, Facultat de Medicina de la UB. Director: Nicole Mahy, Manuel J. Rodríguez.

AREA 5

ONCOLOGY AND HAEMATOLOGY

BIOLOGICAL MARKERS IN ONCOLOGY 274

HUMAN AND EXPERIMENTAL FUNCTIONAL ONCOMORPHOLOGY 276

DIAGNOSIS AND THERAPY IN ONCOLOGY 285

MOLECULAR GENETICS 288

GENETICS 290

MELANOMA: IMAGING, GENETICS AND IMMUNOLOGY 293

HEMATOPOIETIC PROGENITOR CELL TRANSPLANTATION 298

HEMATOLOGICAL ONCOLOGY 302

PHYSIOPATHOLOGY AND MOLECULAR BASES IN HEMATOLOGY 310

HEMOTHERAPY - HEMOSTASIS 314

MOLECULAR AND TRANSLATIONAL ONCOLOGY 318

CELL PROLIFERATION AND SIGNALING 323

AREA 5

ONCOLOGY AND HAEMATOLOGY

Biological markers in oncology

GROUP MEMBERS

TEAM LEADER
Rafael Molina
(Hospital Clínic - UB)
Tel.: 93 227 54 00
E-mail: rmolina@clinic.cat

RESEARCHERS:
Xavier Filella (Hospital Clínic)

PRE-DOCTORAL RESEARCHER:
José María Auge Fradera (Fundació Clínic)
Jose M. Escudero (Fundació Clínic)

TECHNICIAN:
Alba Roset (Fundació Clínic)

COLLABORATORS:
F. Coca (Hospital Clínic)
Amàlia Lafuente (UB)
M. Portas (Hospital Clínic)
S. Román (Hospital Clínic)
M. Sasot (Hospital Clínic)

STRATEGIC OBJECTIVES

The group focuses mainly on applied clinical research and works in collaboration with different clinical groups both within and outside Hospital Clínic de Barcelona.

MAIN LINES OF RESEARCH

1. **Circulating tumor markers.** Development of new techniques for the study of biological markers, which are the peripheral expression of the presence of malignant tumors. Study of the usefulness of proPSA in the diagnosis of prostate cancer. Evaluation of new tumor markers such as: epididymal protein HE4, of great interest in ovarian cancer; and PCA3 in urine in prostate cancers.
2. **Consolidation of diagnostic guides to the clinical use of tumor markers.** Collaboration with European and North American groups for establishing consensus and publishing clinical guides. Diffusion of these guides at national level through the Cancer Biological Markers Commission, created by members of the group, within the scientific committee of the Spanish Society of Biochemistry and Molecular Pathology.
3. **Introduction of a technique for the detection of the PCA3 antigen by detection of mRNA in urine.** Evaluation of the clinical interest in this methodology and its application in the diagnosis of prostate cancer and in the reduction in the number of unnecessary prostate biopsies. Introduction of a new assay, HE-4 useful in the diagnosis and differential diagnosis of ovarian masses
4. **Collaboration in the colon and rectal cancer population screening program through the detection of occult blood in stools.** During the last year over 15,000 asymptomatic individuals have been analyzed.

5. **Evaluating two different protocols to use tumor markers as screening tools in lung cancer and ovarian cancer in combination with different deparments in the Hospital Clinic.**
6. **Evaluation and confirmation of the efficacy of a computer program for establishing risk in patients with symptoms suggestive of lung cancer which assesses risk on the basis of 6 tumour markers and points to the histological type (small cell or non-small-cell).** An added feature has been introduced to enable sub-classification of non-small-cell carcinomas into adenocarcinomas and squamous-cell carcinomas. The process of obtaining a licence for distribution of the program is presently underway.
7. **Evaluation of a computer program for establishing risk in patients with symptoms suggestive of cancer** (paraneoplastic syndromes), which assesses risk on the basis of 9 tumour markers and points to the origin.
8. **Evaluation and study of a population screening programme for ovarian cancer** through the determination of HE-4 and CA125 in high-risk women: BRCA-1, BRCA-2 mutations, previous medical history of breast and/or ovarian cancer.
9. **Investigation of cytokine involvement in cancer development and progression.** We are consolidating research into the clinical usefulness of cytokines in cancer patients. This line is preferentially developed in hematological and urological neoplasms.
10. **Markers used in pharmacogenetics.** Study of the genetic polymorphisms implicated in metabolism and pharmacological targets. This line is particularly focused on predicting the safety and efficacy of antineoplastic drugs. During the last year we have developed high performance genotyping techniques, such as minisequencing-SBE.

PUBLICATIONS

ORIGINALS
I.F.: 14.31

1 Tovar N.; Fernandez de Larrea C.; Elena M.; Cibeira M.T.; Arostegui J.I.; Rosinol L.; Filella X.; Yaguee J.; Blade J. **Prognostic Impact of Serum Immunoglobulin Heavy/Light Chain Ratio in Patients with Multiple Myeloma in Complete Remission after Autologous Stem Cell Transplantation.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18 (7): 1076-1079. **I.F.: 3.87.**

2 Trape J.; Molina R.; Sant F.; Montesinos J.; Arnau A.; Franquesa J.; Blavia R.; Martin E.; Marquilles E.; Perich D.; Perez C.; Roca J.M.; Domenech M.; Lopez J.; Badal J.M. **Diagnostic accuracy of tumour markers in serous effusions: a validation study.** TUMOR BIOLOGY. 33(5):1661-8. **I.F.: 2.14.**

3 Guarner-Argente C.; Martinez-Palli G.; Navarro-Ripoll R.; Cordova H.; Beltran M.; Martinez-Zamora M.A.; Comas J.; De Miguel C.R.; Rodriguez-D'Jesus A.; Filella X.; Hernandez-Cera C.; Lacy A.M.; Thompson C.C.; Fernandez-Esparrach G. **Inflammatory impact of NOTES peritoneoscopy is not different from that of laparoscopy: a randomized comparative study in a survival porcine model.** SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES. 26 (2): 374-380. **I.F.: 4.01.**

4 Molina R.; Bosch X.; Auge J.M.; Filella X.; Escudero J.M.; Molina V.; Sole M.; Lopez-Soto A. **Utility of serum tumor markers as an aid in the differential diagnosis of patients with clinical suspicion of cancer and in patients with cancer of unknown primary site.** TUMOR BIOLOGY. 33 (2): 463-474 Sp. Iss. **I.F.: 2.14.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	20.19	4	2	1
2011	26.71	6	4	2
2012	14.31	5	2	0

5 Molina V.; Visa L.; Conill C.; Navarro S.; Escudero J.M.; Auge J.M.; Filella X.; Lopez-Boado M.A.; Ferrer J.; Fernandez-Cruz L.; Molina R. **CA 19-9 in pancreatic cancer: retrospective evaluation of patients with suspicion of pancreatic cancer.** TUMOR BIOLOGY. 33 (3): 799-807 Sp. Iss. **I.F.: 2.14.**

REVIEWS
I.F.: 2.15

1 Molina R.; Escudero J.M.; Munoz M.; Auge J.M.; Filella X. **Circulating levels of HER-2/neu oncoprotein in breast cancer.** CLINICAL CHEMISTRY AND LABORATORY MEDICINE. 50 (1): 5-21. **I.F.: 2.15.**

AREA 5

ONCOLOGY AND HAEMATOLOGY

Human and experimental functional oncomorphology

GROUP MEMBERS

TEAM LEADER
Elías Campo Güerri (Hospital Clínic)
Tel.: 93 227 54 50
E-mail: ecampo@clinic.cat

GROUP LEADERS:
Antonio Postigo (ICREA - IDIBAPS)
Pedro Luis Fernández (Hospital Clínic)

RESEARCHERS:
Alfons Nadal (Hospital Clínic)
Antonio Martínez Pozo (Hospital Clínic)
Antonio Palacín (Hospital Clínic)
Carme Mallofré (Hospital Clínic)
José Francisco Ramírez (Hospital Clínic)
Josep Antoni Bombí (Hospital Clínic)
Llúcia Alós (Hospital Clínic)
Lluis Colomo (Hospital Clínic)
Lluis Hernández Pous (IDIBAPS)
Manel Solé (Hospital Clínic)
Pedro Jares (Hospital Clínic)
Sílvia M. Beà (Fundació Clínic)
Teresa María Ribalta (Hospital Clínic)
Virginia Amador (IDIBAPS)

POST-DOCTORAL RESEARCHER:
Adriana García Herrera (Hospital Clínic)
Alba Navarro López (IDIBAPS)
Cristina Royo Moreno (IDIBAPS)
Ester Valls Jordana (IDIBAPS)
Ester Sánchez Tilló (IDIBAPS)
Itziar Salaverria (Fundacion Clínic)
Giancarlo Castellano (IDIBAPS)
Laura Conde del Campo (Fundació Clínic)

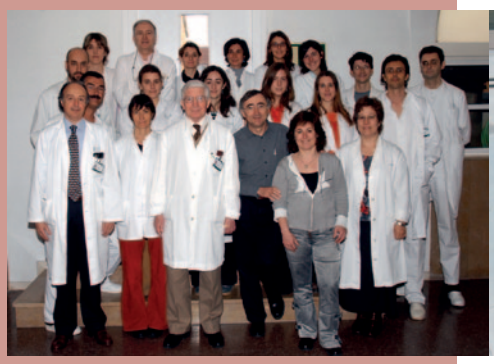
PRE-DOCTORAL RESEARCHERS:
David Martin (Fundación Clínic)
Jara Palomero Gorrindo (MCyT)
Laura Siles Mena (IDIBAPS)
Lourdes Sánchez Cid (IDIBAPS)
Maria Carmela Vegliante (Fundació Clínic)
Oriol de Barrios Barri (Fundació Clínic)
Daniel Martinez (Hospital Clínic)
Carla Solé Cañadas (Fundació Clínic)

TECHNICIANS:
Concepción Muñoz Lozano (IDIBAPS)
Cristina Capdevila Lózar (Fundació Clínic)
Eva Fernández López (Fundació Clínic - Hospital Clínic)
Laura Pla Rodríguez (IDIBAPS)
Miriam Prieto Beato (IDIBAPS)
Montse Sánchez Reina (IDIBAPS)
Noelia García Martínez (Fundació Clínic)
Nuria Russiñol (IDIBAPS)
Sara Guijarro Gallardo (Fundació Clínic)
Silvia Martín Román (Fundació Clínic)

ADMINISTRATIVE STAFF:
Carmen Muro (Fundació Clínic)
Judith Safont (Fundació Clínic)
Nathalie Villahoz (Fundació Clínic)

STATISTICIAN:
Guillem Clot Razquin (Fundació Clínic)

COLLABORATORS:
Magdalena Pinyol Martínez (IDIBAPS)
Ana Enjuanes Guardiola (IDIBAPS)
Rosa Miquel Morera (Hospital Clínic)
Miriam Cuatrecasas Freixas (Hospital Clínic)
Raquel Bermudo Gascón (IDIBAPS)



TEAM INVOLVED IN:

STRATEGIC OBJECTIVES

Identification of genetic and molecular mechanisms implicated in the **development and progression of human neoplasms.** Development of strategies for **transferring to clinical practice** the knowledge generated by basic research on human tumors. Identification of parameters allowing the improved diagnosis and prognosis of neoplastic disease, and the identification of possible therapeutic targets.

MAIN LINES OF RESEARCH

Molecular Pathology of Lymphoid Neoplasms:

a) To understand the genetic and molecular mechanisms involved in the development and progression of lymphoid neoplasms and identify parameters that may improve the diagnosis of these disease, stratify patients according to biological risk, and may be possible therapeutic targets.

b) To define the complete catalogue of somatic genomic alterations in several lympjhoid neoplasm and their clinical and functional relevance.

c) To develop strategies for transferring the knowledge generated in the basic studies of these neoplasms neoplasms into the clinics.

Molecular Pathology of Solid neoplasms:

a) Study of the molecular mechanisms of invasion and metastasis, transcriptional expression profiles implicated in the development and progression of different human tumors in relation to development, biological aggressivity and therapeutic options. We focus mainly on breast and prostate tumors as neoplasms under hormone influence, and urological tumors and airway neoplasms – including head and neck tumors.

b) Study of the possible criteria of treatment response and prognosis in neurological tumors.

RESEARCH GROUP
MOLECULAR PATHOLOGY OF SOLID TUMORS

Group Leader: Pedro Luis Fernández (Hospital Clínic)

We have continued the analysis of different types of solid tumours, in particular, urological, breast, nervous system and head and neck tumours. An important part of the research in prostate cancer is the study of practical applications of its genetic signature through analysis of material left over from biopsies which has been shown to be clinically viable. We are in contact with various possible partners in the biomedical industry in order to develop a commercial kit. Our collaboration with Dr Thomson's group at the IBM-CSIC in Barcelona has made it possible to analyse prostate cancer cell models with different degrees of aggressiveness, demonstrating the importance of the mesenchymal and metastatic phenotypes (Celia et al.). This study is being validated in human tumors. Our collaboration with other groups has allowed to discover prognostic RNA profiles in aggressive prostate cancers . In breast cancer, analysis of the microRNA profiles of primary infiltrating ductal carcinomas and their lymph node metastases has enabled us to define signatures of progression which are currently being validated in cellular models and human samples. Our study of head and neck tumors has led to the discovery of structural alterations in laryngeal carcinomas (Conde et al.).
In nervous system cancers , we analyzed the IDH1 mutations frequency in gliomas of different histological types and grades from children (cases from the Hospital Sant Joan de Déu) and adults. We observed the IDH1 mutation in most of the diffuse low grade gliomas and secondary glioblastomas in the adult, but no mutation was detected in the pediatric group. Our results confirm that, unlike adult gliomas, there is not an involvement of the IDH1 gene in the genesis and progression of pediatric gliomas and therefore it is not useful in this group to assess the IDH1 gene status for diagnostic or prognostic purposes. The research on head and neck tumours includes analysis of the genetic abnormalities in premalignant lesions in the mouth, with a particular focus on those that might be predictive of the development of carcinoma, and the molecular changes that occur in carcinoma of the larynx.
Finally, we have concluded paleopathological studies in ancient mummified subjects from the Bronze Age (Fernandez PL; Prats et al.) which have shed new late in early History of the Mediterranean area.

RESEARCH GROUP
MOLECULAR PATHOLOGY OF LYMPHOID NEOPLASMS

Group Leader: Elías Campo (Hospital Clínic)

Lymphoid neoplasias are a very heterogeneous group of tumors with remarkable variability in their biological behavior and clinical manifestations. Our group is concentrated in understanding the genetic, epigenetic, and molecular mechanisms underlying the biological diversity of these tumors and how they may influence the different clinical evolution of the patients. The use of Next generation sequiencing technologies in cancer samples is able to provide a full catalogue of the somatic alterations (both structural variants and mutations) of the tumor genomes. We are using these technologies to sequence the genome, exome and transcriptome of several lymphoid neoplasms, particularly chronic lymphocytic leukemia, mantle cell lymphoma and diffuse large B-cell lymphoma. We complement these studies with different methodological approaches that include DNA and methylation arrays and several biological cell and animal models. We validate the functional and clinical relevance of these somatic alterations in a large series of patients.

RESEARCH GROUP
TRANSCRIPTIONAL REGULATION OF GENIC EXPRESSION

Group Leader: Antonio Postigo (IDIBAPS)

The group investigates the molecular mechanisms involved in the regulation of gene expression during cell differentiation and cancer using as model the ZEB family of proteins and a wide array of in vitro and in vivo approaches. ZEB1 (also known as delta-EF1, zfhx1a) and ZEB2 (SIP1, zfhx1b) are transcription factors that regulate key genes involved in cell determination and differentiation, "stemness" in normal and cancer stem cells, oncogenic transformation and tumour invasion and metastasis. The group is funded by grants from the Spanish Ministry of Economy and Competitiveness, the European Union, the Spainish Association Against Cancer (AECC), Fundació La Caixa, Fundació Olga Torres and Avon Cosmetics SAU.

PUBLICATIONS

ORIGINALS
I.F.: 472.98

1 Gomez-Caro A.; Boada M.; Cabanas M.; Sanchez M.; Arguis P.; Lomena F.; Ramirez J.; Molins L. **False-negative rate after positron emission tomography/computer tomography scan for mediastinal staging in cl stage non-small-cell lung cancer.** EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY. 42 (1): 93-100. **I.F.: 2.55.**

2 Gelpi E.; Llado A.; Clarimon J.; Rey M.J.; Rivera R.M.; Ezquerra M.; Antonell A.; Navarro-Otano J.; Ribalta T.; Pinol-Ripoll G.; Perez A.; Valldeoriola F.; Ferrer I. **Phenotypic Variability Within the Inclusion Body Spectrum of Basophilic Inclusion Body Disease and Neuronal Intermediate Filament Inclusion Disease in Frontotemporal Lobar Degenerations With FUS-Positive Inclusions.** JOURNAL OF NEUROPATHOLOGY AND EXPERIMENTAL NEUROLOGY. 71: 795-805. **I.F.: 4.26.**

3 Martinez-Saez E.; Gelpi E.; Rey M.J.; Ferrer I.; Ribalta T.; Botta-Orfila T.; Nos C.; Yague J.; Sanchez-Valle R. **Hirano body-rich subtypes of Creutzfeldt-Jakob disease.** NEUROPATHOLOGY AND APPLIED NEUROBIOLOGY. 38 (2): 153-161. **I.F.: 3.80.**

4 Soriano S.; Alonso-Magdalena P.; Garcia-Arevalo M.; Novials A.; Muhammed S.J.; Salehi A.; Gustafsson J.A.; Quesada I.; Nadal A. **Rapid Insulinotropic Action of Low Doses of Bisphenol-A on Mouse and Human Islets of Langerhans: Role of Estrogen Receptor beta.** PLOS ONE. 7 (2). **I.F.: 4.09.**

5 Duch J.; Fuster D.; Munoz M.; Fernandez P.I.; Paredes P.; Fontanillas M.; Skaltsa K.; Domenech B.; Lomena F.; Pons F. **PET/CT with [18F] fluorodeoxyglucose in the assessment of metabolic response to neoadjuvant chemotherapy in locally advanced breast cancer.** QUARTERLY JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 56(3):291-8. **I.F.: 2.26.**

6 Machado Siqueira A.; Lopes Magalhaes B.M.; Cardoso Melo G.; Ferrer M.; Castillo P.; Martin-Jaular L.; Fernandez-Becerra C.; Ordi J.; Martinez A.; Guimaraes Lacerda M.V.; Del Portillo H.A. **Spleen Rupture in a Case of Untreated Plasmodium vivax Infection.** PLOS NEGLECTED TROPICAL DISEASES. 6: e1934. **I.F.: 4.72.**

7 Royo C.; Navarro A.; Clot G.; Salaverria I.; Gine E.; Jares P.; Colomer D.; Wiestner A.; Wilson W. H.; Vegliante M.C.; Fernandez V.; Hartmann E.M.; Trim N.; Erber W.N.; Swerdlow S.H.; Klapper W.; Dyer M.J.S.; Vargas-Pabon M.; Ott G.; Rosenwald A.; Siebert R.; Lopez-Guillermo A.; Ampo E.; Bea S. **Non-nodal type of mantle cell lymphoma is a specific biological and clinical subgroup of the disease.** LEUKEMIA. 26: 1895-1898. **I.F.: 9.56.**

8 Lopez C.; Baumann T.; Costa D.; Lopez-Guerra M.; Navarro A.; Gomez C.; Arias A.; Munoz C.; Rozman M.; Villamor N.; Colomer D.; Montserrat E.; Campo E.; Carrio A. **A new genetic abnormality leading to TP53 gene deletion in chronic lymphocytic leukaemia.** BRITISH JOURNAL OF HAEMATOLOGY. 156 (5): 612-618. **I.F.: 4.94.**

9 Quesada V.; Conde L.; Villamot N.; Ordonez G.R.; Jares P.; Bassaganyas L.; Ramsay A.J.; Bea S.; Pinyol M.; Martinez-Trillos A.; Lopez-Guerra M.; Colomer D.; Navarro A.; Baumann T.; Aymerich M.; Rozman M.; Delgado J.; Gine E.; Hernandez J.M.; Gonzalez-Diaz M.; Puente D.A.; Velasco G.; Freije J.M.P.; Tubio J.M.C.; Royo R.; Gelpi J.L.; Orozco M.; Pisano D.G.; Zamora J.; Vazquez M.; Valencia A.; Himmelbauer H.; Bayes M.; Heath S.; Gut M.; Gut I.; Estivill X.; Lopez-Guillermo A.; Puente X.S.; Campo E.; Lopez-Otin C. **Exome sequencing identifies recurrent mutations of the splicing factor SF3B1 gene in chronic lymphocytic leukemia.** NATURE GENETICS. 44 (1): 47-U70. **I.F.: 35.53.**

10 Lopez C.; Delgado J.; Costa D.; Conde L.; Ghita G.; Villamor N.; Navarro A.; Cazorla M.; Gomez C.; Arias A.; Munoz C.; Baumann T.; Rozman M.; Aymerich M.; Colomer D.; Cobo F.; Campo E.; Lopez-Guillermo A.; Montserrat E.; Carrio A. **NOTCH1 mutations in chronic lymphocytic leukemia with trisomy 12.** GENES CHROMOSOMES & CANCER. 51: 1064-1065. **I.F.: 3.31.**

11 Lopez C.; Delgado J.; Costa D.; Conde L.; Ghita G.; Villamor N.; Navarro A.; Cazorla M.; Gomez C.; Arias A.; Munoz C.; Baumann T.; Rozman M.; Aymerich M.; Colomer D.; Cobo F.; Campo E.; Lopez-Guillermo A.; Montserrat E.; Carrio A. **Different distribution of NOTCH1 mutations in chronic lymphocytic leukemia with isolated trisomy 12 or associated with other chromosomal alterations.** GENES CHROMOSOMES & CANCER. 51 (9): 881-889. **I.F.: 3.31.**

12 Perry A.M.; Cardesa-Salzmann T.M.; Meyer P.N.; Colomo L.; Smith L.M.; Fu K.; Greiner T.C.; Delabie J.; Gascoyne R.D.; Rimsza L.; Jaffe E.S.; Ott G.; Rosenwald A.; Braziel R.M.; Tubbs R.; Cook J.R.; Staudt L.M.; Connors J.M.; Sehn L.H.; Vose J.M.; Lopez-Guillermo A.; Campo E.; Chan W.C.; Weisenburger D.D. **A new biologic prognostic model based on immunohistochemistry predicts survival in patients with diffuse large B-cell lymphoma.** BLOOD. 120: 2290-2296. **I.F.: 9.90.**

13 Enjuanes A.; Benavente Y.; Hernandez-Rodriguez J.; Queralt C.; Yague J.; Jares P.; De Sanjose S.; Campo E.;

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	317.65	34	20	8
2011	322.81	50	31	9
2012	472.98	75	51	16

Cid M.C. **Association of NOS2 and potential effect of VEGF, IL6, CCL2 and IL1RN polymorphisms and haplotypes on susceptibility to GCA-a simultaneous study of 130 potentially functional SNPs in 14 candidate genes.** RHEUMATOLOGY. 51 (5): 841-851. **I.F.: 4.06.**

14 Perez N.S.; Garcia-Herrera A.; Rosinol L.; Palos L.; Santiago E.; Espinosa G.; Sole M.; Campistol J.M.; Quintana L.F. **Lymphoplasmacytic lymphoma causing light chain cast nephropathy.** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (1): 450-453. **I.F.: 3.40.**

15 Molina R.; Bosch X.; Auge J.M.; Filella X.; Escudero J.M.; Molina V.; Sole M.; Lopez-Soto A. **Utility of serum tumor markers as an aid in the differential diagnosis of patients with clinical suspicion of cancer and in patients with cancer of unknown primary site.** TUMOR BIOLOGY. 33 (2): 463-474 Sp. Iss. **I.F.: 2.14.**

16 Gonce A.; Marcos M.A.; Borrell A.; Lopez M.; Nadal A.; Figueras F.; Gratacos E. **Maternal IgM antibody status in confirmed fetal cytomegalovirus infection detected by sonographic signs.** PRENATAL DIAGNOSIS. 32: 817-821. **I.F.: 2.11.**

17 Celia-Terrassa T.; Meca-Cortes O.; Mateo F.; De Paz A.M.; Rubio N.; Arnal-Estape A.; Ell B.J.; Bermudo R.; Diaz A.; Guerra-Rebollo M.; Lozano J.J.; Estaras C.; Ulloa C.; Alvarez-Simon D.; Mila J.; Vilella R.; Paciucci R.; Martinez-Balbas M.; De Herreros A.G.; Gomis R.R.; Kang Y.B.; Blanco J.; Fernandez P.L.; Thomson T.M. **Epithelial-mesenchymal transition can suppress major attributes of human epithelial tumor-initiating cells.** JOURNAL OF CLINICAL INVESTIGATION. 122 (5): 1849-1868. **I.F.: 13.70.**

18 Puig S.; Bello Di Giacomo T.; Serra D.; Cabrini F.; Alos Ll.; Palou J.; Malvehy J. **Reflectance confocal microscopy of blue nevus.** EUROPEAN JOURNAL OF DERMATOLOGY. 22: 552-553. **I.F.: 2.53.**

19 Mora J.; Rodriguez E.; De Torres C.; Cardesa T.; Rios J.; Hernandez T.; Cardesa A.; Alava E. **Activated growth signaling pathway expression in Ewing sarcoma and clinical outcome.** PEDIATRIC BLOOD & CANCER. 58 (4): 532-538. **I.F.: 1.90.**

20 Bien C.G.; Vincent A.; Barnett M.H.; Becker A.J.; Blumcke I.; Graus F.; Jellinger K.A.; Reuss D.E.; Ribalta T.; Schlegel J.; Sutton I.; Lassmann H.; Bauer J. **Immunopathology of autoantibody-associated encephalitides: clues for pathogenesis.** BRAIN. 135: 1622-1638 Part 5. **I.F.: 9.46.**

21 Tremosini S.; Forner A.; Boix L.; Vilana R.; Bianchi L.; Reig M.; Rimola J.; Rodriguez-Lope C.; Ayuso C.; Sole M.; Bruix J. **Prospective validation of an immunohistochemical panel (glypican 3, heat shock protein 70 and glutamine synthetase) in liver biopsies for diagnosis of very early hepatocellular carcinoma.** GUT. 61: 1481-1487. **I.F.: 10.11.**

22 Rimola J.; Forner A.; Tremosini S.; Reig M.; Vilana R.; Bianchi L.; Rodriguez-Lope C.; Sole M.; Ayuso C.; Bruix J. **Non-invasive diagnosis of hepatocellular carcinoma <= 2 cm in cirrhosis. Diagnostic accuracy assessing fat, capsule and signal intensity at dynamic MRI.** JOURNAL OF HEPATOLOGY. 56 (6): 1317-1323. **I.F.: 9.26.**

23 Garcia Recio S.; Fuster G.; Fernandez Nogueira P.; Pastor Arroyo E.M.; Mayordomo Tella C.; Ametller E.; Park S.Y.; Fernandez P.L.; Gascon P.; Almendro V. **Transmodulation of ErbB Receptors by Proinflammatory Mediator Substance P.** EUROPEAN JOURNAL OF CANCER. 48: S192-S192. **I.F.: 5.54.**

24 Sola-Valls N.; Gaba L.; Munoz E.; Mellado B; Ribalta T.; Saiz A.; Graus F. **Paraneoplastic cerebellar degeneration associated with thymic germinoma.** JOURNAL OF THE NEUROLOGICAL SCIENCES. 320: 153-155. **I.F.: 2.35.**

25 Campo E. **New pathogenic mechanisms in Burkitt lymphoma.** NATURE GENETICS. 44: 1288-1289. **I.F.: 35.53.**

26 Johnson N.A.; Slack G.W.; Savage K.J.; Connors J.M.; Ben-Neriah S.; Rogic S.; Scott D.W.; Tan K.L.; Steidl C.; Sehn L.H.; Chan W.C.; Iqbal J.; Meyer P.N.; Lenz G.; Wright G.; Rimsza L.M.; Valentino C.; Brunhoeber P.; Grogan T.M.; Braziel R.M.; Cook J.R.; Tubbs R.R.; Weisenburger D.D.; Campo E.; Rosenwald A.; Ott G.; Delabie J.; Holcroft C.; Jaffe E.S.; Staudt L.M.; Gascoyne R.D. **Concurrent Expression of MYC and BCL2 in Diffuse Large B-Cell Lymphoma Treated With Rituximab Plus Cyclophosphamide, Doxorubicin, Vincristine, and Prednisone.** JOURNAL OF CLINICAL ONCOLOGY. 30: 3452-3459. **I.F.: 18.37.**

27 Heras M.; Solanes N.; Roura S.; Roque M.; Dantas A.R.; Martorell J.; Sitges M.; Ramirez J.; Bayes-Genis A.; Rigol Muxart M. **Alogeneic adipose tissue-derived stem cells in myocardial infarction: immune response and timing of administration.** EUROPEAN HEART JOURNAL. 33: 436-436. **I.F.: 10.48.**

28 Iqbal J.; Shen Y.L.; Liu Y.Y.; Fu K.; Jaffe E.S.; Liu C.L.; Liu Z.F.; Lachel C.M.; Deffenbacher K.; Greiner T.C.; Vose J.M.; Bhagavathi S.; Staudt L.M.; Rimsza L.; Rosenwald A.; Ott G.; Delabie J.; Campo E.; Braziel R.M.; Cook J.R.; Tubbs R.R.; Gascoyne R.D.; Armitage J.O.; Weisenburger D.D.; McKeithan T.W.; Chan W.C. **Genome-wide miRNA profiling of mantle cell lymphoma reveals a distinct subgroup with poor prognosis.** BLOOD. 119 (21): 4939-4948. **I.F.: 9.90.**

29 Deffenbacher K.E.; Iqbal J.; Sanger W.; Shen Y.L.; Lachel C.; Liu Z.F.; Liu Y.Y.; Lim M.S.; Perkins S.L.; Fu K.; Smith L.; Lynch J.; Staudt L.M.; Rimsza L.M.; Jaffe E.; Rosenwald A.; Ott G.K.; Delabie J.; Campo E.; Gascoyne R.D.; Cairo M.S.; Weisenburger D.D.; Greiner T.C.; Gross T.G.; Chan W.C. **Molecular distinctions between pediatric and adult mature B-cell non-Hodgkin lymphomas identified through genomic profiling.** BLOOD. 119 (16): 3757-3766. **I.F.: 9.90.**

30 Armengol-Alonso A.; Arance A.; Campayo M.; Gonzalez-Farre X.; Garcia-Herrera A.; Fernandez P.L.; Caparros X.; Alonso I.; Farrus B.; Munoz M. **Impact of body mass index (BMI) on disease free survival and likelihood of pathologic complete response in patients with locally advanced breast cancer treated with neoadjuvant chemotherapy.** ANNALS OF ONCOLOGY. 23: 135-135. **I.F.: 6.42.**

31 Soldini D.; Campo E. **New insights into the diagnosis of lymphomas.** ANNALS OF ONCOLOGY. 23: 83-88. **I.F.: 6.42.**

32 Capellades J.; Verger E.; Medrano S.; Gonzalez S.; Gil M.; Reynes G.; Ribalta T.; Gallego O.; Perez Segura P.; Balana C. **Rano criteria applied to a phase II multicenter study of sunitinib administeres as upfront therapy in glioblastoma (GB). A study of the geino Spanish group.** NEURO-ONCOLOGY. 14: 75-75. **I.F.: 5.72.**

33 Chamorro N.; Blanco I.; Sanchez M.; Ramirez J.; Barbera J.A.; Agusti C. **The Expanding Horizons of Endobronchial Ultrasound Diagnosis of a Tumor Embolism.** CHEST. 142: 1334-1336. **I.F.: 5.25.**

34 Agell L.; Hernandez S.; Nonell L.; Lorenzo M.; Puigdecanet E.; De Muga S.; Juanpere N.; Bermudo R.; Fernandez P.L.; Lorente J.A.; Serrano S.; Lloreta J. **A 12-Gene Expression Signature Is Associated with Aggressive Histological in Prostate Cancer SEC14L1 and TCEB1 Genes Are Potential Markers of Progression.** AMERICAN JOURNAL OF PATHOLOGY. 181: 1585-1594. **I.F.: 4.90.**

35 Hartmann E.M.; Bea S.;Navarro A.; Trapp V.; Campo E.; Ott G.; Rosenwald A. **Increased tumor cell proliferation in mantle cell lymphoma is associated with elevated insulin-like growth factor 2 mRNA-binding protein 3 expression.** MODERN PATHOLOGY. 25: 1227-1235. **I.F.: 4.79.**

36 Pongpruttipan T.; Sukpanichnant S.; Assanasen T.; Wannakrairot P.; Boonsakan P.; Kanoksil W.; Kayasut K.; Mitarnun W.; Khuhapinant A.; Bunworasate U.; Puavilai T.; Bedavanija A.; Garcia-Herrera A.; Campo E.; Cook J.R.; Choi J.; Swerdlow S.H. **Extranodal NK/T-cell Lymphoma, Nasal Type, Includes Cases of Natural Killer Cell and alpha beta, gamma delta, and alpha beta/gamma delta T-cell Origin: A Comprehensive Clinicopathologic and Phenotypic Study.** AMERICAN JOURNAL OF SURGICAL PATHOLOGY. 36 (4): 481-499. **I.F.: 4.35.**

37 Perez-Magan E.; Campos-Martin Y.; Mur P.; Fiano C.; Ribalta T.; Fernando Garcia J.; Rey J.A.; Rodriguez de Lope A.; Mollejo M.; Melendez B. **Genetic Alterations Associated With Progression and Recurrence in Meningiomas.** JOURNAL OF NEUROPATHOLOGY AND EXPERIMENTAL NEUROLOGY. 71: 882-893. **I.F.: 4.26.**

38 Valdes-Mas R.; Bea S.; Puente D.A.; Lopez-Otin C.; Puente X.S. **Estimation of Copy Number Alterations from Exome Sequencing Data.** PLOS ONE. 7. **I.F.: 4.09.**

39 Hsiao S.C.; Ribera Cortada I.; Colomo L.; Ye H.; Liu H.; Kuo S.Y.; Lin S.H.; Chang S.T.; Kuo T.U.; Campo E.; Chuang S.S. **SOX11 is useful in differentiating cyclin D1-positive diffuse large B-cell lymphoma from mantle cell lymphoma.** HISTOPATHOLOGY. 61: 685-693. **I.F.: 3.08.**

40 Conde L.; Vilaseca I.; Alos Ll.; Bernal-Sprekelsen M.; Cardesa A.; Nadal A. **Methylthioadenosine phosphorylase inactivation depends on gene deletion in laryngeal squamous cell carcinoma.** HISTOPATHOLOGY. 61(6):1082-8. **I.F.: 3.08.**

41 Papathomas T.G.; Venizelos I.; Dunphy C.H.; Said J.W.; Wang M.L.; Campo E.; Swerdlow S.H.; Chan J.C.; Bueso-Ramos C.E.; Weisenburger D.D.; Medeiros L.J.; Young K.H. **Mantle cell lymphoma as a component of composite lymphoma: clinicopathologic parameters and biologic implications.** HUMAN PATHOLOGY. 43 (4): 467-480. **I.F.: 2.88.**

42 Larque A.B.; Tomas X.; Gonzalez B.; Garcia A.I.; Pomes J.; Castillo P.; Del Amo M.; Ramirez J. **Needle aspiration in the diagnosis of metastatic bone disease.** VIRCHOWS ARCHIV. 461: S41-S42. **I.F.: 2.49.**

43 Odar K.; Zidar N.; Bonin S.; Gale N.; Cardesa A.; Stanta G. **Desmosomes in verrucous carcinoma of the head and neck.** HISTOLOGY AND HISTOPATHOLOGY. 27 (4): 467-474. **I.F.: 2.48.**

44 Vaquero E.C.; Visa L.; Samper E.; Rickmann M.; Sangrador I.; Postigo A.; Sanchez E.; Balsells J.; Fernandez-Cruz L.; Molero X. **Human Pancreatic Fibroblasts Promote Epithelial to Mesenchymal Transition (EMT) in Pancreatic Cancer Cells Through ZEB Dependent and Independent Signaling.** PANCREAS. 41: 1411-1411. **I.F.: 2.39.**

45 Sunol M.; Ribalta T.; Cruz O.; Cusi V.; Rovira C.; Jou C.; Galvan P.; Rodriguez E.; De Torres C. **Pediatric gliomas. Analysis of IDH1 mutations.** PEDIATRIC BLOOD & CANCER. 59: 1087-1087. **I.F.: 1.89.**

46 Dominguez-Fandos D.; Peinado V.I.; Puig-Pey R.; Ferrer E.; Musri M.M.; Ramirez J.; Barbera J.A. **Pulmonary Inflammatory Reaction and Structural Changes Induced by Cigarette Smoke Exposure in the Guinea Pig.** COPD-JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. 9: 473-484. **I.F.: 1.79.**

47 Garcia-Alvarez S.M.; Olondo-Zulueta L.; Pericas J.M.; Colomo Ll.; Bosch X. **Numb Chin Syndrome with Vagal and Hypoglossal Paralysis: An Initial Sign of an Uncommon Diagnosis.** AMERICAN JOURNAL OF THE MEDICAL SCIENCES. 344: 241-244. **I.F.: 1.39.**

48 Alijotas-Reig J.; Sole M.; Martinez M.A. **A 28-years old pregnant woman with systemic lupus erythematosus, proteinuria and arterial hypertension.** MEDICINA CLINICA. 139: 489-497. **I.F.: 1.38.**

49 Garrido P.; De Castro J.; Concha A.; Felip E.; Isla D.; Lopez-Rios F.; Paz-Ares L.; Ramirez J.; Sanz J.; Gomez J.J. **Guidelines for biomarker testing in advanced non-small-cell lung cancer. A national consensus of the Spanish Society of Medical Oncology (SEOM) and the Spanish Society of Pathology (SEAP).** CLINICAL & TRANSLATIONAL ONCOLOGY. 14 (5): 338-349. **I.F.: 1.33.**

50 Parada D.; Pena K.B.; Gil I.; Queralt R.; Garcia A.; Alos L. **Interdigitating dendritic cell sarcoma presenting in the nasal region.** PATHOLOGY RESEARCH AND PRACTICE. 208 (6): 368-371. **I.F.: 1.21.**

51 Prats-Munoz G.; Malgosa A.; Armentano N.; Galtes I.; Esteban J.; Bombi J.A.; Tortosa M.; Fernandez E.; Jordana X.; Isidro A.; Fullola J.M.; Petit M.A.; Guerrero V.M.; Calvo M.; Fernandez P.L. **A Paleoneurohistological Study of 3,000-Year-Old Mummified Brain Tissue from the Mediterranean Bronze Age.** PATHOBIOLOGY. 79 (5): 239-246. **I.F.: 1.18.**

52 Fernandez P.L. **Palaeopathology: The Study of Disease in the Past.** PATHOBIOLOGY. 79 (5): 221-227. **I.F.: 1.18.**

53 Ramirez J.; Fernandez-Sueiro J.L.; Lopez-Mejias R.; Montilla C.; Arias M.; Moll C.; Alsina M.; Sanmarti R.; Lozano F.; Canete J.D. **FCGR2A/CD32A and FCGR3A/CD16A Variants and EULAR Response to Tumor Necrosis Factor-alpha Blockers in Psoriatic Arthritis: A Longitudinal Study with 6 Months of Followup.** JOURNAL OF RHEUMATOLOGY. 39 (5): 1035-1041. **I.F.: 3.69.**

54 Chimenti L.; Luque T.; Bonsignore M.R.; Ramirez J.; Navajas D.; Farre R. **Pre-treatment with mesenchymal stem cells reduces ventilator-induced lung injury.** EUROPEAN RESPIRATORY JOURNAL. 40: 939-948. **I.F.: 5.89.**

55 Rosich L.; Xargay-Torrent S.; Lopez-Guerra M.; Campo E.; Colomer D.; Roue G. **Counteracting Autophagy Overcomes Resistance to Everolimus in Mantle Cell Lymphoma.** CLINICAL CANCER RESEARCH. 18: 5278-5289. **I.F.: 7.74.**

56 Moros A.; Saborit-Villarroya I.; Perez-Galan P.; Martinez A.; Campo E.; Colomer D.; Roue G. **Activity of Lenalidomide in Vitro and in Vivo Models of Bortezomib-resistant Mantle Cell Lymphoma Involving the Modulation of C-myc/p27 Axis.** EUROPEAN JOURNAL OF CANCER. 48: S188-S189. **I.F.: 5.54.**

57 Rosich L.; Xargay-Torrent S.; Lopez-Guerra M.; Campo E.; Colomer D.; Roue G. **Autophagy Inhibition Sensitizes Mantle Cell Lymphoma Cells to Everolimus.** EUROPEAN JOURNAL OF CANCER. 48: S204-S204. **I.F.: 5.54.**

58 Xargay-Torrent S.; Lopez-Guerra M.; Saborit-Villarroya I.; Rosich L.; Navarro A.; Perez-Galan P.; Roue G.; Campo E.; Colomer D. **Sorafenib Inhibits Cell Migration and Stroma-mediated Bortezomib Resistance by Interfering BCR Signaling and Protein Translation in Mantle Cell Lymphoma.** EUROPEAN JOURNAL OF CANCER. 48: S252-S252. **I.F.: 5.54.**

59 Kulis M.; Heath S.; Bibikova M.; Queiros A.C.; Navarro A.; Clot G.; Martinez-Trillos A.; Castellano G.; Brun-Heath I.; Pinyol M.; Barberan-Soler S.; Papasaikas P.; Jares P.; Bea S.; Rico D.; Ecker S.; Rubio M.; Royo R.; Ho V.; Klotzle B.; Hernandez Ll.; Conde L.; Lopez-Guerra M.; Colomer D.; Villamor N.; Aymerich M.; Rozman M.; Bayes M.; Gut M.; Gelpi J.L.; Orozco M.; Fan J.B.; Quesada V.; Puente X.S.; Pisano D.G.; Valencia A.; Lopez-Guillermo A.; Gut I.; Lopez-Otin C.; Campo E.; Martin-Subero J.I. **Epigenomic analysis**

detects widespread gene-body DNA hypomethylation in chronic lymphocytic leukemia. NATURE GENETICS. 44: 1236-1242. **I.F.: 35.53.**

60 Navarro A.; Clot G.; Royo C.; Jares P.; Hadzidimitriou A.; Agathangelidis A.; Bikos V.; Darzentas N.; Papadaki T.; Salaverria I.; Pinyol M.; Puig X.; Palomero J.; Vegliante M.C.; Amador V.; Martinez-Trillos A.; Stefancikova L.; Wiestner A.; Wilson W.; Pott, C.; Calasanz M.J.; Trim N.; Erber W.; Sander B.; Ott G.; Rosenwald A.; Colomer D.; Gine E.; Siebert R.; Lopez-Guillermo A.; Stamatopoulos K.; Bea S.; Campo E. **Molecular Subsets of Mantle Cell Lymphoma Defined by the IGHV Mutational Status and SOX11 Expression Have Distinct Biologic and Clinical Features.** CANCER RESEARCH. 72: 5307-5316. **I.F.: 7.86.**

61 Jares P.; Colomer D.; Campo E. **Molecular pathogenesis of mantle cell lymphoma.** JOURNAL OF CLINICAL INVESTIGATION. 122: 3416-3423. **I.F.: 13.07.**

62 Marin-Aguilera M.; Codony-Servat J.; Kalko S.G.; Fernandez P.L.; Bermudo R.; Buxo E.; Ribal M.J.; Gascon P.; Mellado B. **Identification of Docetaxel Resistance Genes in Castration-Resistant Prostate Cancer.** MOLECULAR CANCER THERAPEUTICS. 11 (2): 329-339. **I.F.: 5.23.**

63 Mula R.; Gonce A.; Bennasar M.; Arigita M.; Meler E.; Nadal A.; Sanchez A.; Botet F.; Borrell A. **Increased nuchal translucency and normal karyotype: perinatal and pediatric outcomes at 2 years of age.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (1): 34-41. **I.F.: 3.01.**

64 Gonzalez B.; Rovira J.; Valera A.; Martinez D.; Larque A.B.; Sole C.; Colomo L.; Gine E.; Campo E.; Lopez Guillermo A.; Martinez A. **EBV replication in tumor samples of Post-transplant Lymphoproliferative Disorders (PTLD) is associated with aggressive clinical course.** VIRCHOWS ARCHIV. 461: S19-S20. **I.F.: 2.49.**

65 Matas-Cespedes A.; Rodriguez V.; Roue G.; Campo E.; Lopez-Guillermo A.; Colomer D.; Perez-Galan P. **The Novel PI3K Kinase Inhibitor NVP-BKM120 Shows in Vitro and in Vivo Efficacy in Follicular Lymphoma by Disrupting Microenvironment Survival Signaling.** EUROPEAN JOURNAL OF CANCER. 48: S190-S190. **I.F.: 5.54.**

66 Martinez A.; Ponzoni M.; Agostinelli C.; Hebeda K.M.; Matutes E.; Peccatori J.; Campidelli C.; Espinet B.; Perea G.; Acevedo A.; Mehrjardi A.Z.; Martinez-Bernal M.; Gelemur M.; Zucca E.; Pileri S.; Campo E.; Lopez-Guillermo A.; Rozman M. **Primary Bone Marrow Lymphoma: An Uncommon Extranodal Presentation of Aggressive Non-Hodgkin Lymphomas.** AMERICAN JOURNAL OF SURGICAL PATHOLOGY. 36 (2): 296-304. **I.F.: 4.35.**

67 Palacin A.; Gomez-Casado C.; Rivas L.; Aguirre J.; Tordesillas L.; Bartra J.; Blanco C.; Carrillo T.; Cuesta-Herranz J.; Cumplido Bonny J.; Garcia-Nunez I; Fernandez J.; Gamboa P.; Munoz R.; Sanchez-Monge R.; Sirvent S.; Varela Losada S.; Villalba M.; Parro V.; Blanca M.; Salcedo G.; Diaz-Perales A. **Analysis of plant food cross-reactivity using a new allergen microarray: geographical recognition of lipid transfer proteins and thaumatins in fruit allergic patients.** ALLERGY. 67: 86-87. **I.F.: 6.27.**

68 Catoggio C.; Alvarez-Uria A.; Fernandez P.L.; Cervera R.; Espinosa G. **Catastrophic antiphospholipid syndrome triggered by fulminant disseminated herpes simplex infection in a patient with systemic lupus erythematosus.** LUPUS. 21: 1359-1361. **I.F.: 2.34.**

69 Salerni G.; Carrera C.; Lovatto L.; Marti-Laborda R.M.; Isern G.; Palou J.; Alos Ll.; Puig S.; Malvehy J. **Characterization of 1152 lesions excised over 10 years using total-body photography and digital dermatoscopy in the surveillance of patients at high risk for melanoma.** JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 67: 836-845. **I.F.: 3.99.**

70 Pascal M.; Munoz-Cano R.; Reina Z.; Palacin A.; Vilella R.; Picado C.; Juan M.; Sanchez-Lopez J.; Rueda M.; Salcedo G.; Valero A.; Yaguee J.; Bartra J. **Lipid transfer protein syndrome: clinical pattern, cofactor effect and profile of molecular sensitization to plant-foods and pollens.** CLINICAL AND EXPERIMENTAL ALLERGY. 42: 1529-1539. **I.F.: 5.03.**

71 Villanueva A.; Alsinet C.; Yanger K.; Hoshida Y.; Zong Y.; Toffanin S.; Rodriguez-Carunchio L.; Sole M.; Thung S.; Stanger B.Z.; LlovetJ.M. **Notch Signaling Is Activated in Human Hepatocellular Carcinoma and Induces Tumor Formation in Mice.** GASTROENTEROLOGY. 143: 1660. **I.F.: 11.67.**

72 Visa L.; Samper E.; Rickmann M.; Postigo A.; Sanchez-Tilo E.; Fernandez-Cruz L.; Maurel J.; Molero X.; Vaquero E.C. **ZEB1 and ZEB2 mediate pancreatic fibroblast induced epithelial to mesenchymal transition (EMT) in pancreatic cancer.** ANNALS OF ONCOLOGY. 23: 67-67. **I.F.: 6.42.**

73 Cardesa-Salzmann T.; Colomo I.; Roue G.; Soldini D.; Martinez-Pozo A.; Clot G.; Mora J.; Cruz O.; Maradiegue E.; De Torres C.; Sunol M.; Jou C.; Rovira C.; Cusi V.; Gutierrez G.; Climent F.; Gonzalez-Barca E.; Mercadal S.; Mate J.L.; Ribera J.M.; Combalia N.; Arenillas L.; Serrano S.; Fernandez E.; Pinyol M.; Jares P.; Campo E.; Lopez-Guillermo A. **Tissular cytokine and chemokine**

receptor expression in Burkitt lymphoma (BL) and diffuse large B cell lymphoma (DLBCL). BRITISH JOURNAL OF HAEMATOLOGY. 159: 53-54. **I.F.: 4.94.**

74 Tovar N.; Cibeira M.T.; Rosinol L.; Sole M.; Fernandez de Larrea C.; Escoda L.; Rovira M.; Blade J. **Bortezomib/dexamethasone followed by autologous stem cell transplantation as front line treatment for light-chain deposition disease.** EUROPEAN JOURNAL OF HAEMATOLOGY. 89: 340-344. **I.F.: 2.61.**

75 Carvajal-Cuenca A.; Sua L.F.; Silva N.M.; Pittaluga S.; Royo C.; Song J.Y.; Sargent R.L.; Espinet B.; Climent F.; Jacobs S.A.; Delabie J.; Naresh K.N.; Bagg A.; Brousset P.; Warnke R.A.; Serrano S.; Harris N.L.; Swerdlow S.H.; Jaffe E.S.; Campo E. **In situ mantle cell lymphoma: clinical implications of an incidental finding with indolent clinical behavior.** HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 97 (2): 270-278. **I.F.: 6.42.**

EDITORIALS
I.F.: 7.91

1 Adan A.; Sole M.; Mateo C.; Saint Jean A.; Alforja S. **Cytologic identification of Toxoplasma gondii from subretinal aspirate.** ACTA OPHTHALMOLOGICA. 90 (4): 392-393. **I.F.: 2.63.**

2 Navarro S.; Ferrer J.; Bombi J.A.; Lopez-Boado M.A.; Ayuso J.R.; Gines A.; Fernandez-Esparrach G.; Vaquero E.; Cuatrecasas M.; Fernandez-Cruz L. **Pseudopapillary solid tumor of the pancreas: Report of 6 cases.** MEDICINA CLINICA. 138 (3): 114-118. **I.F.: 1.38.**

3 Franco A.; Esteban J.; Canas-Galvez F.D.; Fernandez P.L. **Paleoendoscopy: the paleopathological study of Sancho's mummy, son of king Pedro I of Castilla The Cruel (XIV century).** MEDICINA CLINICA. 138 (1): 37-40. **I.F.: 1.38.**

4 Mula R.; Gonce A.; Bennasar M.; Arigita M.; Meler E.; Nadal A.; Anchez A.S.; Botet F.; Borrell A. **Increased Nuchal Translucency and Normal Karyotype: Perinatal and Pediatric Outcomes at 2 Years of Age EDITORIAL COMMENT.** OBSTETRICAL & GYNECOLOGICAL SURVEY. 67 (5): 279-280. **I.F.: 2.51.**

GRANTS FOR RESEARCH IN PROGRESS

Alos L. **Alteraciones genéticas predictivas del desarrollo del carcinoma escamoso oral. Diseño de sondas con hibridación in situ fluorescente para el diagnóstico de lesiones preneoplásicas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01570. Duration: 1/1/2012-31/12/2014.

Alos L. **Identificación de las alteraciones genéticas en la mucosa oral predictivas del desarrollo del carcinoma escamoso.** Sponsored by: Fundación Mútua Madrileña AP94722011. Duration: 3/8/2011-2/8/2014.

Amador V. **Papel de los factores de transcripción High-Mobility Group (HMG) en los Linformas Malignos Agresivos.** Sponsored by: Ministerio de Economía y Competitividad BFU2009_09235. Duration: 1/1/2010-31/5/2013.

Bea S. **Comprehensive whole genome and exome sequence analysis in mantle cell lymphoma primary tumors.** Sponsored by: Association for International Cancer Research AICR_MAY2011_001. Duration: 1/1/2012-31/12/2014.

Bea S. **Identificación de mutaciones, variantes estructurales y perfiles genómicos en neoplasias linfoides mediante ultrasecuenciación y microarrays.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01177. Duration: 1/1/2012-31/12/2014.

Fernández P.L. **Optimización de la detección molecular precoz del cáncer de próstata en material residual de biopsias prostáticas y en masajes prostáticos.** Asociacion Española Contra el Cáncer AECC_CAT:11_004. Duration: 28/03/2012-28/03/2014.

Campo E. **Oncomorfologia funcional humana i experimental.** Sponsored by: AGAUR 2009_SGR_992. Duration: 15/9/2009-31/12/2013.

Campo E. **Caracterización genética y molecular de alta resolución de neoplasias linfoides. Implicaciones patogenéticas y clínica.** Sponsored by: Ministerio de Economía y Competitividad SAF2008-03630. Duration: 1/1/2009-31/12/2013.

Campo E. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0039. Duration: 1/1/2007-31/12/2013.

Campo E. **Estudio del genoma de la leucemia linfocítica crónica.** Sponsored by: Instituto de Salud Carlos III, 09/138. Duration: 27/03/2009-31/12/2014.

Campo E. **A BLUEPRINT of Haematopoietic Epigenomes.** Sponsored by: European Commission 282510. Duration: 1/10/2011-31/3/2016.

Campo E. **Identification of somatic mutations in mantle cell lymphoma using next generation sequencing.** Sponsored by: Lymphoma Research Foundation 2011 LRF MCL. Duration: 30/9/2011-29/9/2013.

Campo E. **Molecular diagnosis and prognosis of aggressive lymphoma – Strategic Partnering to Evaluate Cancer Signatures – SPECSII. University of Arizona.** Sponsored by: National Cancer Institute 1U01CA157581-01. Duration: 01/08/2011-31/07/2013.

Campo E. **Procurement of 40 paired pre- and post-chemotherapy samples of DNA derived from peripheral blood for TCGA analysis.** Sponsored by: National Institutes of Health HHSN261201000076I. Duration: 8/9/2010-7/9/2012.

Martinez A. **Diferenciación Plasmocelular y transformación secretoria en linfomas no Hodgkin de células B: Implicaciones clínicas y terapéuticas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00907. Duration: 1/1/2012-31/12/2014.

Postigo A. **Regulación de la diferenciación hematopoyetica y de su transformación maligna por la familia ZEB de factores de transcripción.** Sponsored by: Ministerio de Economía y Competitividad. Codi: BFU-2010-15163. Duration: 01/01/2011 - 31/12/2014.

Postigo A. **Validación del bucle ZEB1-ZEB2/microRNA como factor pronóstico y diana terapéutica en la capacidad invasiva/metastásica y la respuesta al tratamiento de carcinomas colorectales.** Sponsored by: Asociación Española contra el Cáncer, AECC_CAT_10_009. Duration: 01/04/2011 - 31/03/2013.

Postigo A. **Regulación transcripcional de la cadherina E y de la capacidad invasiva y metastática de tumores de colon.** Sponsored by: Fundació Privada Olga Torres (FOT). Codi: FOT_09_002. Duration: 01/01/2010 - 31/06/2013.

Postigo A. **Identificación de perfiles de expresión génica regulados por la vía microRNA/ZEB1-ZEB2 y su papel en la capacidad invasiva y metastásica tumoral y la respuesta al tratamiento. "Avon Cosmetics SAU".** Codi: FASAU-2012-1. Duration: 01/09/2012-31/08/2015.

Ribalta T. **Análisis del "metiloma" en meningiomas: identificación de genes responsables de progresión y recidiva. PI-2010/045. Entidad financiadora: Fundación para la Investigación Sanitaria en Castilla-La Mancha (FISCAM).** Entidades participantes: Hospital Virgen de la Salud, Toledo y Fundació Clínic-Hospital Clínic, Facultad de Medicina. Duration: 2011-2013.

DOCTORAL THESES

Campo E.; Estrach T. **Características clínico-patológicas y moleculares de los linfomas cutáneos de células T periféricos poco frecuentes.** PhD student: Adriana Garcia Herrera.

Campo E.; Silvia B. **Estudi de l'estat mutacional dels gens de les immunoglobulines i heterogeneïtat clínico biològica del linfoma de les cèl·lules del mantell.** PhD student: Alba Navarro López.

Campo E.; Martinez A. **Estudio de la activación de las vías de estrés dependiente de retículo endoplasmático en linfomas difusos de células grandes B: papel en la respuesta a la quimioterapia convencional y a la inhibición del proteosoma.** PhD student: Anna Mozos Rocafort.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Diagnosis and therapy in oncology

GROUP MEMBERS

TEAM LEADER
Francesca Pons (Hospital Clínic)
Tel.: 93 227 54 82
E-mail: fpons@clinic.cat

RESEARCHERS:
Albert Biete (Hospital Clínic)
Carles Conill (Hospital Clínic)
David Fuster (Hospital Clínic)
Xavier Setoain (Hospital Clínic)
Martín Velasco (Hospital Clínic)
Sergi Vidal-Sicart (Hospital Clínic)
Marià Monzó (UB)
Laura Oleaga (Hospital Clínic)
Maria Africa Muxí (Hospital Clínic)

COLLABORATORS:
Sebastián Capurro (Hospital Clínic)
Francesc Casas (Hospital Clínic)
Lluís Donoso Bach (Hospital Clínic)
Blanca Farrús (Hospital Clínic)
Mario Pagés (Hospital Clínic)
Teresa Pujol (Hospital Clínic)
Sonia Rodríguez (Hospital Clínic)
Angels Rovirosa (Hospital Clínic)
Marcelo Sánchez (Hospital Clínic)
Gorane Santamaría (Hospital Clínic)
Eugènia Verger (Hospital Clínic)
Pilar Paredes (Hospital Clínic)
Francisco Lomeña (Hospital Clínic)
Javier Pavía (Hospital Clínic)
Francisco Campos (Hospital Clínic)

TEAM INVOLVED IN:

Red RECAVA & Ricc

STRATEGIC OBJECTIVES

- Development of techniques for improving the diagnosis, prognostic evaluation and treatment response assessment in oncological patients.
- Development and application of new therapies in oncology.

MAIN LINES OF RESEARCH

1. **Molecular studies in embryonic and tumor cells: applications to pharmacogenomics.** Two types of studies are carried out: one type analyzes and compares microRNA patterns in embryonic and tumor tissues, and the other uses allelic discrimination to analyze polymorphic profiles (SNPs) in oncological patients, with a view to selecting more specific treatments.
2. **Effects of synchrotron radiation upon the neoplastic cell.** In this study, which is carried out jointly with Barcelona Autonomous University (UAB), comparison is made of the biological action of synchrotron radiation (currently the Grenoble system until the UAB Alba unit comes into operation) with conventional X-rays used in radiotherapy. The cell-sensitizing effectiveness of gold nanoparticles and cisplatin is also studied.
3. **Breast cancer imaging diagnosis.** Two types of studies are carried out. One type of study uses 10G needle biopsies to improve the presurgical diagnosis of breast tumors, particularly in application to those with microcalcifications. The aim is to minimize the number of surgical biopsies required for establishing the diagnosis. The other type of study assesses the response to neoadjuvant chemotherapy in breast cancer based on breast MRI evaluation.

11. **Application of functional MRI techniques in oncology.** Studies of perfusion, diffusion and spectroscopy applied to the staging and monitoring of brain and head and neck tumours treatment.

5. **Gammagraphic (scintigraphic) detection of the sentinel node.** Lymphogammagraphy and posterior use of an external detection probe during surgery serves to identify and remove the sentinel node. This technique makes it possible to avoid 75% of all unnecessary lymphadenectomies. The use of a portable gammacamera during surgery offers additional advantages.
6. **Application of positron emission tomography (PET-CT) in oncology.** PET studies are made for the staging and control of treatment response in different types of tumors, including lymphomas, breast cancer and digestive tract lesions. We plan to use an intraoperative PET probe to improve the detection of tumor lesions.

PUBLICATIONS

ORIGINALS
I.F.: 79.96

1 Peris P.; Martinez-Ferrer A.; Monegal A.; Martinez de Osaba M.J.; Muxi A.; Guanabens N. **25 hydroxyvitamin D serum levels influence adequate response to bisphosphonate treatment in post-menopausal osteoporosis.** BONE. 51 (1): 54-58. **I.F.: 4.02.**

2 Guanabens N.; Monegal A.; Muxi A.; Martinez-Ferrer A.; Reyes R.; Caballeria J.; Del Rio L.; Peris P.; Pons F.; Pares A. **Patients with cirrhosis and ascites have false values of bone density Implications for the diagnosis of osteoporosis.** OSTEOPOROSIS INTERNATIONAL. 23 (4): 1481-1487. **I.F.: 4.58.**

3 Vidal M.; Vidal-Sicart S.; Torrents A.; Perissinotti A.; Navales I.; Paredes P.; Pons F. **Accuracy and Reproducibility of Lymphoscintigraphy for Sentinel Node Detection in Patients with Cutaneous Melanoma.** JOURNAL OF NUCLEAR MEDICINE. 53: 1193-1199. **I.F.: 6.38.**

4 Fuster D.; Depetris M.; Paschoalin R.; Torregrosa J.V.; Setoain X.; Squarcia M.; Perissinotti A.; Mayoral M.; Pons. **Pinhole Collimator Double-Phase Scintigraphy with 99mTc-SESTAMIBI in Patients wirh Secondary Hyperparathyroidism Treated with Cinacalcet.** EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 39: S481-S481. **I.F.: 4.99.**

5 Bargallo X.; Santamaria G.; Velasco M.; Del Amo M.; Arguis P.; Burrel M.; Capurro S. **Mammographic features of screening detected pT1 (a-b) invasive breast cancer using BI-RADS lexicon.** EUROPEAN JOURNAL OF RADIOLOGY. 81: 2620-2626. **I.F.: 2.61.**

6 Skaltsa K.; Jover L.; Fuster D.; Carrasco J.L. **Optimum threshold estimation based on cost function in a multistate diagnostic setting.** STATISTICS IN MEDICINE. 31 (11-12): 1098-1109 Sp. Iss. **I.F.: 1.88.**

7 Setoain X.; Pavia J.; Seres E.; Garcia R.; Carreno M.M.; Donaire A.; Rubi S.; Bargallo N.; Rumia J.; Boget T.; Pintor L.; Fuster D.; Pons F. **Validation of an Automatic Dose Injection System for Ictal SPECT in Epilepsy.** JOURNAL OF NUCLEAR MEDICINE. 53 (2): 324-329. **I.F.: 6.38.**

8 Setoain X.; Gainza E.; Rodriguez S.; Trampal C.; Navales I.; Fuster D.; Gine E.; Salazar A.; Lopez-Guillermo A.; Pons F. **Role of PET/CT in patients with follicular lymphoma.** EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 39: S585-S585. **I.F.: 4.99.**

9 San Roman L.; Obach V.; Blasco J.; Macho J.; Lopez A.; Urra X.; Tomasello A.; Cervera A.; Amaro S.; Perandreu J.; Branera J.; Capurro S.; Oleaga L.; Chamorro A. **Single-Center Experience of Cerebral Artery Thrombectomy Using the TREVO Device in 60 Patients With Acute Ischemic Stroke.** STROKE. 43 (6): 1657. **I.F.: 5.73.**

10 Fuster D.; Sola O.; Soriano A.; Monegal A.; Setoain X.; Tomas X.; Garcia S.; Mensa J.; Rubello D.; Pons F. **A Prospective Study Comparing Whole-Body FDG PET/CT to Combined Planar Bone Scan With Ga-67 SPECT/CT in the Diagnosis of Spondylodiskitis.** CLINICAL NUCLEAR MEDICINE. 37: 827-832. **I.F.: 3.67.**

11 Aparicio J.; Donaire A.; Setoain X.; Rubi S.; Bargallo N.; Calvo A.; Falcon C.; Carreno M. **Application of diffusion tensor imaging in drug-resistant extra-temporal epilepsy with focal cortical dysplasia in MRI: Correlation with FDG-PET hypometabolic area.** EPILEPSIA. 53: 203-203. **I.F.: 3.96.**

12 Pera M.; Gallego R.; Montagut C.; Martin-Richard M.; Iglesias M.; Conill C.; Reig A.; Balague C.; Petriz L.; Momblan D.; Bellmunt J.; Maurel J. **Phase II trial of preoperative chemo-radiotherapy with oxaliplatin, cis-platin, and 5-FU in locally advanced esophageal and gastric cancer.** ANNALS OF ONCOLOGY. 23 (3): 664. **I.F.: 6.42.**

13 Duch J.; Fuster D.; Munoz M.; Fernandez P.L.; Paredes P.; Fontanillas M.; Skaltsa K.; Domenech B.; Lomena F.; Pons F. **PET/CT with [18F] fluoro-deoxyglucose in the assessment of metabolic response to neoadjuvant chemotherapy in locally advanced breast cancer.** QUARTERLY JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 56(3):291-8. **I.F.: 2.26.**

14 Rumia J.; Marmol F.; Sanchez J.; Carrerno M.; Bargallo N.; Boget T.; Pintor L.; Setoain X.; Bailles E.; Donaire A.; Ferrer E.; Puig-Parellada P. **Eicosanoid levels in the neocortex of drug-resistant epileptic patients submitted to epilepsy surgery.** EPILEPSY RESEARCH. 99 (1-2): 127-131. **I.F.: 2.29.**

15 Fernandez de Larrea C.; Navarro A.; Tejero R.; Tovar N.; Diaz T.; Cibeira M.T.; Rosinol L.; Ferrer G.; Rovira M.; Rozman M.; Monzo M.; Blade J. **Impact of MiRSNPs on Survival and Progression in Patients with Multiple Myeloma Undergoing Autologous Stem Cell Transplantation.** CLINICAL CANCER RESEARCH. 18: 3697-3704. **I.F.: 7.74.**

16 Arenas M.; Sabater S.; Hernández V.; Rovirosa A.; Lara P.C.; Biete A.; Panés J. **Anti-inflammatory effects of low-dose radiotherapy. Indications, dose, and radiobiological mechanisms involved.** STRAHLENTHER ONKOL. 188(11):975-81. **I.F.: 3.56.**

17 Carreño M.; Aparicio J.; Sierra A.; Aceituno A.; Pintor L.; Bargallò N.; Setoain J.; Rumià J.; Boget T.; Donaire A.; Bailles E.; Fernández S. **Are patients referred for presurgical evaluation drug resistant according to the new consensus definition? A study in a tertiary center.** EPILEPSY RES. 98(2-3):277-80. **I.F.: 2.29.**

18 Fuster D.; Lafuente S.; Setoain X.; Navales I.; Perissinotti A.; Pavia J.; Paredes P.; Lomeña F.; Pons F. **Dual-time point images of the liver with (18)F-FDG PET/CT in suspected recurrence from colorectal cancer.** REV ESP MED NUCL. 31(3):111-6. **I.F.: 0.89.**

19 Molina V.; Visa L.; Conill C.; Navarro S.; Escudero J.M.; Auge J.M.; Filella X.; Lopez-Boado M.A.; Ferrer J.; Fernandez-Cruz L.; Molina R. **CA 19-9 in pancreatic cancer: retrospective evaluation of patients with suspicion of pancreatic cancer.** TUMOR BIOL. 33(3):799-807. **I.F.: 2.14.**

20 Curran A.; Martinez E.; Podzamczer D.; Lonca M.; Barragan P.; Crespo M.; Falco V.; Vidal-Sicart S.; Imaz A.; Martinez M.; Gatell J.M.; Ribera E. **Changes in body composition and mitochondrial DNA in HIV-1-infected patients switching to fixed-dose abacavir/lamivudine or tenofovir/emtricitabine: a substudy of the BICOMBO trial.** ANTIVIR THER. 17: 711-8. **I.F.: 3.16.**

EDITORIALS
I.F.: 4.99

1 Zaknun J.J.; Giammarile F.; Olmos R.A.V.; Vidal-Sicart S.; Mariani G. **Changing paradigms in radioguided surgery and intraoperative imaging: the GOSTT concept.** EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 39 (1): 1-3. **I.F.: 4.99.**

GRANTS FOR RESEARCH IN PROGRESS

Pons F.E. **Imatge Molecular en Medicina Nuclear.** Sponsored by: AGAUR 2009_SGR_1049. Duration: 15/9/2009-31/12/2013.

Oleaga L. **Gestión del remodelado cardiovascular mediante integración de tecnologías de monitorización ubicua y conceptos del humano fisiológico virtual.** Sponsored by: CDTI 09/397. Duration: 15/9/2009-31/12/2012.

Pons F.E. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0038. Duration: 1/1/2007-31/12/2013.

Vidal S. **Utilidad clínica del SPECT-CT y una gammacamara portátil para la detección del ganglio centinela en el cáncer de cérvix y endometrio.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1108. Duration: 1/1/2010-31/12/2012.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	67.05	22	6	7
2011	81.69	26	9	7
2012	79.96	20	12	6

DOCTORAL THESES

Pons F. **Optimización del marcaje de 99MTC-ciprofloxacino como antibiótico para el diagnóstico de infecciones. Estudio de la acumulación in vitro y su aplicación clínica.** PhD student: Daniel Rodriguez Puig.

Pons F. **Utilitat de la pet-tc amb 18F-FDG en pacients amb neoplàsia de mama candidates a quimioteràpia neoadjuvant.** PhD student: Joan Duch Renom.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Molecular genetics

GROUP MEMBERS

TEAM LEADER
Cristóbal Mezquita
(Universitat de Barcelona)
Tel.: 93 402 45 18
E-mail: cmezquita@ub.edu

RESEARCHERS:
Jovita Mezquita (UB)
Rafael Oliva (Hospital Clínic i UB)
Josep Oriola (Hospital Clínic i UB)

POST-DOCTORAL RESEARCHERS:
Alexandra Amaral (UB)
Montse Codina (IDIBAPS)

PRE-DOCTORAL RESEARCHERS:
Meritxell Jodar (Fundació Clínic)
Rubén Azpiazu (IDIBAPS)
Judit Castillo (Fundació Clínic)
Carla Paiva (Fundació Clínic)
Claudio Attardo Parrinello (IDIBAPS)

TECHNICIANS:
Montserrat Pau (UB)

COLLABORATORS:
Betlem Mezquita (UB)
Josep Lluís Ballescà (Hospital Clínic)

STRATEGIC OBJECTIVES

The research group comprises the laboratories of Gene Expression and Cancer (www.fisiologia.net) and Human Genetics (www.ub.edu/humangen). Our research work is set within the paradigm of current physiology: the study of genic expression mechanisms as a new approach to the study of the functions of the body. On one hand, our work is presently directed towards the proteomic and molecular characterization of spermatozoa in infertile patients and controls, while on the other, studies are made of the mechanisms involved in angiogenesis and in tumor cell invasion.

MAIN LINES OF RESEARCH

The group has traditionally worked on gene expression mechanisms and the differentiation of the spermatogenic germinal line, and more recently on the mechanisms involved in angiogenesis and in tumour cell invasion. One relevant aspect is the identification of numerous new proteins of the sperm nucleus and the approach regarding potential transmission to the oocyte and potential epigenetic function (Oliva et al., 2012). In another line of research, we completed a study on differential present of sperm cell RNA in infertile patients, identifying up and down regulated mRNAs in astenozoospermic samples (Jodar et al. 2012). One of the important challenges is to elucidate the basic mechanisms that opera-te in nucleus-histone nucleus-protamine transition during spermatogenesis and how alterations may lead to alterations in the sperm's epigenetic information. We are also currently undertaking the study of the sperm metabolic pathways as a complementary approach towards understanding the sperm cell functions and failure in male sterility. Another challenge will be the translation of important basic

observations to the clinical setting. VEGFR1 expression in different tumour cells is essential for the invasion and formation of metastases. VEGFR1 expression in tissue stromal cells is also important in the formation of metastases. Not all invasive tumour cells express VEGFR1, due to the hypermethylation of the gene promoter. In highly invasive breast carcinoma cells, with the hypermethylated VEGFR1 gene promoter, we have discovered the existence of truncated intracellular forms of VEGFR1 transcribed from intronic promoters. One of these forms is preferentially expressed in invasive breast carcinoma cells and promotes tumour invasion by activating the Src tyrosine kinase. We recently observed that this truncated form, which promotes invasion independently of VEGF and other ligands, is positively regulated by the Notch signalling pathway and negatively regulated by.

PUBLICATIONS

ORIGINALS
I.F.: 4.47

1 Jodar M.; Kalko S.; Castillo J.; Ballesca J.L.; Oliva R. **Differential RNAs in the sperm cells of asthenozoospermic patients.** HUMAN REPRODUCTION. 27 (5): 1431-1438. **I.F.: 4.47.**

EDITORIALS
I.F.: 3.04

1 Oliva R. **Special Issue: SBiRM: Focus on Proteomics and Reproduction PREFACE.** SYSTEM BIOLOGY IN REPRODUCTIVE MEDICINE. 58 (4): 177-178. **I.F.: 1.52.**

2 Oliva R.; Ballesca J.L. **Altered histone retention and epigenetic modifications in the sperm of infertile men.** ASIAN JOURNAL OF ANDROLOGY. 14 (2): 239-240. **I.F.: 1.52.**

GRANTS FOR RESEARCH IN PROGRESS

Oliva R. **Grup de Genètica Humana.** Sponsored by: AGAUR 2009_SGR_1440. Duration: 29/7/2009-31/12/2013.

Oliva R. **Reproductive Biology Early Research Training.** Sponsored by: European Commission 289880. Duration: 1/1/2012-31/12/2015.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	2.94	1	0	1
2011	32.90	11	5	1
2012	4.47	1	1	0

Oliva R. **Caracterización proteómica y genómica del núcleo del espermatozoide humano normal y de sus alteraciones en pacientes infértiles.** Sponsored by: Ministerio de Economía y Competitividad BFU2009_07118. Duration: 1/1/2010-31/3/2013.

DOCTORAL THESES

Oliva R.; Oriola J. **Anàlisi del contingut de RNA i estudi mutacional de gens candidats en infertilitat masculina**. PhD Student: Meritxell Jodar Bifet.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Genetics

GROUP MEMBERS

TEAM LEADER
Montserrat Milà
(Hospital Clínic)
Tel.: 93 227 54 00 (Ext.2784)
E-mail: mmila@clinic.cat

RESEARCHERS:
Anna Carrió (Hospital Clínic)
Carmen Herrero (Hospital Clínic)
Ester Margarit (Hospital Clínic)
Aurora Sánchez (Hospital Clínic)
Anna Soler (Hospital Clínic)
Jordi To-Figueras (Hospital Clínic)

COLLABORATORS:
Cèlia Badenas (Hospital Clínic)
Irene Madrigal (Hospital Clínic)
Laia Rodriguez Revenga (Hospital Clínic)
Maria Isabel Alvarez (CIBERER)

TEAM INVOLVED IN: ciberer

STRATEGIC OBJECTIVES

To clinically, cytogenetic and molecular characterize rare genetic diseases. There are four main research lines Each line has the strategic objectives defined by the supporting research projects. In this context, the study of intellectual disability (ID) and the identification of the causal genetic factors are based on the application of high performance array CGH and Next Generation Sequencing (NGS) technologies. On the other hand, the study of fragile X–associated tremor/ataxia syndrome (FXTAS) aims to identify a biological marker that might allow FXTAS presymptomatic diagnosis. Regarding the porphyrias, the strategic objective is to advance in our knowledge of the correlation genotype – phenotype: biochemical and clinical expression.

MAIN LINES OF RESEARCH

1. Identification of **genetic bases of intellectual disability (ID)**, both syndromic and non-syndromic, using new technologies such as NGS. The application of high throughput sequencing to different groups of clinically well characterized ID patients will allow us to identify new genes and to establish new molecular causes of ID.

2. **Fragile X syndrome:** Study of the FMR1 premutation associated pathologies: FXPOI (fragile X-associated primary ovarian insufficiency), FXTAS (fragile X-associated tremor/ ataxia syndrome), and fibromyalgia associated to the FMR1 premutation. Study of the microRNA and mRNA expression profiles as possible susceptibility risk factors for FXTAS.

3. Detection of **cryptic chromosomal imbalances** and identification of **new phenotypes** based on cytogenetic - molecular techniquesI in a prenatal and postnatal diagnostic setting. The aim is to characterize chromosomal imbalances in fetuses with congenital anomalies and with normal karyotype using arraysCGH.

4. Study of the genotype-phenotype correlation and expression mechanisms of **porphyria**. The research lines aim to establish the following:
   - Advance in the study of the alterations in iron regulation and metabolism in skin and erythropoietic porphyria.
   - Investigate the role of modifier genes that modulate the clinical expression of erythropoietic porphyria.
   - Study of new serum and urine biomarkers of acute porphyria severity of use in clinical practice.

The group will remain a member of the *"European Porphyria Initiative"* network as a reference center for the diagnosis, investigation and treatment of porphyria.

PUBLICATIONS

ORIGINALS
I.F.: 48.78

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	78.70	22	10	4
2011	128.51	14	7	4
2012	48.78	16	6	3

1 Lopez C.; Baumann T.; Costa D.; Lopez-Guerra M.; Navarro A.; Gomez C.; Arias A.; Munoz C.; Rozman M.; Villamor N.; Colomer D.; Monserrat E.; Campo E.; Carrio A. **A new genetic abnormality leading to TP53 gene deletion in chronic lymphocytic leukaemia.** BRITISH JOURNAL OF HAEMATOLOGY. 156 (5): 612-618. **I.F.: 4.94.**

2 Tollanes M.C.; Aarsand A.K.; Villanger J.H.; Stole E.; Deybach J.C.; Marsden J.; To-Figueras J.; Sandberg S. **Establishing a network of specialist Porphyria centres - effects on diagnostic activities and services.** ORPHANET JOURNAL OF RARE DISEASES. 7: 93-93. **I.F.: 5.07.**

3 Delgado J.; Espinet B.; Oliveira A.C.; Abrisqueta P.; De la Serna J.; Collado R.; Loscertales J.; Lopez M.; Hernandez-Rivas J.A.; Ferra C.; Ramirez A.; Roncero J.M.; Lopez C.; Aventin A.; Puiggros A.; Abella E.; Carbonell F.; Costa D.; Carrio A.; Gonzalez M. **Chronic lymphocytic leukaemia with 17p deletion: a retrospective analysis of prognostic factors and therapy results.** BRITISH JOURNAL OF HAEMATOLOGY. 157 (1): 67-74. **I.F.: 4.94.**

4 Madrigal I.; Martinez M.; Roderiguez-Revenga L.; Carrio A.; Mila M. **12p13 rearrangements: 6?Mb deletion responsible for ID/MCA and reciprocal duplication without clinical responsibility.** AMERICAN JOURNAL OF MEDICAL GENETICS PART A. 158A (5): 1071-1076. **I.F.: 2.39.**

5 Margarit E.; Morales C.; Rodriguez-Revenga L.; Monne R.; Badenas C.; Soler A.; Clusellas N.; Mademont I; Sanchez A. **Familial 4.8?MB deletion on 18q23 associated with growth hormone insufficiency and phenotypic variability.** AMERICAN JOURNAL OF MEDICAL GENETICS PART A. 158A (3): 611-616. **I.F.: 2.39.**

6 Madrigal I.; Rodriguez-Revenga L.; Xuncla M.; Mila M. **15q11.2 microdeletion and FMR1 premutation in a family with intellectual disabilities and autism.** GENE. 508(1):92-5. **I.F.: 2.34.**

7 Alvarez-Mora M.I.; Madrigal I.; Rodriguez-Revenga L.; Mur A.; Calvo D.; Pascual i Bardaji J.; Mila M. **A170P mutation in SHOX gene in a patient not presenting with Madelung deformity.** JOURNAL OF CLINICAL PATHOLOGY. 65(9):844-6. **I.F.: 2.31.**

8 Garcia-Martin P.; De Argila D.; To-Figueras J.; Llamas-Velasco M.; Fraga J.; Garcia-Diez A. **Phototolerance induced by narrow-band UVB phototherapy in severe erythropoietic protoporphyria.** PHOTODERMATOLOGY PHOTOIMMUNOLOGY & PHOTOMEDICINE. 28: 261-263. **I.F.: 1.30.**

9 Mademont-Soler I.; Morales C.; Soler A.; Clusellas N.; Margarit E.; Martinez-Barrios E.; Martinez J.M.; Sanchez A. **MLPA: A prenatal diagnostic tool for the study of congenital heart defects?** GENE. 500 (1): 151-154. **I.F.: 2.34.**

10 Barraza G.; Serranova T.; Herrero C.; Casanova-Molla J.; To-Figueras J.; Herranz J.; Valls-Sole J. **Brainstem dysfunction in variegate porphyria.** MUSCLE & NERVE. 46: 426-433. **I.F.: 2.37.**

11 Burgos R.; Sarto B.; Elio I.; Planas M.; Forga M.; Canton A.; Trallero R.; Munoz M.J.; Perez D.; Bonada A.; Salo E.; Lecha M.; Enrich G.; Salas-Salvado J. **Prevalence of malnutrition and its etiological factors in hospitals.** NUTRICION HOSPITALARIA. 27 (2): 469-476. **I.F.: 1.12.**

12 Grande M.; Borrell A.; Garcia-Posada R.; Borobio V.; Munoz M.; Creus M.; Soler A.; Sanchez A.; Balasch J. **The effect of maternal age on chromosomal anomaly rate and spectrum in recurrent miscarriage.** HUMAN REPRODUCTION. 27: 3109-3117. **I.F.: 4.47.**

13 Mula R.; Gonce A.; Bennasar M.; Arigita M.; Meler E.; Nadal A.; Sanchez A.; Botet F.; Borrell A. **Increased nuchal translucency and normal karyotype: perinatal and pediatric outcomes at 2 years of age.** ULTRASOUND IN OBSTETRICS & GYNECOLOGY. 39 (1): 34-41. **I.F.: 3.01.**

14 López C.; Delgado J.; Costa D.; Conde L.; Ghita G.; Villamor N.; Navarro A.; Cazorla M.; Gómez C.; Arias A.; Muñoz C.; Baumann T.; Rozman M.; Aymerich M.; Colomer D.; Cobo F.; Campo E.; López-Guillermo A.; Montserrat E.; Carrió A. **Different distribution of NOTCH1 mutations in chronic lymphocytic leukemia with isolated trisomy 12 or associated with other chromosomal alterations.** GENE CHROMOSOME CANC. 51: 881-889. **I.F.: 3.31.**

15 Pérez Poyato M.S.; Milá Recansens M.; Ferrer Abizanda I.; Domingo Jiménez R.; López Lafuente A.; Cusí Sánchez V., Rodriguez-Revenga L.; Coll Rosell M.J.; Gort L.; Póo Argüelles P.; Pineda Marfa M. **Infantile neuronal ceroid lipofuscinosis: follow-up on a Spanish series.** GENE. 499(2):297-302. **I.F.: 2.341.**

16 De Gottardi A.; Seijo S., Milá M.; Alvarez M.I.; Bruguera M.; Abraldes J.G.; Bosch J.; García-Pagán J.C. **Bone morphogenetic protein receptor 2 in patients with idiopathic portal hypertension.** J CELL MOL MED. 16(9):2017-21. **I.F.: 4.125.**

EDITORIALS
I.F.: 1.38

1 Arroyo M.A.R.; Trujillo-Tiebas M.J.; Milá M. **Recommendations of good practices for molecular diagnosis of Huntington disease.** MEDICINA CLINICA. 138 (13): 584-588. **I.F.: 1.38.**

GRANTS FOR RESEARCH IN PROGRESS

Milá M. **Grup d'estudi de Malalties Rares d'Origen Genètic.** Sponsored by: AGAUR 2009_SGR_1337. Duration: 15/9/2009-31/12/2013.

Milá M. **Estudio de los perfiles de expresión de microRNAS y del gen ASFMR1 como factores de susceptibilidad para el desarrollo del síndrome FXTAS.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0413. Duration: 1/1/2010-31/12/2012.

To J. **Análisis de perfiles proteicos en pacientes con porfiria aguda.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00767. Duration: 1/1/2012-31/12/2014.

Sanchez M.A. **Alcance diagnóstico y fiabilidad de las técnicas de array-CGH en muestras de vellosidad corial. Detección de anomalías cromosómicas crípticas de posibles discrepancias feto-placentarias.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01841. Duration: 1/1/2012-31/12/2014.

DOCTORAL THESES

Pineda M.; Milà M. **Spectro clinico-mutacional y estudios de correlacion genotipo-fenotipo en la poblacion española afectada de lipofuscinosis neural ceroidea.** PhD student: Maria Del Socorro Perez Poyato.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Melanoma: imaging, genetics and immunology

GROUP MEMBERS

TEAM LEADER
Susana Puig (Hospital Clínic)
Tel.: 93 2275400 (Ext 2891)
E-mail: spuig@clinic.cat

RESEARCHERS:
Ramón Vilella (Hospital Clínic)
Josep Malvehy (Hospital Clínic)
Jordi Milà (Hospital Clínic)
Luchi Millan (Hospital Clínic)
Laura Martín (Fundació Clínic)

PRE-DOCTORAL RESEARCHERS:
Ivette Alarcon Salazar (Fundació Clínic)
Maria Alba Díaz Lorca (Hospital Clínic)
Zighe Ogbah (Fundació Clínic)
Joan Anton Puig (CIBERER)
Miriam Potrony Mateu (CIBERER)
Gabriel Salerni (Fundació Clínic)
Danielle Shitara (co-directed PhD with University of Sao Paulo)
Gemma Tell Martí (Fundació Clínic)

TECHNICIANS:
Abel Caño Caño (Fundació Clínic)
Dani Gabriel (Fundació Clínic)
Pablo Iglesias (Fundació Clínic)

COLLABORATORS:
Paula Aguilera (Hospital Clínic)
Llúcia Alos (Hospital Clínic)
Pedro Arguís (Hospital Clínic)
Celia Badenas (Hospital Clínic)
Cristina Carrera (Hospital Clínic)
Antonio Campo (Hospital Clínic)
Carlos Conill (Hospital Clínic)
Adriana García Herrera (Hospital Clínic)
Ramon Rull (Hospital Clínic)
Sergi Vidal (Hospital Clínic)
Ramón Vilana (Hospital Clínic)
Antoni Vilalta (Hospital Clínic)
José Palou (Hospital Clínic)
Rodrigo Roldan (Fundació Clínic)

ONCOLOGY AND HAEMATOLOGY

Melanoma: imaging, genetics and immunology

STRATEGIC OBJECTIVES

1. Development of non-invasive imaging techniques for the diagnosis of melanoma.
2. Study of the genetic bases implicated in susceptibility to melanoma and photocarcinogenesis.
3. Development of treatment study strategies in melanoma and skin cancer: target-specific molecular, immunological and photoprotection therapies.
4. Application of artificial intelligence systems for evaluating complex data in melanoma, combining imaging, epidemiological, clinical and molecular information.
5. Development of models of humanized mouse skin for the study of photoprotection and photocarcinogenesis.

MAIN LINES OF RESEARCH

Our main lines of research, and some of the most relevant results obtained to date, are the following:

1. **Dermatoscopy and digital dermatoscopy.** In dermatoscopy studies are being made of the diagnostic criteria of different disorders that have still not been well characterized, the correlations with other imaging techniques, the impact upon the management of patients at risk, and the relationship between dermatoscopy and the genetic profile of the patients. In digital dermatoscopy we are examining the use of full body maps and digital dermatoscopy in the follow-up of patients at risk.
   - **1.1** Definition of new dermatoscopic criteria in different dermatological processes and new dermoscopy criteria visible with polarized dermoscopy.
   - **1.2** Development of dermatoscopy for introduction in primary care, in pathology and dermatology (development of combined clinical dermatoscopic algorithms for the identification of melanomas that are difficult to diagnose). Implementation of dermoscopy in teledermatology.
   - **1.3** Analysis of dermatoscopic as a preoperative prognostic stimation for Positive Sentinel Lymph nodes and Overall Survival.
   - **1.4** Correlation of dermoscopy patterns with histopathology of melanoma metastases.
   - **1.5** Correlation of dermoscopy with molecular signatures in tumors (BRAF / NRAS mutations).

2. **Confocal microscopy *in vivo*.** Description of new algorithms, study of the evolution of lesions, new classifications and the use of telemedicine.
   - **2.1** Definition of criteria in in benign tumours in the differential diagnosis with melanoma.
   - **2.2** Creation of a differential diagnostic algorithm for melanocytic and non-melanocytic lesions.
   - **2.3** Characterization of pigmented basal cell carcinomas, squamous carcinomas and actinic keratosis.
   - **2.4** Study of the use of confocal microscopy for the correct treatment of achromatic or poorly delimited lesions (delimitation of surgical margins or control of relapses).
   - **2.5** Use of ex vivo confocal microscopy for application to Mohs surgery.
   - **2.6** Use of ex vivo fluorescence confocal microscopy for the intraoperative diagnosis of several cancers.

3. **Genetic epidemiology.** Study of melanoma susceptibility genes in familial melanoma and in sporadic melanoma. Study of nevogenicity and risk genes in melanoma. Study of pigmentation and risk genes in melanoma. Identification of new genes and new mechanisms of melanoma susceptibility using Genome Wide Scan and NGS.
   - **3.1** Penetrance and phenotypic expression studies in patients and families carrying known CDKN2A and p14arf mutations.
   - **3.2** Study of the effect of polymorphisms of the MC1R gene as modifier gene and low penetrance gene in relation to melanoma risk, and in reference to the clinical and dermatoscopic aspects of melanomas. Implications of MC1R gene polymorphisms in other pathologies.
   - **3.4** Identification of new melanoma and nevogenicity susceptibility genes based on the study of homozygous genome regions.
   - **3.5** Identification of the role of mutations in Bap1 gene in melanoma susceptibility in familial melanoma associated to uveal melanoma and/or spitzoid tumours.
   - **3.6** Identification of susceptibility genes involved in melanoma prognosis.
   - **3.7** Analyses of MITF polymorphisms in high risk melanoma patients and their phenotypical characteristics.
   - **3.8** Identify of new melanoma genes using NGS in childhood affected by melanoma belonging to melanoma prone families and unknown susceptibility gene mutations.
   - **3.9** Identification of somatic mosaicisms in Phacomatosis Pigmento Vascularis.

4. **Study of the mechanisms involved in carcinogenesis and photocarcinogenesis.**
   - **4.1** Analysis of oral photoprotection. Study of genetic (CDKN2A, MC1R)/environmental interaction (UVR) in melanoma risk. Study of the influence of ultraviolet radiation (UVR) (UVA; UVB;UVA/UVB) in the dermatoscopic, histological and immunohistochemical characteristics of melanocytic nevi.

4.2 Dermatoscopic and genetic characterization of the different Clark nevi in dysplastic nevus syndrome, in relation to genetic polymorphisms.
4.3 Investigation of somatic mutations of NRAS, BRAF, cKIT, RAC1, STK19, genomic amplifications of different oncogenes (TERT, AURKA, CCND1), and genomic losses of 9p21 in melanoma.
4.4 Expression studies (MAGE and others) in melanoma.
4.5 Development of experimental models of gene/gene, gene/environment interactions between CDKN2A and MC1R. Expression studies in keratinocytes, melanocytes and fibroblasts according to their genetic profile.
4.6 DNA repair mechanisms and their therapeutic implications.

5. Development of new treatment strategies for melanoma and other skin tumors.
5.1 Hyperthermal perfusion of extremities.
5.2 Vaccines and new therapeutic targets in melanoma.
5.3 Electrochemotherapy in melanoma.
5.4 Inhibition of the Hedgehog pathway for the treatment of basal cell carcinomas.
5.5 Specific immunotherapy in Merkel carcinoma.
5.6 Photodinamic therapy for melanoma.

6. Evaluation of immune response in melanoma.
6.1 Genetic expression arrays and studies of SNPs associated with prognosis and treatment response.

PUBLICATIONS

ORIGINALS
I.F.: 96.70

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	62.31	15	9	2
2011	133.79	9	7	2
2012	96.70	24	14	6

1 Ogbah Z.; Puig-Butille J.A.; Simonetta F.; Badenas C.; Cervera R.; Mila J.; Benitez D.; Malvehy J.; Vilella R.; Puid S. **Molecular Characterization of Human Cutaneous Melanoma-derived Cell Lines.** ANTICANCER RESEARCH. 32 (4): 1245-1251. **I.F.: 1.72.**

2 Fernandez A.F.; Assenov Y.; Martin-Subero J.I.; Balint B.; Siebert R.; Taniguchi H.; Yamamoto H.; Hidalgo M.; Tan A.C.; Galm O.; Ferrer I.; Sanchez-Cespedes M.; Villanueva A.; Carmona J.; Sanchez-Mut J.V.; Berdasco M.; Moreno V.; Capella G.; Monk D.; Ballestar E.; Ropero S.; Martinez R.; Sanchez-Carbayo M.; Prosper F.; Agirre X.; Fraga M.F.; Grana O.; Perez-Jurado L.; Mora J.; Puig S.; Prat J.; Badimon L.; Puca A.A.; Meltzer S.J.; Lengauer T.; Bridgewater J.; Bock C.; Esteller M. **A DNA methylation fingerprint of 1628 human samples.** GENOME RESEARCH. 22 (2): 407-419. **I.F.: 13.61.**

3 Garbe C.; Peris K.; Hauschild A.; Saiag P.; Middleton M.; Spatz A.; Grob J.J.; Malvehy J.; Newton-Bishop J.; Stratigos A.; Pehamberger H.; Eggermont A.M. **Diagnosis and treatment of melanoma. European consensus-based interdisciplinary guideline - Update 2012.** EUROPEAN JOURNAL OF CANCER. 48: 2375-2390. **I.F.: 5.54.**

4 Yang X.R.; Brown K.; Landi M.T; Ghiorzo P.; Badenas C.; Xu M.; Hayward N.K.; Calista D.; Landi G.; Bruno W.; Bianchi-Scarra G.; Aguilera P.; Puig S.; Goldstein A.M.; Tucker M.A. **Duplication of CXC chemokine genes on chromosome 4q13 in a melanoma-prone family.** PIGMENT CELL & MELANOMA RESEARCH. 25(2):243-7. **I.F.: 5.06.**

5 Das A.; Pushparaj C.; Bahi N.; Sorolla A.; Herreros J.; Pamplona R.; Vilella R.; Matias-Guiu X.; Marti R.M.; Canti C. **Functional expression of voltage-gated calcium channels in human melanoma.** PIGMENT CELL & MELANOMA RESEARCH. 25(2):200-12. **I.F.: 5.06.**

6 Davies J.R.; Randerson-Moor J.; Kukalizch K.; Harland M.; Kumar R.; Madhusudan S.; Nagore E.; Hansson J.; Hoiom V.; Ghiorzo P.; Gruis N.A.; Kanetsky P.A.; Wendt J.; Pjanova D.; Puig S.; Saiag P.; Schadendorf D.; Soufir N.; Okamoto I.; Affleck P.; Garcia-Casado Z.; Ogbah Z.; Ozola A.; Queirolo P.; Sucker A.; Barrett J.H.; Van Doorn R.; Bishop D.T.; Newton-Bishop J. **Inherited variants in the MC1R gene and survival from cutaneous melanoma: a BioGenoMEL study.** PIGMENT CELL & MELANOMA RESEARCH. 25 (3): 384-394. **I.F.: 5.06.**

7 Salerni G.; Carrera C.; Lovatto L.; Puig-Butille J.A.; Badenas C.; Plana E.; Puig S.; Malvehy J. **Benefits of total body photography and digital dermatoscopy ("two-step method of digital follow-up") in the early diagnosis of melanoma in patients at high risk for melanoma.** JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 67 (1): E17-E27. **I.F.: 3.99.**

8 Kasparian N.A.; Branstrom R.; Chang Y.M.; Affleck P.; Aspinwall L.G.; Tibben A.; Azizi E.; Baron-Epel O.; Battistuzzi L.; Bruno W.; Chan M.; Cuellar F.; Debniak T.; Pjanova D.; Ertmanski S.; Figl A.; Gonzalez M; Hayward N.K.; Hocevar M.; Kanetsky P.A.; Leachman S.; Bergman W.; Heisele O.; Palmer J.; Peric B.;

Puig S.; Schadendorf D.; Grius N.A.; Newton-Bishop J.; Brandberg Y. **Skin Examination Behavior The Role of Melanoma History, Skin Type, Psychosocial Factors, and Region of Residence in Determining Clinical and Self-conducted Skin Examination.** ARCHIVES OF DERMATOLOGY. 148: 1142-1151. **I.F.: 3.89.**

9 Stanganelli I.; Argenziano G.; Sera F.; Blum A.; Ozdemir F.; Karaarslan I.K.; Piccolo D.; Peris K.; Kirchesch H.; Bono R.; Pizzichetta M.A.; Gasparini S.; Braun R.P.; Correia O.; Thomas L.; Zaballos P.; Puig S.; Malvehy J.; Scalvenzi M.; Rabinovitz H.; Bergamo A.; Pellacani G.; Longo C.; Pavlovic M.; Rosendahl C.; Hofmann-Wellenhof R.; Cabo H.; Marghoob A.A.; Langford D.; Astorino S.; Manganoni A.M.; Gourhant J.Y.; Keir J.; Grichnik J.M.; Fumo G.; Dong H.; Sortino Rachou A.M.; Ferrara G.; Zalaudek I. **Dermoscopy of scalp tumours: a multi-centre study conducted by the international dermoscopy society.** JOURNAL OF THE EUROPEAN ACADEMY OF DERMATOLOGY AND VENEREOLOGY. 26 (8): 953-963. **I.F.: 2.98.**

10 Jaimes N.; Halpern J.A.; Puig S.; Malvehy J.; Myskowski P.L.; Braun R.P.; Marghoob A.A. **Dermoscopy: An Aid to the Detection of Amelanotic Cutaneous Melanoma Metastases.** DERMATOLOGIC SURGERY. 38: 1437-1444. **I.F.: 1.80.**

11 Bennassar A.; Vilalta A.; Carrera C.; Puig S.; Malvehy J. **Rapid Diagnosis of Two Facial Papules Using Ex Vivo Fluorescence Confocal Microscopy: Toward a Rapid Bedside Pathology.** DERMATOLOGIC SURGERY. 38: 1548-1551. **I.F.: 1.80.**

12 Puig S. **A new era in melanoma.** DERMATOLOGIC THERAPY. 25: 389-391. **I.F.: 1.69.**

13 Badenas C.; Aguilera P.; Puig-Butille J.A.; Carrera C.; Malvehy J.; Puig S. **Genetic counseling in melanoma.** DERMATOLOGIC THERAPY. 25: 397-402. **I.F.: 1.69.**

14 Carrera C.; Puig S.; Malvehy J. **In vivo confocal reflectance microscopy in melanoma.** DERMATOLOGIC THERAPY. 25: 410-422. **I.F.: 1.69.**

15 Bennassar A.; Ishioka P.; Vilalta A. **Surgical treatment of primary melanoma.** DERMATOLOGIC THERAPY. 25: 432-442. **I.F.: 1.69.**

16 Puig S.; Cecilia N.; Malvehy J. **Dermoscopic criteria and basal cell carcinoma.** GIORNALE ITALIANO DI DERMATOLOGIA E VENEREOLOGIA. 147 (2): 135-140. **I.F.: 0.86.**

17 Roldan-Marin R.; Puig S.; Malvehy J. **Dermoscopic criteria and melanocytic lesions.** GIORNALE ITALIANO DI DERMATOLOGIA E VENEREOLOGIA. 147 (2): 149-159. **I.F.: 0.86.**

18 Celia-Terrassa T.; Meca-Cortes O.; Mateo F.; De Paz A.M.; Rubio N.; Arnal-Estape A.; Ell B.J.; Bermudo R.; Diaz A.; Guerra-Rebollo M.; Lozano J.J.; Estaras C.; Ulloa C.; Alvarez-Simon D.; Mila J.; Vilella R.; Paciucci R.; Martinez-Balbas M.; De Herreros A.G.; Gomis R.R.; Kang Y.B.; Blanco J.; Fernandez P.L.; Thomson T.M. **Epithelial-mesenchymal transition can suppress major attributes of human epithelial tumor-initiating cells.** JOURNAL OF CLINICAL INVESTIGATION. 122 (5): 1849-1868. **I.F.: 13.07.**

19 Puig S.; Bello Di Giacomo T.; Serra D.; Cabrini F.; Alos Llucia; Palou J.; Malvehy J. **Reflectance confocal microscopy of blue nevus.** EUROPEAN JOURNAL OF DERMATOLOGY. 22: 552-553. **I.F.: 2.53.**

20 Yeramian A.; Sorolla A.; Velasco A.; Santacana M.; Dolcet X.; Valls J.; Abal L.; Moreno S.; Egido R.; Casanova J.M.; Puig S.; Vilella R.; Llombart-Cussac A.; Matias-Guiu X.; Marti R.M. **Inhibition of activated receptor tyrosine kinases by Sunitinib induces growth arrest and sensitizes melanoma cells to Bortezomib by blocking Akt pathway.** INTERNATIONAL JOURNAL OF CANCER. 130 (4): 967-978. **I.F.: 5.44.**

21 Salerni G.; Carrera C.; Lovatto L.; Marti-Laborda R.M.; Isern G.; Palou J.; Alos Ll.; Puig S.; Malvehy J. **Characterization of 1152 lesions excised over 10 years using total-body photography and digital dermatoscopy in the surveillance of patients at high risk for melanoma.** JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 67: 836-845. **I.F.: 3.99.**

22 Pascal M.; Munoz-Cano R.; Reina Z.; Palacin A.; Vilella R.; Picado C.; Juan M.; Sanchez-Lopez J.; Rueda M.; Salcedo G.; Valero A.; Yaguee J.; Bartra J. **Lipid transfer protein syndrome: clinical pattern, cofactor effect and profile of molecular sensitization to plant-foods and pollens.** CLINICAL AND EXPERIMENTAL ALLERGY. 42: 1529-1539. **I.F.: 5.03.**

23 Terushkin V.; Dusza S.W.; Scope A.; Argenziano G.; Bahadoran P.; Cowell L.; De Giorgi V.; Ferarra G.; Kittler H.; Malvehy J.; Menzies S.; Piccolo D.; Puig S.; Rubegni P.; Stanganelli I.; Thomas L.; Zalaudek I.; Marghoob A.A. **Changes observed in slow growing melanomas during long-term dermoscopic monitoring.** BRITISJ JOURNAL OF DERMATOLOGY. 66(6):1213-20. **I.F.: 3.67.**

24 Argenziano G.; Zalaudek I.; Hofmann-Wellenhof R.; Bakos R.M.; Bergman W.; Blum A.; Broganelli P.; Cabo H.; Caltagirone F.; Catricalà C.; Coppini M.; Dewes L.; Francia M.G.;

Garrone A.; Turk B.G.; Ghigliotti G.; Giacomel J.; Gourhant J.Y.; Hlavin G.; Kukutsch N.; Lipari D.; Melchionda G.; Ozdemir F.; Pellacani G.; Pellicano R.; Puig S.; Scalvenzi M.; Sortino-Rachou A.M.; Virgili A.R.; Kittler H. **Total body skin examination for skin cancer screening in patients with focused symptoms.** JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 66(2):212-9. **I.F.: 3.99.**

EDITORIALS
I.F.: 2.27

1 Munoz-Cano R.; Pascal M.; Lombardero M.; Sanchez-Lopez J.; Bartra J.; Vilella R.; Picado C.; Valero A. **Nasal Challenge Test in the Diagnosis of Latex-Related Systemic Reactions.** JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 22 (4): 299-300. **I.F.: 2.27.**

GRANTS FOR RESEARCH IN PROGRESS

Puig S. **NoE - Genetic and environmental risk factors for melanoma: translation into behavioural change-Centre coordinador: The University of Leeds.** Sponsored by: European Commission LSHM-CT-2006-018702. Duration: 1/12/2005-30/9/2012.

Puig S. **Immune Modulating strategies for treatment of Merkel cell Carcinoma.** Sponsored by: European Commission 277775. Duration: 1/1/2012-31/12/2015.

Puig S. **Identificación de genes implicados en desarrollo y progresión de melanoma mediante la caracterización de regiones homozigotas.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1393. Duration: 1/1/2010-30/6/2013.

Vilella R. **Estudio fase II aleatorizado en pacientes con cáncer colorectal en estadio IV progresivo a dos líneas de quimioterapia, comparando el mejor tratamiento de soporte frente a tratamiento con células dendríticas y mejor tratamiento de soporteFase de finalización del estrudio TRA-082.** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC11-156. Duration: 1/1/2012-31/12/2013.

DOCTORAL THESES

Puig S. **Validación del seguimiento a largo plazo de pacientes de riesgo para melanoma con fotografía corporal total y dermatoscopía digital.** PhD student: Gabriel Esteban Salerni.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Hematopoietic progenitor cell transplantation

GROUP MEMBERS

TEAM LEADER
Álvaro Urbano-Ispizua (Hospital Clínic)
Tel.: 93 227 54 75
E-mail: aurbano@clinic.cat

RESEARCHERS:
Enric Carreras (Hospital Clínic)
Francesc Fernández-Avilés (Hospital Clínic)
Pedro Marín (Hospital Clínic)
Carmen Martínez Muñoz (Hospital Clínic)
Montserrat Rovira (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Beatriz Martin Antonio (IDIBAPS)

TECHNICIANS:
Anna Mantecon (Fundació Clínic)
Nuria Montfort (Hospital Clínic)
Lucia Amleto (IDIBAPS)

NURSING STAFF:
Noemi Llobet (Fundació Clínic)

COLLABORATORS:
Josep Mensa (Hospital Clínic)
Alfons Navarro (UB)
Marià Monzó (UB)
Maribel Díaz Ricart (Hospital Clínic)
Maria Suarez Lledó (Hospital Clinic)

TEAM INVOLVED IN:

STRATEGIC OBJECTIVES

In the last few years our group has developed basic and translational research lines, thanks to the collaboration with other research groups of the Clinic Hospital (Department of Immunology, Department of Hemostasis) and of the Medical School (Department of Human Anatomy). Very recently, we have established research space of our own in the CEK, and have expanded our collaboration with other research groups – particularly in reference to cell therapy. Likewise, we have started the expansion of hematopoietic precursors from umbilical cord blood based on co-cultures of mesenchymal cells and research lines in antitumor cell therapy, anti-infectious treatment and cell immune modulation. Functional studies of genetic polymorphisms have also been started. Lastly, we plan to develop a line of research in the field of the pharmacokinetics, pharmacodynamics and pharmacogenomics of immune modulators, as well as in the development of in vitro predictive models of graft-versus-host disease.

MAIN LINES OF RESEARCH

CLINICAL RESEARCH LINES

1. **Assessment of new hematopoietic precursor transplantation (HPT) indications.** Treatment of diseases such as amyloidosis, POEMS syndrome, scleromyxedema, autoimmune disorders (multiple sclerosis, Crohn's disease, lupus erythematosus), primary myelofibrosis or paroxysmal nocturnal hemoglobinuria – these being diseases in which our group has the most extensive experience in the country.

2. **Evaluation of new progenitor sources** (high-complexity hematopoietic precursor transplantation). The lack of compatible siblings for all patients amenable to hematopoietic precursor transplantation is leading to the development of transplants from non-consanguineous donors or umbilical cord blood. We are the most active group in the country in relation to these high complexity procedures, which represent 30% of our activity.

3. **Evaluation of new transplant modalities:**
   - Domiciliary autogenic HPT (unique in Europe, awarded on several occasions by the scientific and healthcare societies) – a modality which we aim to extend to domiciliary allogenic.
   - HPT.
   - Haploidentical transplantation with unmanipulated bone marrow.

4. **Studies addressing the prevention and treatment of the main complications of HPT:**
   - Prevention and treatment of graft-versus-host disease with new agents (anti-IL-2 receptor antibodies, new anti-thymocyte globulins, alemtuzumab and cell therapy using mesenchymal cells). Participation in different multicenter studies.

BASIC AND TRANSLATIONAL RESEARCH LINES

1. **Study of the post-HPT complications originating from endothelial dysfunction.** Different early complications appearing after HPT, such as veno-occlusive syndrome, capillary rupture syndrome, thrombotic microangiopathy, graft syndrome, and idiopathic pneumonia syndrome, appear to originate from endothelial dysfunction. Our project aims to characterize such dysfunction and the early diagnosis of infections then to seek effective preventive in HPT. Following the advances and treatment options. This research made in the early diagnosis of line is supported by two FIS grants fungal diseases (galactomannan and an aid from the German José antigen, high-resolution CAT) and Carreras Foundation.

2. **Study of immune reconstitution following HPT.** Following characterization of immune reconstitution in HPT from bone marrow, peripheral blood and in reduced intensity regimens, we plan to assess immune reconstitution in the transplantation of umbilical cord blood – this not ever having been achieved to date.

3. **Study of the impact of genic polymorphisms upon the complications and outcomes of HPT.** Following demonstration of the impact of the mannose-binding lectin variants upon the incidence of fungal infections, of the NOD2/CARD15 gene variants upon survival and the incidence of bronchiolitis obliterans and, more recently, of the impact of the NLRP2 and NLRP3 gene variants upon HPT survival, we plan to continue this line of research, assessing new polymorphisms that may affect the evolution of HPT.

4. **Study of new techniques for the early diagnosis of infections in HPT.** Following the advances made in the early diagnosis of fungal diseases (galactomannan antigen, high-resolution CAT) and viral infections (CMV antigenemia and PCR applied to all herpes viruses and other pathogens), which have facilitated our healthcare activities, we plan to continue evaluating new diagnostic techniques (quantitative PCR for EBV, the application of PCR to tissue samples, biological markers in bronchoalveolar lavage, and PET scan assessment of infections).

PUBLICATIONS

ORIGINALS
I.F.: 54.53

1 Snowden J.A.; Saccardi R.; Allez M.; Ardizzone S.; Arnold R.; Cervera R.; Denton C.; Hawkey C.; Labopin M.; Mancardi G.; Martin R.; Moore J.J.; Passweg J.; Peters C.; Rabusin M.; Rovira M.; Van Laar J.M.; Farge D. **Haematopoietic SCT in severe autoimmune diseases: updated guidelines of the European Group for Blood and Marrow Transplantation.** BONE MARROW TRANSPLANTATION. 47 (6): 770-790. **I.F.: 3.75.**

2 Tovar N.; Cibeira M.T.; Rosinol L.; Sole M.; Fernandez de Larrea C.; Escoda L.; Rovira M.; Blade J. **Bortezomib/dexamethasone followed by autologous stem cell transplantation as front line treatment for light-chain deposition disease.** EUROPEAN JOURNAL OF HAEMATOLOGY. 89: 340-344. **I.F.: 2.61.**

3 Jagasia M.; Arora M.; Flowers M.E.D.; Chao N.J.; McCarthy P.L.; Cutler C.S.; Urbano-Ispizua A.; Pavletic S.Z.; Haagenson M.D.; Zhang M.J.; Antin J.H.; Bolwell B.J.; Bredeson C.; Cahn J.Y.; Cairo M.; Gale R.P.; Gupta V.; Lee S.J.; Litzow M.; Weisdorf D.J.; Horowitz M.M.; Hahn T. **Risk factors for acute GVHD and survival after hematopoietic cell transplantation.** BLOOD. 119 (1): 296-307. **I.F.: 9.90.**

4 Bosch-Vizcaya A.; Perez-Garcia A.; Brunet S.; Solano C.; Buno I.; Guillem V.; Martinez-Laperche C.; Sanz G.; Barrenetxea C.; Martinez C.; Tuset E.; Lloveras N.; Coll R.; Guardia R.; Gonzalez Y.; Roncero J.M.; Bustins A.; Gardella S.; Fernandez C.; Buch J.; Gallardo D. **Donor CTLA-4 Genotype Influences Clinical Outcome after T Cell-Depleted Allogeneic Hematopoietic Stem Cell Transplantation from HLA-Identical Sibling Donors.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18 (1): 100-105. **I.F.: 3.87.**

5 Barba P.; Martino R.; Perez-Simon J.A.; Fernandez-Aviles F.; Pinana J.L.; Valcarcel D.; Campos-Varela I.; Lopez-Anglada L.; Rovira M.; Novelli S.; Lopez-Corral L.; Carreras E.; Sierra J. **Incidence, characteristics and risk factors of marked hyperbilirubinemia after allogeneic hematopoietic cell transplantation with reduced-intensity conditioning.** BONE MARROW TRANSPLANTATION. 47: 1343-1349. **I.F.: 3.75.**

6 Ljungman P.; Locasciulli A.; De Soria V.G.; Bekassy A.N.; Brinch L.; Espigado I.; Ferrant A.; Franklin I.M.; O'Riordan J.; Rovira M.; Shaw P.; Einsele H. **Long-term follow-up of HCV-infected hematopoietic SCT patients and effects of antiviral therapy.** BONE MARROW TRANSPLANTATION. 47: 1217-1221. **I.F.: 3.75.**

7 Grau S.; De la Camara R.; Sabater F.J.; Jarque I.; Carreras E.; Casado M.A.; Sanz M.A. **Cost-effectiveness of posaconazole versus fluconazole or itraconazole in the prevention of invasive fungal infections among high-risk neutropenic patients in Spain.** BMC INFECTIOUS DISEASES. 12. **I.F.: 3.12.**

8 Fernandez de Larrea C.; Navarro A.; Tejero R.; Tovar N.; Diaz T.; Cibeira M.T.; Rosinol L.; Ferrer G.; Rovira M.; Rozman M.; Monzo M.; Blade J. **Impact of MiRSNPs on Survival and Progression in Patients with Multiple Myeloma Undergoing Autologous Stem Cell Transplantation.** CLINICAL CANCER RESEARCH. 18: 3697-3704. **I.F.: 7.74.**

9 Martinez C.; Rosales M.; Calvo X.; Cuatrecasas M.; Rodriguez-Carunchio L.; Llach J.; Fernandez-Aviles F.; Rosinol L.; Rovira M.; Carreras E.; Urbano-Ispizua A. **Serial intestinal endoscopic examinations of patients with persistent diarrhea after allo-SCT.** BONE MARROW TRANSPLANTATION. 47 (5): 694-699. **I.F.: 3.75.**

10 Vazquez L.; Carreras E.; Serrano D.; Jarque I.; Mensa J.; Barberan J. **Antifungal prophylaxis in the haematological patient: a practical approach.** REVISTA ESPANOLA DE QUIMIOTERAPIA. 25: 299-304. **I.F.: 0.81.**

11 Bosch-Vizcaya A.; Pérez-García A.; Brunet S.; Solano C.; Buño I.; Guillem V.; Martínez-Laperche C.; Sanz G.; Barrenetxea C.; Martínez C.; Tuset E.; Lloveras N.; Coll R.; Guardia R.; González Y.; Roncero J.M.; Bustins A.; Gardella S.; Fernández C.; Buch J.; Gallardo D.; GvHD/Immunotherapy committee of the Spanish Group forHematopoietic Transplant (GETH). **Donor CTLA-4 genotype influences clinical outcome after T cell-depleted allogeneic hematopoietic stem celltransplantation from HLA-identical sibling donors.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18(1):100-5. **I.F.: 3.87.**

12 Martín-Antonio B.; Álvarez-Laderas I.; Cardesa R.; Márquez-Malaver F.; Baez A.; Carmona M.; Falantes J.; Suarez-Lledo M.; Fernández-Avilés F.; Martínez C.; Rovira M.; Espigado I.; Urbano-Ispizua Á. **A constitutional variant in the transcription factor EP300 strongly influences the clinical outcome of patients-submitted to allo-SCT.** BONE MARROW TRANSPLANTATION. 47(9):1206-11. **I.F.: 3.46.**

13 Battiwalla M.; Ellis K.; Li P.; Pavletic S.Z.; Akpek G.; Hematti P.; Klumpp T.R.; Maziarz R.T.; Savani B.N.;

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	43.66	12	6	3
2011	82.13	15	11	4
2012	54.53	13	5	6

Aljurf M.D.; Cairo M.S.; Drobyski W.R.; George B.; Hahn T.; Khera N.; Litzow M.R.; Loren A.W.; Saber W.; Arora M.; Urbano-Ispizua A.; Cutler C.; Flowers M.E.; Spellman S.R. **HLA DR15 antigen status does not impact graft-versus-host disease or survival in HLA-matched siblingtransplantation for hematologic malignancies.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18(8):1302-8. **I.F.: 3.87.**

REVIEWS
I.F.: 0.81

1 Vázquez L.; Carreras E.; Serrano D.; Jarque I.; Mensa J.; Barberán J. **Antifungal prophylaxis in the haematological patient: a practical approach.** REV ESP QUIM. 25(4):299-304. **I.F.: 0.81.**

MULTICENTRICS
I.F.: 24.08

1 Saccardi R.; Freedman M.S.; Sormani M.P.; Atkins H.; Farge D.; Griffith L.M.; Kraft G.; Mancardi G.L.; Nash R.; Pasquini M.; Martin R.; Muraro P.A.; European Blood and Marrow Transplantation Group; Center for International Blood and Marrow Research; HSCT in MS International Study Group. **A prospective, randomized, controlled trial of autologous haematopoietic stem cell transplantation for aggressivemultiple sclerosis: a position paper.** MULT SCLER J. 18(6):825-34. **I.F.: 4.22.**

2 Wiktor-Jedrzejczak W.; Dearden C.; De Wreede L.; Van Biezen A.; Brinch L.; Leblond V.; Brune M.; Volin L.; Kazmi M.; Nagler A.; Schetelig J.; De Witte T.; Dreger P.; EBMT Chronic Leukemia Working Party. **Hematopoietic stem cell transplantation in T-prolymphocytic leukemia: a retrospective study from the EuropeanGroup for Blood and Marrow Transplantation and the Royal Marsden Consortium.** LEUKEMIA. 26(5):972-6. **I.F.: 9.56.**

3 Mounier N.; Canals C.; Gisselbrecht C.; Cornelissen J.; Foa R.; Conde E.; Maertens J.; Attal M.; Rambaldi A.; Crawley C.; Luan J.J.; Brune M.; Wittnebel S.; Cook G.; Van Imhoff G.W.; Pfreundschuh M.; Sureda A.; Lymphoma Working Party of European Blood and Marrow Transplantation Registry (EBMT). **High-dose therapy and autologous stem cell transplantation in first relapse for diffuse large B cell lymphoma in the rituximab era: an analysis based on data from the European Blood and Marrow Transplantation Registry.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18(5):788-93. **I.F.: 3.87.**

4 Ossenkoppele G.; Evans-Jones G.; Jaeger U.; Hellström-Lindberg E.; Curriculum Update Working Group. **Towards a joint definition of European hematology.** HAEMATOL-HEMATOL J. 97(5):636-7. **I.F.: 6.42.**

GRANTS FOR RESEARCH IN PROGRESS

Urbano A. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0012. Duration: 1/1/2007-31/12/2013.

Martinez M.C. **Estudio de la farmacogenómica y la farmacodinámica de los inmunosupresores en el trasplante alogénico de progenitores hemopoyéticos y su implicación en las reacciones injerto contra huésped e injerto-contra-tumor.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1043. Duration: 1/1/2010-31/12/2012.

Urbano A. **Estudio de la influencia de variantes génicas en el sistema inmune innato del donate y del paciente en el pronóstico tras trasplante alogénico de progenitores hemopoyéticos.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/01090. Duration: 1/1/2012-31/12/2014.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Hematological oncology

GROUP MEMBERS

TEAM LEADER
Francisco Cervantes (Hospital Clínic)
Tel.: 93 227 54 28
E-mail: fcervan@clinic.cat

GROUP LEADERS:
Armando López-Guillermo (Hospital Clínic)
Joan Bladé (Hospital Clínic)

RESEARCHERS:
Emili Montserrat (Hospital Clínic)
Jordi Esteve (Hospital Clínic)
Julio Delgado (Hospital Clínic)
Eva Giné (Hospital Clínic)
Laura Rosiñol (Hospital Clínic)
Julio Delgado (Hospital Clínic)
Benet Nomdedeu (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Gonzalo Gutiérrez (Fundació Clínic)
Maria Teresa Cibeira (Fundació Clínic)
Carlos Fernández de Larrea (Fundació Clínic)
Meritxell Nomdedeu (Hospital Clínic)

PRE-DOCTORAL RESEARCHERS:
Anna Gaya (Hospital Clínic)
Marta Pratcorona (IDIBAPS)
Marina Díaz Beyá (Fundació Clínic)
Alejandra Martínez Trillos (Fundació Clínic)
Raquel Jiménez (Fundació Clínic)
Gerardo Ferrer (Fundació Clínic)
Xavier Calvo (Hospital Clínic)
Daniel Esteban (Fundació Clínic)
Cristina Motlló (Fundació Clínic)
Natalia Tovar (Hospital Clínic)
Jordina Rovira (Hospital Clínic)
Tycho Baumann (Hospital Clínic)
Rodrigo Ariel Santacruz (Fundació Clínic)

NURSING STAFF:
Sonia Chaves (Hospital Clínic)
Eva Carrera (Hospital Clínic)
Mónica Blanco (Hospital Clínic)

ADMINISTRATIVE STAFF:
María José Sánchez Melero (Hospital Clínic)
Cristina Cerrato (Hospital Clínic)
Marta Bistagne (Hospital Clínic)

STATISTICIAN (Data Manager)
Antonio de la Riva (Fundació Clínic)
Mª Carmen Pastor (Fundació Clínic)
Montserrat Pérez (Fundació Clínic)
Llúcia Sanz (Fundació Clínic)
Ester Bladé (Fundació Clínic)

COLLABORATORS:
Arturo Pereira (Hospital Clínic)
Eduardo Arellano (Hospital Clínic)
Alfons Navarro (UB)
Dolors Costa (Hospital Clínic)
Ana Carrió (Hospital Clínic)
Ruth Muñoz Risueño (Institut de Recerca Josep Carreras)

TEAM INVOLVED IN:

STRATEGIC OBJECTIVES

The main strategic objectives of our team are clinical, applied and basic research in hematological oncology. The team is structured into three study groups of three major disease categories.

MAIN LINES OF RESEARCH

1. **Study of lymphoid neoplasms.**
2. **Multiple myeloma and other monoclonal gammapathies.**
3. **Study of myeloid neoplasms.**

RESEARCH GROUP
LYMPHOID NEOPLASMS

Group Leader: Armando López (Hospital Clínic)

1. Lymphomas:
- Investigation of the progression mechanisms of the disease.
- Study of minimum residual disease and its clinical significance.
- Genomic profile of the diffuse large cell lymphoma and its clinical significance (in collaboration with the National Cancer Institute (USA) and the Leukemia Lymphoma Molecular Profiling Project (LLMPP)).
- New prognostic models in T cell lymphomas (collaboration in international studies, particularly the International T-cell Lymphomas Project. University of Nebraska) and follicular lymphoma.
- Utility of PET in evaluating the response of lymphomas and chronic lymphocytic leukemia (CLL).
- Genic profile of Hodgkin lymphoma.
- Phase I-II clinical trials with new drugs (bortezomib, anti-CD40, anti-CD22, aplidin, GA101, etc.), and international phase III trials to establish new indications in lymphomas (PRIMA and ZAR studies).

2. Chronic lymphocytic leukemia:
- Mechanisms of progression of the disease.
- Biology of ZAP-70 in relation to BCR.
- Analysis of transforming CLL.
- Influence of the cellular microenvironment upon the disease.
- Study of the immunological alterations and immune reconstitution in chronic lymphocytic leukemia (CLL Global Research Foundation project).
- Evaluation of cellular proliferation in CLL.
- Study of autoimmune phenomena.
- Multiparametric analysis of prognostic factors in CLL.
- Phase I/II and III clinical trials.
- Project for the Chronic Lymphocytic Leukemia (CLL) Genome, in collaboration with the Hematopatology Unit.

RESEARCH GROUP
MYELOMA AND OTHER MONOCLONAL GAMMAPATHIES

Group Leader: Joan Bladé (Hospital Clínic)

1. Study of molecular cytogenics, gene-expression profile of cytokines related to angiogenesis and the tumour microenvironment and analysis of genes differentially expressed in bone marrow and in extramedullary plasmacytomas in patients with multiple myoma.
2. Evaluation of immune reconstitution in patients in complete remission after autologous transplant and after chemotherapy and the possible relationship with disease progression, compared to patients with partial response and monoclonal gammopathies of undetermined significance (leucocyte subpopulations in peripheral blood and bone marrow, minimal residual disease measured by cytometry, levels of free light chains and heavy chains, miRNA in serum and bone marrow, functional analysis of the innate response by TLR and NK cell repertoire, mRNA microarrays in the bone marrow microenvironment, PET/CT).
3. Impact of individual genetic variability on the response to treatment in multiple myoma through the analysis of single nucleotide polymorphisms (SNPs).
4. Characterisation of cardiac involvement in AL amyloidosis based on clinical presentation, cardiac biomarker levels and imaging techniques, and the influence of genetics in the predilection of the light amyloidogenic chains for the heart and the severity of the cardiac involvement.
5. Medullary and extramedullary niche-related angiogenic and stromal factors in multiple myeloma: clinical and therapeutical implications.
6. Clinical trials for the treatment of multiple myoma and primary amyloidosis. Phases I, II and III. Sponsored by PETHEMA and by the industry.

RESEARCH GROUP
MYELOID NEOPLASMS

Group Leader:
Francisco Cervantes (Hospital Clínic)

1. **Chronic myeloid leukaemia:** Updating of the Spanish protocol for the treatment of chronic myeloid leukaemia with escalating doses of imatinib versus imatinib in combination with interferon (CML/PETHEMA). Participation in the European Chronic Myeloid Leukaemia Registry. Drawing up of new criteria for response of CML to treatment with tyrosine kinase inhibitors, within the European LeukemiaNet expert panel. Clinical trials for treatment of CML with new tyrosine kinase inhibitors.

2. **Philadelphia chromosome-negative chronic myeloproliferative disease:** Study of the thrombosis mechanisms. Leadership of the international study of predictive factors for the progression of primary myelofibrosis to acute leukaemia, in collaboration with the main groups in Europe and the United States. Analysis of the relationship between mutational status and JAK2 and MPL allele burden, haplotype 46/1 of the JAK2 gene and the initial characteristics, the progression pattern and the prognosis of myelofibrosis. Clinical trials for the treatment of myelofibrosis with JAK2 inhibitors and other new drugs.

3. **Acute myeloid leukaemia:** Study of the biological prognostic factors in AML of intermediate cytogenic risk: genetic mutations, gene expression profile, microRNA expression pattern. Analysis of the microRNA expression pattern in AML with translocation (8;16)/MYST3-CREBBP, AML with t(6;9)/DEK-NUP214 and AML with multilineage dysplasia. Prognostic value of molecular markers of AML in the results of haematopoietic stem cell transplantation (within the Acute Leukemia Working Party for the European Group for Blood and Bone Marrow Transplantation, EBMT). Design of AML treatment protocols for the Grupo Cooperativo para el Estudio y Tratamiento de las Leucemias Agudas y Mielodisplasias (CETLAM) [Cooperative Group for the Study and Treatment of Acute Leukaemia and Myelodysplasia] (sequential protocol, AML-2012). Phase II and III clinical trials with new drugs for the treatment of AML and ALL: FLT3 inhibitors, azacitidine, blinatumomab.

4. **Myelodysplastic Syndromes:** Natural history and prognosis. Participation in the Spanish MDS Registry. Prognostic importance of transfusion requirements. Study of sensitisation to transfusion. Cytogenetic and molecular abnormalities in MDS and the implications for prognosis. Study of microRNA in MDS. Clinical trials with new drugs for the treatment of MDS.

PUBLICATIONS

ORIGINALS
I.F.: 441.54

1 Perry A.M.; Cardesa-Salzmann T.M.; Meyer P.N.; Colomo L.; Smith L.M.; Fu K.; Greiner T.C.; Delabie J.; Gascoyne R.D.; Rimsza L.; Jaffe E.S.; Ott G.; Rosenwald A.; Braziel R.M.; Tubbs R.; Cook J.R.; Staudt L.M.; Connors J.M.; Sehn L.H.; Vose J.M.; Lopez-Guillermo A.; Campo E.; Chan W.C.; Weisenburger D.D. **A new biologic prognostic model based on immunohistochemistry predicts survival in patients with diffuse large B-cell lymphoma.** BLOOD. 120: 2290-2296. **I.F.: 9.90.**

2 Lopez C.; Baumann T.; Costa D.; Lopez-Guerra M.; Navarro A.; Gomez C.; Arias A.; Munoz C.; Rozman M.; Villamor N.; Colomer D.; Montserrat E.; Campo E.; Carrio A. **A new genetic abnormality leading to TP53 gene deletion in chronic lymphocytic leukaemia.** BRITISH JOURNAL OF HAEMATOLOGY. 156 (5): 612-618. **I.F.: 4.94.**

3 Hernandez-Boluda J.C.; Pereira A.; Cervantes F.; Alvarez-Larran A.; Collado M.; Such E.; Arilla M.J.; Boque C.; Xicoy B.; Maffioli M.; Bellosillo B.; Marugan I.; Amat P.; Besses C.; Guillem V. **A polymorphism in the XPD gene predisposes to leukemic transformation and new nonmyeloid malignancies in essential thrombocythemia and polycythemia vera.** BLOOD. 119 (22): 5221-5228. **I.F.: 9.90.**

4 Valcarcel D.; Montesinos P.; Sanchez-Ortega I.; Brunet S.; Esteve J.; Martinez-Cuadron D.; Ribera J.M.; Tormo M.; Bueno J.; Duarte R.; Llorente A.; Torres J.P.; Guardia R.; Sanz M.A.; Sierra J. **A scoring system to predict the risk of death during induction with anthracycline plus cytarabine-based chemotherapy in patients with de novo acute myeloid leukemia.** CANCER. 118 (2): 410-417. **I.F.: 4.77.**

5 Nomdedeu J.; Hoyos M.; Carricondo M.; Esteve J.; Bussaglia E.; Estivill C.; Ribera J.M.; Duarte R.; Salamero O.; Gallardo D.; Pedro C.; Aventin A.; Brunet S.; Sierra J. **Adverse impact of IDH1 and IDH2 mutations in primary AML: Experience of the Spanish CETLAM group.** LEUKEMIA RESEARCH. 36 (8): 990-997. **I.F.: 2.92.**

6 Alvarez-Larran A.; Pereira A.; Cervantes F.; Arellano-Rodrigo E.; Hernandez-Boluda J.C.; Ferrer-Marin F.; Angona A.; Gomez M.; Muina B.; Guillen H.; Teruel A.; Bellosillo B.; Burgaleta C.; Vicente V.; Besses C. **Assessment and prognostic value of the European LeukemiaNet criteria for clinicohematologic response, resistance, and intolerance to hydroxyurea in polycythemia vera.** BLOOD. 119 (6): 1363-1369. **I.F.: 9.90.**

7 Arellano-Rodrigo E.; Alvarez-Larran A.; Reverter J.C.; Villamor N.; Jou J.M.; Cervantes F. **Automated assessment of the neutrophil and platelet activation status in patients with essential thrombocythemia.** PLATELETS. 23 (5): 336-343. **I.F.: 1.85.**

8 Rosinol L.; Garcia-Sanz R.; Lahuerta J.J.; Hernandez-Garcia M.; Granell M.; De la Rubia J.; Oriol A.; Hernandez-Ruiz B.; Rayon C.; Navarro I.; Garcia-Ruiz J.C.; Besalduch J.; Gardella S.; Jimernez J.L.; Diaz-Mediavilla J.; Alegre A.; San Miguel J.; Blade J. **Benefit from autologous stem cell transplantation in primary refractory myeloma? Different outcomes in progressive versus stable disease.** HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 97 (4): 616-621. **I.F.: 6.42.**

9 Tovar N.; Cibeira M.T.; Rosinol L.; Sole M.; Fernandez De Larrea C.; Escoda L.; Rovira M.; Blade J. **Bortezomib/dexamethasone followed by autologous stem cell transplantation as front line treatment for light-chain deposition disease.** EUROPEAN JOURNAL OF HAEMATOLOGY. 89: 340-344. **I.F.: 2.61.**

10 Paiva B.; Gutierrez N.C.; Chen X.; Vidriales M.B.; Montalban M.A.; Rosinol L.; Oriol A.; Martinez-Lopez J.; Mateos M.V.; Lopez-Corral L.; Diaz-Rodriguez E.; Perez J.J.; Fernandez-Redondo E.; De Arriba F.; Palomera L.; Bengoechea E.; Terol M.J.; De Paz R.; Martin A.; Hernandez J.; Orfao A.; Lahuerta J.J.; Blade J.; Pandiella A.; San Miguel J.F. **Clinical significance of CD81 expression by clonal plasma cells in high-risk smoldering and symptomatic multiple myeloma patients.** LEUKEMIA. 26(8):1862-9. **I.F.: 9.56.**

11 Palumbo A.; Hajek R.; Delforge M.; Kropff M.; Petrucci M.T.; Catalano J.; Gisslinger H.; Wiktor-Jedrzejczak W.; Zodelava M.; Weisel K.; Cascavilla N.; Iosava G.; Cavo M.; Kloczko J.; Blade J.; Beksac M.; Spicka I.; Plesner T.; Radke J.; Langer C.; Ben Yehuda D.; Corso A.; Herbein L.; Yu Z.N.; Mei J.; Jacques C.; Dimopoulos M.A. **Continuous Lenalidomide Treatment for Newly Diagnosed Multiple Myeloma.** NEW ENGLAND JOURNAL OF MEDICINE. 366 (19): 1759-1769. **I.F.: 53.30.**

12 Guilhot J.; Baccarani M.; Clark R.E.; Cervantes F.; Guilhot F.; Hochhaus A.; Kulikov S.; Mayer J.; Petzer A.L.; Rosti G.; Rousselot P.; Saglio G.; Saussele S.; Simonsson B.; Steegmann J.L.; Zaritskey A.; Hehlmann R. **Definitions, methodological and statistical issues for phase 3 clinical trials in chronic myeloid leukemia: a proposal by the European LeukemiaNet.** BLOOD. 119: 5963-5971. **I.F.: 9.90.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	243.89	26	19	1
2011	356.47	41	29	4
2012	441.54	44	34	6

13 Lopez C.; Delgado J.; Costa D.; Conde L.; Ghita G.; Villamor N.; Navarro A.; Cazorla M.; Gomez C.; Arias A.; Munoz C.; Baumann T.; Rozman M.; Aymerich M.; Colomer D.; Cobo F.; Campo E.; Lopez-Guillermo A.; Montserrat E.; Carrio A. **Different distribution of NOTCH1 mutations in chronic lymphocytic leukemia with isolated trisomy 12 or associated with other chromosomal alterations.** GENES CHROMOSOMES & CANCER. 51 (9): 881-889. **I.F.: 3.31.**

14 Baptista M.J.; Muntanola A.; Calpe E.; Abrisqueta P.; Salamero O.; Fernandez E.; Codony C.; Gine E.; Kalko S.G.; Crespo M.; Bosch F. **Differential Gene Expression Profile Associated to Apoptosis Induced by Dexamethasone in CLL Cells According to IGHV/ZAP-70 Status.** CLINICAL CANCER RESEARCH. 18: 5924-5933. **I.F.: 7.74.**

15 Kulis M.; Heath S.; Bibikova M.; Queiros A.C.; Navarro A.; Clot G.; Martinez-Trillos A.; Castellano G.; Brun-Heath I.; Pinyol M.; Barberan-Soler S.; Papasaikas P.; Jares P.; Bea S.; Rico D.; Ecker S.; Rubio M.; Royo R.; Ho V.; Klotzle B.; Hernandez Ll.; Conde L.; Lopez-Guerra M.; Colomer D.; Villamor N.; Aymerich M.; Rozman M.; Bayes M.; Gut M.; Gelpi J.L.; Orozco M.; Fan J.B.; Quesada V.; Puente X.S.; Pisano D.G.; Valencia A.; Lopez-Guillermo A; Gut I.; Lopez-Otin C.; Campo E.; Martin-Subero J.I. **Epigenomic analysis detects widespread gene-body DNA hypomethylation in chronic lymphocytic leukemia.** NATURE GENETICS. 44: 1236-1242. **I.F.: 35.53.**

16 Ludwig H.; Avet-Loiseau H.; Blade J.; Boccadoro M.; Cavenagh J.; Cavo M.; Davies F.; De la Rubia J.; Delimpasi S.; Dimopoulos M.; Drach J.; Einsele H.; Facon T.; Goldschmidt H.; Hess U.; Mellqvist U.H.; Moreau P.; San-Miguel J.; Sondergeld P.; Sonneveld P.; Udvardy M.; Palumbo A. **European Perspective on Multiple Myeloma Treatment Strategies: Update Following Recent Congresses.** ONCOLOGIST. 17 (5): 592-606. **I.F.: 3.81.**

17 Guillem V.; Amat P.; Cervantes F.; Alvarez-Larran A.; Cervera J.; Maffioli M.; Bellosillo B.; Collado M.; Marugan I.; Martinez-Ruiz F.; Hernandez-Boluda J.C. **Functional polymorphisms in SOCS1 and PTPN22 genes correlate with the response to imatinib treatment in newly diagnosed chronic-phase chronic myeloid leukemia.** LEUKEMIA RESEARCH. 36 (2): 174-181. **I.F.: 2.92.**

18 Guidicelli S.N.; Lopez-Guillermo A.; Falcone U.; Conconi A.; Christinat A.; Rodriguez-Abreu D.; Grisanti S.; Lobetti-Bodoni C.; Piffaretti J.C.; Johnson P.W.; Mombelli G.; Cerny A.; Montserrat E.; Cavalli F.; Zucca E. **Hepatitis C virus and GBV-C virus prevalence among patients with B-cell lymphoma in different European regions: a case-control study of the International Extranodal Lymphoma Study Group.** HEMATOLOGICAL ONCOLOGY. 30: 137-142. **I.F.: 2.47.**

19 Paiva B.; Gutierrez N.C.; Rosinol L.; Vidriales M.B.; Montalban M.A.; Martinez-Lopez J.; Mateos M.V.; Cibeira M.T.; Cordon L.; Oriol A.; Terol M.J.; Echeveste M.A.; De Paz R.; De Arriba F.; Palomera L.; De la Rubia J.; Diaz-Mediavilla J.; Sureda A.; Gorosquieta A.; Alegre A.; Martin A.; Hernandez M.T.; Lahuerta J.J.; Blade J.; Migue J.F.S. **High-risk cytogenetics and persistent minimal residual disease by multiparameter flow cytometry predict unsustained complete response after autologous stem cell transplantation in multiple myeloma.** BLOOD. 119 (3): 687-691. **I.F.: 9.90.**

20 Brunet S.; Labopin M.; Esteve J.; Cornelissen J.; Socie G.; Iori A.P.; Verdonck L.F.; Volin L.; Gratwohl A.; Sierra J.; Mohty M.; Rocha V. **Impact of FLT3 Internal Tandem Duplication on the Outcome of Related and Unrelated Hematopoietic Transplantation for Adult Acute Myeloid Leukemia in First Remission: A Retrospective Analysis.** JOURNAL OF CLINICAL ONCOLOGY. 30 (7): 735-741. **I.F.: 18.37.**

21 Fernandez de Larrea C.; Navarro A.; Tejero R.; Tovar N.; Diaz T.; Cibeira M.T.; Rosinol L.; Ferrer G.; Rovira M.; Rozman M.; Monzo M.; Blade J. **Impact of MiRSNPs on Survival and Progression in Patients with Multiple Myeloma Undergoing Autologous Stem Cell Transplantation.** CLINICAL CANCER RESEARCH. 18: 3697-3704. **I.F.: 7.74.**

22 Cervantes F.; Dupriez B.; Passamonti F.; Vannucchi A.M.; Morra E.; Reilly J.T.; Demory J.L.; Rumi E.; Guglielmelli P.; Roncoroni E.; Tefferi A.; Pereira A. **Improving Survival Trends in Primary Myelofibrosis: An International Study.** JOURNAL OF CLINICAL ONCOLOGY. 30: 2981-2987. **I.F.: 18.37.**

23 Harrison C.; Kiladjian J.J.; Al-Ali H.K.; Gisslinger H.; Waltzman R.; Stalbovskaya V.; McQuitty M.; Hunter D.S.; Levy R.; Knoops L.; Cervantes F.; Vannucchi A.M.; Barbui T.; Barosi G.

JAK Inhibition with Ruxolitinib versus Best Available Therapy for Myelofibrosis. NEW ENGLAND JOURNAL OF MEDICINE. 366 (9): 787-798. **I.F.: 53.30.**

24 Mateos M.V.; Oriol A.; Martinez-Lopez J.; Gutierrez N.; Teruel A.I.; Lopez de la Guia A.; Lopez J.; Bengoechea E.; Perez M.; Polo M.; Palomera L.; De Arriba F.; Gonzalez Y.; Hernandez J.M.; Granell M.; Bello J.L.; Bargay J.; Penalver F.J.; Ribera J.M.; Martin-Mateos M.L.; Garcia-Sanz R.; Lahuerta J.J.; Blade J.; San-Miguel, J.F. **Maintenance therapy with bortezomib plus thalidomide or bortezomib plus prednisone in elderly multiple myeloma patients included in the GEM2005MAS65 trial.** BLOOD. 120: 2581-2588. **I.F.: 9.90.**

25 Navarro A.; Clot G.; Royo C.; Jares P.; Hadzidimitriou A.; Agathangelidis A.; Bikos V.; Darzentas N.; Papadaki T.; Salaverria I.; Pinyol M.; Puig X.; Palomero J.; Vegliante M.C.; Amador V.; Martinez-Trillos A.; Stefancikova L.; Wiestner A.; Wilson W.; Pott C.; Calasanz M.J.; Trim N.; Erber W.; Sander B.; Ott G.; Rosenwald A.; Colomer D.; Gine E.; Siebert R.; Lopez-Guillermo A.; Stamatopoulos K.; Bea S.; Campo E. **Molecular Subsets of Mantle Cell Lymphoma Defined by the IGHV Mutational Status and SOX11 Expression Have Distinct Biologic and Clinical Features.** CANCER RESEARCH. 72: 5307-5316. **I.F.: 7.87.**

26 Emanuel R.M.; Dueck A.C.; Geyer H.L.; Kiladjian J.J.; Slot S.; Zweegman S.; Te Boekhorst P.A.W.; Commandeur S.; Schouten H.C.; Sackmann F.; Kerguelen F.A.; Hernandez-Maraver D.; Pahl H.L.; Griesshammer M.; Stegelmann F.; Doehner K.; Lehmann T.; Bonatz K.; Reiter A.; Boyer F.; Etienne G.; Ianotto J.C.; Ranta D.; Roy L.; Cahn J.Y.; Harrison C.N.; Radia D.; Muxi P.; Maldonado N.; Besses C.; Cervantes F.; Johansson P.L.; Barbui T.; Barosi G.; Vannucchi A.M.; Passamonti F.; Andreasson B.; Ferarri M.L.; Rambaldi A.; Samuelsson J.; Birgegard G.; Tefferi A.; Mesa R.A. **Myeloproliferative Neoplasm (MPN) Symptom Assessment Form Total Symptom Score: Prospective International Assessment of an Abbreviated Symptom Burden Scoring System Among Patients With MPNs.** JOURNAL OF CLINICAL ONCOLOGY. 30: 4098-4103. **I.F.: 18.37.**

27 Royo C.; Navarro A.; Clot G.; Salaverria I.; Gine E.; Jares P.; Colomer D.; Wiestner A.; Wilson W.H.; Vegliante M.C.; Fernandez V.; Hartmann E.M.; Trim N.; Erber W.N.; Swerdlow S.H.; Klapper W.; Dyer M.J.S.; Vargas-Pabon M.; Ott G.; Rosenwald A.; Siebert R.; Lopez-Guillermo A.; Campo E.; Bea S. **Non-nodal type of mantle cell lymphoma is a specific biological and clinical subgroup of the disease.** LEUKEMIA. 26: 1895-1898. **I.F.: 9.56.**

28 Martinez A.; Ponzoni M.; Agostinelli C.; Hebeda K.M.; Matutes E.; Peccatori J.; Campidelli C.; Espinet B.; Perea G.; Acevedo A.; Mehrjardi A.Z.; Martinez-Bernal M.; Gelemur M.; Zucca E.; Pileri S.; Campo E.; Lopez-Guillermo A.; Rozman M. **Primary Bone Marrow Lymphoma: An Uncommon Extranodal Presentation of Aggressive Non-Hodgkin Lymphomas.** AMERICAN JOURNAL OF SURGICAL PATHOLOGY. 36 (2): 296-304. **I.F.: 4.35.**

29 Tovar N.; Fernandez de Larrea C.; Elena M.; Cibeira M.T.; Arostegui J.I.; Rosinol L.; Filella X.; Yaguee J.; Blade J. **Prognostic Impact of Serum Immunoglobulin Heavy/Light Chain Ratio in Patients with Multiple Myeloma in Complete Remission after Autologous Stem Cell Transplantation.** BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 18 (7): 1076-1079. **I.F.: 3.87.**

30 Dlouhy I.; Ghita G.; Baumann T.; Gine E.; Villamor N.; Rozman M.; Martinez-Trillos A.; Lopez-Guillermo A.; Delgado J. **Retreatment with purine analogs in patients with chronic lymphocytic leukemia.** LEUKEMIA RESEARCH. 36: 1521-1525. **I.F.: 2.92.**

31 Kumar S.K.; Lee J.H.; Lahuerta J.J.; Morgan G.; Richardson P.G.; Crowley J.; Haessler J.; Feather J.; Hoering A.; Moreau P.; Leleu X.; Hulin C.; Klein S.K.; Sonneveld P.; Siegel D.; Blade J.; Goldschmidt H.; Jagannath S.; Miguel J.S.; Orlowski R.; Palumbo A.; Sezer O.; Rajkumar S.V.; Durie B.G.M. **Risk of progression and survival in multiple myeloma relapsing after therapy with IMiDs and bortezomib: A multicenter international myeloma working group study.** LEUKEMIA. 26 (1): 149-157. **I.F.: 9.56.**

32 Lichter D.I.; Danaee H.; Pickard M.D.; Tayber O.; Sintchak M.; Shi H.; Richardson P.G.; Cavenagh J.; Blade J.; Facon T.; Niesvizky R.; Alsina M.; Dalton W.; Sonneveld P.; Lonial S.; Van de Velde H.; Ricci D.; Esseltine D.L.; Trepicchio W.L.; Mulligan G.; Anderson K.C. **Sequence analysis of beta-subunit genes of the 20S proteasome in patients with relapsed multiple myeloma treated with bortezomib or dexamethasone.** BLOOD. 120: 4513-4516. **I.F.: 9.90.**

33 Lopez-Corral L.; Sarasquete M.E.; Bea S.; Garcia-Sanz R.; Mateos M.V.; Corchete L.A.; Sayagues J.M.; Garcia E.M.; Blade J.; Oriol A.; Hernandez-Garcia M.T.; Giraldo P.; Hernandez J.; Gonzalez M.; Hernandez-Rivas J.M.; San Miguel J.F.; Gutierrez N.C. **SNP-**

based mapping arrays reveal high genomic complexity in monoclonal gammopathies, from MGUS to myeloma status. LEUKEMIA. 26: 2521-2529. **I.F.: 9.56.**

34 Rosinol L.; Oriol A.; Teruel A.I.; Hernandez D.; Lopez-Jimenez J.; De La Rubia J.; Granell M.; Besalduch J.; Palomera L.; Gonzalez Y.; Etxebeste M.A.; Diaz-Mediavilla J.; Hernandez M.T.; De Arriba F.; Gutierrez N.C.; Martin-Ramos M.L.; Cibeira M.T.; Mateos M.V.; Martinez J.; Alegre A.; Lahuerta J.J.; San Miguel J.; Blade J. **Superiority of bortezomib, thalidomide, and dexamethasone (VTD) as induction pretransplantation therapy in multiple myeloma: a randomized phase 3 PETHEMA/GEM study.** BLOOD. 120: 1589-1596. **I.F.: 9.90.**

35 Cordoba I.; González-Porras J.R.; Nomdedeu B.; Luño E.; De Paz R.; Such E.; Tormo M.; Vallespi T.; Collado R.; Xicoy B.; Andreu R.; Muñoz J.A.; Solé F.; Cervera J.; Del Cañizo C.; Spanish Myelodysplastic Syndrome Registry. **Better prognosis for patients with del(7q) than for patients with monosomy 7 in myelodysplastic syndrome.** CANCER. 118(1):127-33. **I.F.: 4.77.**

36 Tefferi A.; Pardanani A.; Gangat N.; Begna K.H.; Hanson C.A.; Van Dyke D.L.; Caramazza D.; Vannucchi A.M.; Morra E.; Cazzola M.; Pereira A.; Cervantes F.; Passamonti F. **Leukemia risk models in primary myelofibrosis: an International Working Group study.** LEUKEMIA. 26(6):1439-41. **I.F.: 9.56.**

37 Kropff M.; Baylon H.G.; Hillengass J.; Robak T.; Hajek R.; Liebisch P.; Goranov S.; Hulin C.; Bladé J.; Caravita T.; Avet-Loiseau H.; Moehler T.M.; Pattou C.; Lucy L.;Kueenburg E.; Glasmacher A.; Zerbib R.; Facon T. **Thalidomide versus dexamethasone for the treatment of relapsed and/or refractory multiple myeloma: results fromOPTIMUM, a randomized trial.** HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 97(5):784-91. **I.F.: 6.42.**

38 Pérez N.S.; Garcia-Herrera A.; Rosiñol L.; Palos L.; Santiago E.; Espinosa G.; Solé M.; Campistol J.M.; Quintana L.F. **Lymphoplasmacytic lymphoma causing light chain cast nephropathy.** NEPHROL DIAL TRANSPL. 27(1):450-3. **I.F.: 3.40.**

39 López-Guerra M.; Xargay-Torrent S.; Pérez-Galán P.; Saborit-Villarroya I.; Rosich L.; Villamor N.; Aymerich M.; Roué G.; Campo E.; Montserrat E.; Colomer D. **Sorafenib targets BCR kinases and blocks migratory and microenvironmental survival signals in CLL cells.** LEUKEMIA. 26(6):1429-32. **I.F.: 9.56.**

40 Paiva B.; Vídriales M.B.; Montalbán M.Á.; Pérez J.J.; Gutiérrez N.C.; Rosiñol L.; Martínez-López J.; Mateos M.V.; Cordón L.; Oriol A.; Terol M.J.; Echeveste M.A.; De Paz R.; De Arriba F.; Palomera L.; De la Rubia J.; Díaz-Mediavilla J.; Sureda A.; Gorosquieta A.; Alegre A.; Martin A.; Lahuerta J.J.; Bladé J.; Orfao A.; San Miguel J.F. **Multiparameter flow cytometry evaluation of plasma cell DNA content and proliferation in 595 transplant-eligiblepatients with myeloma included in the Spanish GEM2000 and GEM2005<65y trials.** AM J PATHOL. 181(5):1870-8. **I.F.: 4.89.**

41 Delgado J.; Espinet B.; Oliveira A.C.; Abrisqueta P.; De la Serna J.; Collado R.; Loscertales J.; Lopez M.; Hernandez-Rivas J.A.; Ferra C.; Ramirez A.; Roncero J.M.; Lopez C.; Aventin A.; Puiggros A.; Abella E.; Carbonell F.; Costa D.; Carrio A.; Gonzalez M.; Grupo Español de Leucemia Linfatica Cronica; Grupo Español de Citogenetica Hematologica. **Chronic lymphocytic leukaemia with 17p deletion: a retrospective analysis of prognostic factors and therapyresults.** BRITISH JOURNAL OF HAEMATOLOGY. 157(1):67-74. **I.F.: 4.94.**

42 Ribera J.M.; Morgades M.; González-Barca E.; Miralles P.; López-Guillermo A.; Gardella S.; López A.; Abella E.; García M.; Navarro J.T.; Feliu E. **Long-term follow-up of patients with HIV-related diffuse large B-cell lymphomas treated in a phase II study withrituximab and CHOP.** BRITISH JOURNAL OF HAEMATOLOGY. 157(5):637-9. **I.F.: 4.94.**

43 Cordoba I.; Gonzalez-Porras J.R.; Such E.; Nomdedeu B.; Luño E.; De Paz R.; Carbonell F.; Vallespi T.; Ardanaz M.; Ramos F.; Marco V.; Bonanad S.; Sanchez-Barba M.; Costa D.; Bernal T.; Sanz G.F.; Cañizo M.C. **The degree of neutropenia has a prognostic impact in low risk myelodysplastic syndrome.** LEUKEMIA RESEARCH. 36(3):287-92. **I.F.: 2.92.**

44 Saumell S.; Florensa L.; Luño E.; Sanzo C.; Cañizo C.; Hernández J.M.; Cervera J.; Gallart M.A.; Carbonell F.; Collado R.; Arenillas L.; Pedro C.; Bargay J.; Nomdedeu B.; Xicoy B.; Vallespí T.; Raya J.M.; Belloch L., Sanz G.F.; Solé F. **Prognostic value of trisomy 8 as a single anomaly and the influence of additional cytogenetic aberrations in primary myelodysplastic syndromes.** BRITISH JOURNAL OF HAEMATOLOGY. 159(3):311-21. **I.F.: 4.94.**

REVIEWS
I.F.: 37.16

1 Delgado J.; Baumann T.; Ghita G.; Montserrat E. **Chronic Lymphocytic Leukemia Therapy: Beyond Chemoimmunotherapy.** CURRENT PHARMACEUTICAL DESIGN. 18: 3356-3362. **I.F.: 3.87.**

2 Pospisilova S.; Gonzalez D.; Malcikova J.; Trbusek M.; Rossi D.; Kater A.P.; Cymbalista F.; Eichhorst B.; Hallek M.; Doehner H.; Hillmen P.; Van Oers M.; Gribben J.; Ghia P.; Montserrat E.; Stilgenbauer S.; Zenz T. **ERIC recommendations on TP53 mutation analysis in chronic lymphocytic leukemia.** LEUKEMIA. 26 (7): 1458-1461. **I.F.: 9.56.**

3 Palumbo A.; Blade J.; Boccadoro M.; Palladino C.; Davies F.; Dimopoulos M.; Dmoszynska A.; Einsele H.; Moreau P.; Sezer O.; Spencer A.; Sonneveld P.; San Miguel J. **How to Manage Neutropenia in Multiple Myeloma.** CLINICAL LYMPHOMA MYELOMA & LEUKEMIA. 12 (1): 5-11. **I.F.: 1.88.**

4 Richardson P.G.; Delforge M.; Beksac M.; Wen P.; Jongen J.L.; Sezer O.; Terpos E.; Munshi N.; Palumbo A.; Rajkumar S.V.; Harousseau J.L.; Moreau P.; Avet-Loiseau H.; Lee J.H.; Cavo M.; Merlini G.; Voorhees P.; Chng W.J.; Mazumder A.; Usmani S.; Einsele H.; Comenzo R.; Orlowski R.; Vesole D.; Lahuerta J.J.; Niesvizky R.; Siegel D.; Mateos M.V.; Dimopoulos M.; Lonial S.; Jagannath S.; Blade J.; San Miguel J.; Morgan G.; Anderson K.C.; Durie B.G.M.; Sonneveld P. **Management of treatment-emergent peripheral neuropathy in multiple myeloma.** LEUKEMIA. 26 (4): 595-608. **I.F.: 9.56.**

5 Hutchison C.A.; Blade J.; Cockwell P.; Cook M.; Drayson M.; Fermand J.P.; Kastritis E.; Kyle R.; Leung N.; Pasquali S.; Winearls C. **Novel approaches for reducing free light chains in patients with myeloma kidney.** NATURE REVIEWS NEPHROLOGY. 8 (4): 234-243. **I.F.: 7.09.**

6 Steegmann J.L.; Cervantes F.; Le Coutre P.; Porkka K.; Saglio G. **Off-target effects of BCR-ABL1 inhibitors and their potential long-term implications in patients with chronic myeloid leukemia.** LEUKEMIA & LYMPHOMA. 53: 2351-2361. **I.F.: 2.58.**

7 Montserrat E. **CLL therapy: the increasing importance of predictive markers.** ONCOLOGY-NY. 26(11):1064-6. **I.F.: 2.61.**

EDITORIALS
I.F.: 47.38

1 Blade J.; Fernandez de Larrea C.; Rosinol L. **Extramedullary involvement in multiple myeloma.** HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 97: 1618-1619. **I.F.: 6.42.**

2 Blade J.; Fernandez de Larrea C.; Rosinol L. **Incorporating Monoclonal Antibodies Into the Therapy of Multiple Myeloma.** JOURNAL OF CLINICAL ONCOLOGY. 30 (16): 1904-1906. **I.F.: 18.37.**

3 Montserrat E. **PTLD treatment: a step forward, a long way to go.** LANCET ONCOLOGY. 13 (2): 120-121. **I.F.: 22.59.**

CLINICAL GUIDELINES
I.F.: 2.92

1 Gale R.P.; Barosi G.; Barbui T.; Cervantes F.; Dohner K.; Dupriez B.; Gupta V.; Harrison C.; Hoffman R.; Kiladjian J.J.; Mesa R.; Mc Mullin M.F.; Passamonti F.; Ribrag V.; Roboz G.; Saglio G.; Vannucchi A.; Verstovsek S. **RBC-transfusion guidelines update.** LEUKEMIA RESEARCH. 36(5):659-60. **I.F.: 2.92.**

GRANTS FOR RESEARCH IN PROGRESS

Montserrat E. **Grup de Recerca Consolidat: Unitat Clínico-Biològica per a l'estudi de limfomes i síndromes limproliferatives.** Sponsored by: Generalitat de Catalunya, 2009_SGR_1008. Duration: 23/09/2009-31/12/2013.

Montserrat E. **NoE-Strengthen and develop scientific and technological excellence in research and therapy of leukemia (CML,AML,ALL,CLL,MDS,CMPD) by integration of the leading national leukemia networks and their interdisciplinary partner groups in Europe-Centre coordinador: Ruprecht-Karls Universitaet, Heidelberg.** Sponsored by: European Commission LSHC-CT-2004-503216. Duration: 1/1/2004-31/5/2012.

Montserrat E. **Diseño de un sistema clínico-biológico para el pronóstico de los pacientes con leucemia linfática crónica.** Sponsored by: CLL Global Res Found 08/245. Duration: 16/4/2008-30/10/2012.

Cervantes F. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0004. Duration: 1/1/2007-31/12/2013.

Bladé J. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0005. Duration: 1/1/2007-31/12/2013.

Montserrat E. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0051. Duration: 1/1/2007-31/12/2013.

López A. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0051. Duration: 1/1/2007-31/12/2013.

Cervantes F. **Estudio de la relación del haplotipo 46/1 del gen JAK2 y el estado mutacional y la carga alélica de los genes JAK2 y MPL con las características iniciales, el patrón evolutivo y el pronóstico de los pacientes con mielofibrosis.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/00236. Duration: 1/1/2011-31/12/2013.

DOCTORAL THESES

Montserrat E. **El microambiente y la autoinmunidad en la leucemia linfática crónica.** PhD Student: Gerardo Ferrer Aguilar.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Physiopathology and molecular bases in hematology

GROUP MEMBERS

TEAM LEADER
Dolors Colomer (Hospital Clínic)
Tel.: 93 227 55 72
E-mail: dcolomer@clinic.cat

RESEARCHERS:
Gael Roue (Fundació Clínic)
Joan Lluís Vives Corrons (Hospital Clínic)
Josep Lluís Aguilar (Hospital Clínic)
Maria Rozman (Hospital Clínic)
Marta Aymerich (Hospital Clínic)
Neus Villamor (Hospital Clínic)
Patricia Pérez Galán (IDIBAPS)
Teresa Estrach (Hospital Clínic)

POST-DOCTORAL RESEARCHERS:
Ifigènia Saborit (IDIBAPS)
Maria del Mar Mañu (ENERCA)
Mónica Lopez (Fundación Clínic, AECC)

PRE-DOCTORAL RESEARCHERS:
Alba Matas (IDIBAPS)
Alexandra Moros (IDIBAPS)
Arnau Montraveta (FPI, MICINN)
Laia Rosich (IDIBAPS)
Laura Olaya (ENERCA)
Silvia Xargay (Ministerio de Ciencia e Innovación)

TECHNICIANS:
Sandra Cabezas (Fundació Clínic)
Laura Jimenez (Fundació Clínic)
Jocabed Roldan (IDIBAPS, RTICC)
Jessica Abad (Fundació Clínic)

TEAM INVOLVED IN:

STRATEGIC OBJECTIVES

Epidemiological, genetic, molecular and physiopathological study of malignant hematological diseases and erythrocyte pathology.

MAIN LINES OF RESEARCH

1. Molecular bases of apoptosis regulation induced by drugs in lymphoid neoplasms. Evaluation of new strategies for the treatment of these disorders. Search for selective therapies against disregulated signaling pathways in lymphoid malignancies. Mechanisms of action and awareness-raising strategies.
2. Cytological, immunophenotypic and molecular study of malignant hematological diseases. Development of new technologies for the diagnosis and follow-up of minimum residual disease.
3. Promotion of cooperative strategies in the molecular diagnostic setting of leukemias and lymphomas.
4. Design and implementation of internal and external quality control programs.
5. Cutaneous T and B cell lymphomas. Clinical, histopathological and immunophenotypic study. Prognostic factors and epidemiology.
6. Molecular study of the congenital alterations of erythrocytes and of the physiopathological mechanisms intervening in the production and destruction of erythrocytes as a cause of anemia or erythrocytosis.
7. Genetic and epidemiological study of hemoglobin diseases and thalassemias.

PUBLICATIONS

ORIGINALS
I.F.: 178.17

1 Alvarez-Larrán A.; Rimola J.; Lomeña F.; Rozman M. **A 67 year-old male with abdominal pain, splenomegaly, lymphadenopathies, and bone density changes.** MEDICINA CLINICA. 139: 300-306. **I.F.: 1.38.**

2 Chapman C.M.; Sun X.; Roschewski M.; Aue G.; Farooqui M.; Stennett L.; Gibellini F.; Arthur D.; Pérez-Galán P.; Wiestner A. **ON 01910.Na Is Selectively Cytotoxic for Chronic Lymphocytic Leukemia Cells through a Dual Mechanism of Action Involving PI3K/AKT Inhibition and Induction of Oxidative Stress.** CLINICAL CANCER RESEARCH. 18 (7): 1979-1991. **I.F.: 7.74.**

3 Broseus J.; Florensa L.; Zipperer E.; Schnittger S.; Malcovati L.; Richebourg S.; Lippert E.; Cermak J.; Evans J.; Mounier M.; Raya J.M.; Bailly F.; Gattermann N.; Haferlach T.; Garand R.; Allou K.; Besses C.; Germing U.; Haferlach C.; Travaglino E.; Luno E.; Pinan M.A.; Arenillas L.; Rozman M.; Perez Sirvent M.L.; Favre B.; Guy J.; Alonso E.; Ahwij N.; Jerez A.; Hermouet S.; Maynadié M.; Cazzola M.; Girodon F. **Clinical features and course of refractory anemia with ring sideroblasts associated with marked thrombocytosis.** HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 97: 1036-1041. **I.F.: 6.42.**

4 Fernández-Calotti P.X, Lopez-Guerra M, Colomer D, Pastor-Anglada M. **Enhancement of fludarabine sensitivity by all-trans-retinoic acid in chronic lymphocytic leukemia cells.** HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 97 (6): 943-951. **I.F.: 6.42.**

5 Peñate Y.; Hernández-Machín B.; Pérez-Méndez L.I.; Santiago F.; Rosales B.; Servitje O.; Estrach T.; Fernández-Guarino M.; Calzado L.; Acebo E.; Gallardo F.; Salar A.; iZu R.; Ortiz-Romero P.L.; Pujol R.M.; Fernández-de-Misa R. **Intralesional rituximab in the treatment of indolent primary cutaneous B-cell lymphomas: an epidemiological observational multicentre study. The Spanish Working Group on Cutaneous Lymphoma.** BRITISH JOURNAL OF DERMATOLOGY. 167 (1): 174-179. **I.F.: 3.67.**

6 Zini G.; d'Onofrio G.; Briggs C.; Erber W.; Jou J.M.; Lee S.H.; McFadden S.; Vives-Corrons J.L.; Yutaka N.; Lesesve J.F.; International Council for Standardization in Haematology (ICSH). **ICSH recommendations for identification, diagnostic value, and quantitation of schistocytes.** INTERNATIONAL JOURNAL OF LABORATORY HEMATOLOGY. 34 (2): 107-116. **I.F.: 1.18.**

7 Dlouhy I.; Ghita G.; Baumann T.; Gine E.; Villamor N.; Rozman M.; Martinez-Trillos A.; Lopez-Guillermo A.; Delgado J. **Retreatment with purine analogs in patients with chronic lymphocytic leukemia.** LEUKEMIA RESEARCH. 36: 1521-1525. **I.F.: 2.92.**

8 Royo C.; Navarro A.; Clot G.; Salaverria I.; Giné E.; Jares P.; Colomer D.; Wiestner A.; Wilson W.H.; Vegliante M.C.; Fernandez V.; Hartmann E.M.; Trim N.; Erber W.N.; Swerdlow S.H.; Klapper W.; Dyer M.J.; Vargas-Pabón M.; Ott G.; Rosenwald A.; Siebert R.; López-Guillermo A.; Campo E.; Beà S. **Non-nodal type of mantle cell lymphoma is a specific biological and clinical subgroup of the disease.** LEUKEMIA. 26: 1895-1898. **I.F.: 9.56.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	78.59	14	10	1
2011	142.13	20	12	6
2012	178.17	21	16	3

9 López C.; Baumann T.; Costa D.; López-Guerra M.; Navarro A.; Gómez C.; Arias A.; Muñoz C.; Rozman M.; Villamor N.; Colomer D.; Montserrat E.; Campo E.; Carrió A. **A new genetic abnormality leading to TP53 gene deletion in chronic lymphocytic leukaemia.** BRITISH JOURNAL OF HAEMATOLOGY. 156 (5): 612-618. **I.F.: 4.95.**

10 Diekmann F.; Rovira J.; Diaz-Ricart M.; Arellano E.M.; Vodenik B.; Jou J.M.; Vives-Corrons J.L.; Escolar G.; Campistol J.M. **mTOR inhibition and erythropoiesis: microcytosis or anaemia?** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (2): 537-541. **I.F.: 3.40.**

11 Quesada V.; Conde L.; Villamor N.; Ordóñez G.R.; Jares P.; Bassaganyas L.; Ramsay A.J.; Beà S.; Pinyol M.; Martínez-Trillos A.; López-Guerra M.; Colomer D.; Navarro A.; Baumann T.; Aymerich M.; Rozman M.; Delgado J.; Giné E.; Hernández J.M.; González-Díaz M.; Puente D.A.; Velasco G.; Freije J.M.; Tubío J.M.; Royo R.; Gelpí J.L.; Orozco M.; Pisano D.G.; Zamora J.; Vázquez M.; Valencia A.; Himmelbauer H.; Bayés M.; Heath S.; Gut M.; Gut I.; Estivill X.; López-Guillermo A.; Puente X.S.; Campo E.; López-Otín C. **Exome sequencing identifies recurrent mutations of the splicing factor SF3B1 gene in chronic lymphocytic leukemia.** NATURE GENETICS. 44 (1): 47-U70. **I.F.: 35.53.**

12 López C.; Delgado J.; Costa D.; Conde L.; Ghita G.; Villamor N.; Navarro A.; Cazorla M.; Gómez C.; Arias A.; Muñoz C.; Baumann T.; Rozman M.; Aymerich M.; Colomer D.; Cobo F.; Campo E.; López-Guillermo A.; Montserrat E.; Carrió A. **Different distribution of NOTCH1 mutations in chronic lymphocytic leukemia with isolated trisomy 12 or associated with other chromosomal alterations.** GENES CHROMOSOMES & CANCER. 51 (9): 881-889. **I.F.: 3.31.**

13 Arellano-Rodrigo E.; Alvarez-Larrán A.; Reverter J.C.; Villamor N.; Jou J.M.; Cervantes F. **Automated assessment of the neutrophil and platelet activation status in patients with essential thrombocythemia.** PLATELETS. 23 (5): 336-343. **I.F.: 1.85.**

14 Rosich L.; Xargay-Torrent S.; López-Guerra M.; Campo E.; Colomer D.; Roué G. **Counteracting Autophagy Overcomes Resistance to Everolimus in Mantle Cell Lymphoma.** CLINICAL CANCER RESEARCH. 18: 5278-5289. **I.F.: 7.74.**

15 Kulis M.; Heath S.; Bibikova M.; Queirós A.C.; Navarro A.; Clot G.; Martínez-Trillos A.; Castellano G.; Brun-Heath I.; Pinyol M.; Barberán-Soler S.; Papasaikas P.; Jares P.; Beà S.; Rico D.; Ecker S.; Rubio M.; Royo R.; Ho V.; Klotzle B.; Hernández L.; Conde L.; López-Guerra M.; Colomer D.; Villamor N.; Aymerich M.; Rozman M.; Bayes M.; Gut M.; Gelpí J.L.; Orozco M.; Fan J.b.; Quesada V.; Puente X.S.; Pisano D.G.; Valencia A.; López-Guillermo A.; Gut I.; López-Otín C.; Campo E.; Martín-Subero J.I. **Epigenomic analysis detects widespread gene-body DNA hypomethylation in chronic lymphocytic leukemia.** NATURE GENETICS. 44: 1236-1242. **I.F.: 35.53.**

16 Navarro A.; Clot G.; Royo C.; Jares P.; Hadzidimitriou A.; Agathangelidis A.; Bikos V.; Darzentas N.; Papadaki T.; Salaverria I.; Pinyol M.; Puig X.; Palomero J.; Vegliante M.C.; Amador V.; Martinez-Trillos A.; Stefancikova L.; Wiestner A.; Wilson W.; Pott C.; Calasanz M.J.; Trim N.; Erber W.; Sander B.; Ott G.; Rosenwald A.; Colomer D.; Giné E.; Siebert R.; Lopez-Guillermo A.; Stamatopoulos K.; Beà S.; Campo E. **Molecular Subsets of Mantle Cell Lymphoma Defined by the IGHV Mutational Status and SOX11 Expression Have Distinct Biologic and Clinical Features.** CANCER RESEARCH. 72: 5307-5316. **I.F.: 7.86.**

17 Jares P.; Colomer D.; Campo E. **Molecular pathogenesis of mantle cell lymphoma.** JOURNAL OF CLINICAL INVESTIGATION. 122: 3416-3423. **I.F.: 13.07.**

18 Martinez A.; Ponzoni M.; Agostinelli C.; Hebeda K.M.; Matutes E.; Peccatori J.; Campidelli C.; Espinet B.; Perea G.; Acevedo A.; Mehrjardi A.Z.; Martinez-Bernal M.; Gelemur M.; Zucca E.; Pileri S.; Campo E.; López-Guillermo A.; Rozman M.; International Extranodal Lymphoma Study Group. **Primary Bone Marrow Lymphoma: An Uncommon Extranodal Presentation of Aggressive Non-Hodgkin Lymphomas.** AMERICAN JOURNAL OF SURGICAL PATHOLOGY. 36 (2): 296-304. **I.F.: 4.35.**

19 De Larrea C.F.; Navarro A.; Tejero R.; Tovar N.; Díaz T.; Cibeira M.T.; Rosiñol L.; Ferrer G.; Rovira M.; Rozman M.; Monzó M.; Bladé J. **Impact of MiRSNPs on Survival and Progression in Patients with Multiple Myeloma Undergoing Autologous Stem Cell Transplantation.** CLINICAL CANCER RESEARCH. 18: 3697-3704. **I.F.: 7.74.**

20 López-Guerra M.; Xargay-Torrent S.; Pérez-Galán P.; Saborit-Villarroya I.; Rosich L.; Villamor N.; Aymerich M.; Roué G.; Campo E.; Montserrat E.; Colomer D. **Sorafenib targets BCR kinases and blocks migratory and microenvironmental survival signals in CLL cells.** LEUKEMIA. 26(6):1429-32. **I.F.: 9.56.**

21 Muniesa C.; Pujol R.M.; Estrach M.T.; García-Muret M.P.; Climent J.; Salar A.; Servitje O. **Primary cutaneous diffuse large B-cell lymphoma, leg type and secondary cutaneous involvement by testicular B-cell lymphoma share identical clinicopathological and immunophenotypical features.** J AM ACAD DERMATOL. 66(4):650-4. **I.F.: 3.99.**

GRANTS FOR RESEARCH IN PROGRESS

Colomer D. **Dianes terapeutiques i noves tecniques diagnostiques en neoplasies limfoides.** Sponsored by: AGAUR 2009_SGR_967. Duration: 15/9/2009-31/12/2013.

Vives Corrons J.L. **European reference network of expert centres in rare anaemias.** Sponsored by: European Commission 20081210. Duration: 1/6/2009-31/12/2012.

Colomer D. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0014. Duration: 1/1/2007-31/12/2013.

Vives Corrons J.L. **Déficit congénito de piruvato cinasa. Influencia del equilibrio entre eritropoyesis y apoptosis en la intensidad del síndrome hemolítico.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI10/01460. Duration: 1/1/2011-31/12/2013.

Colomer D. **Utilización de terapias selectivas contra rutas de señalización desreguladas en neoplasias linfoides. Mecanismos de acción y estrategias de sensibilización.** Sponsored by: Ministerio de Economía y Competitividad SAF2009_09503. Duration: 1/1/2010-31/12/2012.

Perez P. **Interferencia en la interacción entre la célula tumoral y su microambiente: una nueva aproximación terapéutica en el tratamiento del linfoma folicular.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-29326. Duration: 1/1/2012-31/12/2014.

Vives Corrons J.L. **Creation of a Catalan network for the diagnosis and clinical management of rare anemias due to major haemoglobinopathies.** Sponsored by: Fundaciò Marató TV3 101730. Duration: 14/12/2010-13/12/2013.

Roué G. **Identificación de nuevas dianas terapéuticas para mejorar la actividad del Velcade en el linfoma de células del manto.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/00060. Duration: 1/1/2010-31/12/2012.

DOCTORAL THESES

Colomer D. **Identificació de noves dianes terapèutiques en neoplàsies limfoides.** PhD student: Sílvia Xargay Torrent.

Estrach T.; Campo E. **Características, clínico-patológicas y moleculares de los linfomas cutáneos de células T periféricos poco frecuentes.** PhD student: Adriana García Herrera.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Hemotherapy - hemostasis

GROUP MEMBERS

TEAM LEADER
Ginés Escolar (Hospital Clínic)
Tel.: 93 227 54 48
E-mail: gescolar@clinic.cat

RESEARCHERS:
Maribel Díaz-Ricart (Hospital Clínic)
Ana M. Galán (IDIBAPS)
Pablo García de Frutos (CSIC)
Miquel Lozano (Hospital Clínic)
Anna M. Merino (Hospital Clínic)
Joan Monteagudo (Hospital Clínic)
Antonio Ordinas (Hospital Clínic)
Arturo Pereira (Hospital Clínic)
Juan Carles Reverter (Hospital Clínic)
Cristina Ch. Sanz (Hospital Clínic)
M. Dolors Tàssies (Hospital Clínic)
Joan Cid Vidal (Hospital Clínic)

POST-DOCTORAL RESEARCHER:
Irene López-Vilchez (IDIBAPS)
Begoña Hurtado Villarejo (JAEDOC-CSIC)
Cristina Aresté (JAEDOC-CSIC)

PRE-DOCTORAL RESEARCHERS:
Susana Martín Rodríguez (Fundació Clínic)

TECHNICIANS:
Marc Pino (Hospital Clínic)
Patricia Molina Moreno (Hospital Clínic)
Verónica Sanz (Fundació Clínic)
Anhara Menéndez (CSIC)

COLLABORATORS:
Rosa Brugués (Hospital Clínic)
Gabriela Gutiérrez (Hospital Clínic)
M.Rosa Hernández (Fundació Clínic)
Josep M. Jou (Hospital Clínic)
Eduardo Arellano Rodrigo (Hospital Clínic)

TEAM INVOLVED IN:
Red HERACLES de investigación cardiovascular

STRATEGIC OBJECTIVES

1. Study of the basic mechanisms regulating blood cell function and of the interactions between such cells, with the vascular wall, and with other cells.
2. Evaluation of congenital and acquired defects in hemostasis and their pharmacological and/or transfusional correction.
3. Laboratory characterization of bleeding and thrombotic phenotypes and genotypes.
4. Analysis of the efficacy and safety of new strategies for sparing blood component transfusions.
5. Characterization of animal models of hemostasis, preferentially in mice.

MAIN LINES OF RESEARCH

1. Study of the mechanisms involved in the development of bleeding and thrombotic disorders. Proteomic study for determining the changes in the vascular system and in the different blood cells in thrombotic and bleeding disorders.
2. Evaluation of the physiological and pathological implications of circulating and/or intraplatelet tissue factor in atherothrombosis.
3. Characterization of endothelial dysfunction as a common factor in the development of complications associated with multiple diseases. A physiological, biochemical and proteomic approach.
4. New strategies for the treatment of combined humoral immunity in therapeutic apheresis.
5. Evaluation of the participation of serotoninergic and purinergic mechanisms in platelet function. Study of the antithrombotic potential of pharmacological inhibitors.
6. Role of the phenotype/genotype of fibrinolysis and its repercussions upon global or specific functional tests in hemorrhagic and thrombotic pathology.
7. Study of the GAS6 vitamin K-dependent protein in hemostasis and the vascular wall, using knockout mice for this gene.
8. Evaluation of the potencial of clotting factor concentrates to reverse the anticoagulant action of the new oral antithrombotic agents.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	93.91	22	8	6
2011	94.11	22	9	10
2012	97.41	19	10	8

ORIGINALS
I.F.: 97.41

1 Hernandez-Boluda J.C.; Pereira A.; Cervantes F.; Alvarez-Larran A.; Collado M.; Such E.; Arilla M.J.; Boque C.; Xicoy B.; Maffioli M.; Bellosillo B.; Marugan I.; Amat P.; Besses C.; Guillem V. **A polymorphism in the XPD gene predisposes to leukemic transformation and new nonmyeloid malignancies in essential thrombocythemia and polycythemia vera.** BLOOD. 119 (22): 5221-5228. **I.F.: 9.90.**

2 Blasi A.; Beltran J.; Pereira A.; Martinez-Palli G.; Torrents A.; Balust J.; Zavala E.; Taura P.; Garcia-Valdecasas J.C. **An assessment of thromboelastometry to monitor blood coagulation and guide transfusion support in liver transplantation.** TRANSFUSION. 52: 1989-1998. **I.F.: 3.22.**

3 Alvarez-Larran A.; Pereira A.; Cervantes F.; Arellano-Rodrigo E.; Hernandez-Boluda J.C.; Ferrer-Marin F.; Angona A.; Gomez M.; Muina B.; Guillen H.; Teruel A.; Bellosillo B.; Burgaleta C.; Vicente V.; Besses C. **Assessment and prognostic value of the European LeukemiaNet criteria for clinicohematologic response, resistance, and intolerance to hydroxyurea in polycythemia vera.** BLOOD. 119 (6): 1363-1369. **I.F.: 9.90.**

4 Arellano-Rodrigo E.; Alvarez-Larran A.; Reverter J.C.; Villamor N.; Jou J.M.; Cervantes F. **Automated assessment of the neutrophil and platelet activation status in patients with essential thrombocythemia.** PLATELETS. 23 (5): 336-343 2012. **I.F.: 1.85.**

5 Gonzalez-Juanatey J.R.; Alvarez-Sabin J.; Lobos J.M.; Martinez-Rubio A.; Reverter J.C.; Oyagueez I.; Gonzalez-Rojas N.; Becerra V. **Cost-effectiveness of Dabigatran for Stroke Prevention in Non-valvular Atrial Fibrillation in Spain.** REVISTA ESPANOLA DE CARDIOLOGIA. 65: 901-910. **I.F.: 2.53.**

6 Raffa S.; Reverter J.C.; Seijo S.; Tassies D.; Abraldes J.G.; Bosch J.; Garcia-Pagan J.C. **Hypercoagulability in Patients With Chronic Noncirrhotic Portal Vein Thrombosis.** CLINICAL GASTROENTEROLOGY AND HEPATOLOGY. 10 (1): 72-78. **I.F.: 5.63.**

7 Cervantes F.; Dupriez B.; Passamonti F.; Vannucchi A.M.; Morra E.; Reilly J.T.; Demory J.L.; Rumi E.; Guglielmelli P.; Roncoroni E.; Tefferi A.; Pereira A. **Improving Survival Trends in Primary Myelofibrosis: An International Study.** JOURNAL OF CLINICAL ONCOLOGY. 30: 2981-2987. **I.F.: 18.37.**

8 Diekmann F.; Rovira J.; Diaz-Ricart M.; Arellano E.M.; Vodenik B.; Jou J.M.; Vives-Corrons J.L.; Escolar G.; Campistol J.M. **mTOR inhibition and erythropoiesis: microcytosis or anaemia?** NEPHROLOGY DIALYSIS TRANSPLANTATION. 27 (2): 537-541. **I.F.: 3.40.**

9 Caballo C.; Palomo M.; Cases A.; Galan A.M.; Molina P.; Vera M.; Bosch X.; Escolar G.; Diaz-Ricart M. **NF kappa B in the Development of Endothelial Activation and Damage in Uremia: An In Vitro Approach.** PLOS ONE. 7(8):e43374. **I.F.: 4.09.**

10 Reverter J.L.; Tassies D.; Alonso N.; Pellitero S.; Sanmarti A.; Reverter J.C. **Non-detectable Chlamydophila pneumoniae DNA in peripheral leukocytes in type 2 diabetes mellitus patients with and without carotid atherosclerosis.** MEDICINA CLINICA. 138 (1): 11-14. **I.F.: 1.38.**

11 Lopez-Vilchez I.; Galan A.M.; Hernandez M.R.; Caballo C.; Roque M.; Diaz-Ricart M.; White J.G.; Escolar G. **Platelet-associated tissue factor enhances platelet reactivity and thrombin generation in experimental studies in vitro.** THROMBOSIS RESEARCH. 130: E294-E300. **I.F.: 2.44.**

12 Blanco-Molina M.A.; Lozano M.; Cano A.; Cristobal I.; Pallardo L.P.; Lete I. **Progestin-only contraception and venous thromboembolism.** THROMBOSIS RESEARCH. 129 (5): E257-E262. **I.F.: 2.44.**

13 Martinez-Zamora M.A.; Peralta S.; Creus M.; Tassies D.; Reverter J.C.; Espinsa G.; Cervera R.; Carmona F.; Balasch J. **Risk of thromboembolic events after recurrent spontaneous abortion in antiphospholipid syndrome: a case-control study.** ANNALS OF THE RHEUMATIC DISEASES. 71 (1): 61-66. **I.F.: 8.73.**

14 Hernández M.R.; Urbán P.; Casals E.; Estelrich J.; Escolar G.; Galán A.M. **Liposomes bearing fibrinogen could potentially interfere with platelet interaction and procoagulant activity.** INT J NANOMED. 7:2339-47. **I.F.: 3.13.**

15 Cid J.; Escolar G.; Lozano M. **Therapeutic efficacy of platelet components treated with amotosalen and ultraviolet A pathogen inactivationmethod: results of a meta-analysis of randomized controlled trials.** VOX SANG. 103(4):322-30. **I.F.: 2.86.**

16 Ballesteros F.; Tassies D.; Reverter J.C.; Alobid I.; Bernal-Sprekelsen M. **Idiopathic sudden sensorineural hearing loss: classic cardiovascular and new genetic risk factors.** AUDIOL NEURO-OTOL. 17(6):400-8. **I.F.: 2.46.**

17 Pereira A. **Will clinical studies elucidate the connection between the length of storage of transfused red blood cells andclinical outcomes? An analysis based on the simulation of randomized controlled trials.** TRANSFUSION. 53(1):34-40. **I.F.: 3.23.**

18 Losonczy G.; Vajas A.; Takács L.; Dzsudzsák E.; Fekete A.; Márhoffer E.; Kardos L.; Ajzner E.; Hurtado B.; De Frutos P.G.; Berta A.; Balogh I. **Effect of the Gas6 c.834+7G>A polymorphism and the interaction of known risk factors on AMD pathogenesis in Hungarian patients.** PLOS ONE. 7(11):e50181. **I.F.: 4.09.**

19 Gely-Pernot A.; Coronas V.; Harnois T.; Prestoz L.; Mandairon N.; Didier A.; Berjeaud J.M.; Monvoisin A.; Bourmeyster N.; De Frutos P.G.; Philippe M.; Benzakour O. **An endogenous vitamin K-dependent mechanism regulates cell proliferation in the brain subventricular stem cell niche.** STEM CELLS. 30(4):719-31. **I.F.: 7.78.**

EDITORIALS
I.F.: 5.04

1 García de Frutos P. **Protein S: an anticoagulant in its own right.** THROMB HAEMOSTASIS. 107(4):601. **I.F.: 5.04.**

GRANTS FOR RESEARCH IN PROGRESS

Escolar G. **Red HERACLES: Determinantes genéticos y ambientales de la disfunción vascular.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0009/1003. Duration: 29/2/2008-31/12/2013.

Galan A.M. **El sistema serotoninérgico: una concexión entre los mecanismos de la depresión mayor, la inflamación y el riesgo cardiovascular.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/0664. Duration: 1/1/2010-30/6/2013.

Tassies M.D. **Fenotipo procoagulante y anticoagulante de las micropartículas circulantes en la patología trombótica arterial de las enfermedades autoinmunes.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI11/00977. Duration: 1/1/2012-31/12/2014.

Escolar G. **Papel de Los receptores ligados a proteína G y los mecanismos de señalización mediados por kinasas en la internalización y expresión del factor tisular por plaquetas: Implicaciones en la trombogénesis.** Sponsored by: Ministerio de Economía y Competitividad SAF2009_10365. Duration: 1/1/2010-31/12/2012.

Diaz-Ricart M.I. **Receptores toll-like, inflamasoma NALP3 e inestabilidad epigenética en el desarrollo de disfunción endotelial en la uremia.** Sponsored by: Ministerio de Economía y Competitividad SAF2011-28214. Duration: 1/1/2012-31/12/2014.

García P. **Papel regulador del sistema GAS6-PRO/TAM en la respuesta a la inflamación de leucocitos y plaquetas.** Sponsored by: Ministerio de Economía y Competitividad BFU2010-22185. Duration: 1/1/2011-31/06/2012.

García P. **Thrombus stabilization as therapeutic target. From in vitro studies to animal models.** Sponsored by: Fundació Marató de TV3. Duration:1/1/2011-31/12/2012.

Escolar G. **Evaluación del potencial de los concentrados de factores de la coagulación activados en la reversión de la acción anticogulante de los nuevos agentes antitrombóticos orales: estudios ex vivo en sangre de voluntarios sanos (EudraCT2010-0022985-29).** Sponsored by: Ministerio de Sanidad, Servicios Sociales e Igualdad EC10-070. Duration: 1/1/2011-31/12/2012.

DOCTORAL THESES

Merino A. **Evaluación externa de la calidad en citología de sangre periférica. Estudio de la competencia diagnóstica de los laboratorios españoles mediante un nuevo indicador.** PhD student: Gabriela Hilda Gutiérrez Bassini.

Reverter J.C. **Malaltia tromboembòlica venosa en el pacient oncològic. Noves formes de presentació clínica i paper dels anticossos antifosfolípid en la seva patogènia.** PhD student: Carme Font Puig.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Molecular and translational oncology

TEAM INVOLVED IN: RTICC

GROUP MEMBERS

TEAM LEADER
Pere Gascón Vilaplana
(Hospital Clínic)
Tel.: 93 227 54 02
E-mail: gascon@clinic.cat

RESEARCHERS:
Juan José Grau (Hospital Clínic)
Joan Maurel (Hospital Clínic)
Begoña Mellado (Hospital Clínic)
Núria Viñolas (Hospital Clínic)
Cristina Nadal (Hospital Clínic)
Noemí Reguart (Hospital Clínic)
Montserrat Muñoz (Hospital Clínic)
Vanessa Almendro (IDIBAPS)

POST-DOCTORAL RESEARCHERS:
Anna Vidal (Fundació Clínic)

TECHNICIANS:
Eva Maria Pastor (Fundació Clínic)
Estel Enreig (Fundació Clínic)

NURSING STAFF:
Àngels Olivera (Hospital Clínic)

ADMINISTRATIVE STAFF:
Marta Digón (Hospital Clínic)

COLLABORATORS:
Elisabet Ametller (Fundació Clínic)
Susana Garcia Recio (Fundació Clínic)
Mercedes Marin (Fundació Clínic)
Laura Vidal (Hospital Clínic)
Laura Visa (Hospital Clínic, Emili Letang)
Estela Pineda (Hospital Clínic, Emili Letang)
Jordi Alcaraz (Unitat Biofísica i Bioenginyeria, UB)
Ana Arance (Hospital Clínic)
Patricia Fernandez Nogueira (UB)
Mario Mancino (Fundació Clínic)
Gemma Fuster (Fundació Clínic)
Arantzazu Zubeldia (Fundació Clínic)
Xavier Gonzalez Farre (Fundació Clínic)

STRATEGIC OBJECTIVES

The strategic objectives of the laboratory are centered in three fields:

1. A purely scientific area corresponding to the consolidation of the investigational lines and groups that work in each of them.
2. A second area corresponding to the obtainment of aids and funding for research, in order to ensure the good functioning of the laboratory.
3. A third objective is to formalize and strengthen existing international partnerships with institutions from Boston, Manchester and Oslo.

The first of the mentioned areas (scientific) comprises a qualitative and quantitative increase in scientific production. In particular, the colorectal and breast cancer stem cell lines.
Both the subject and the quality of research can attract investigators interested in a stay, in preparing a doctoral thesis, or in becoming part of the laboratory personnel. In this sense in 2011 we have incorporated two new biologists into the group. As regards the second area (funding of research), we must continue with the same criterion established years ago in order to ensure the continuity of all the research lines and facilitate the recruitment/ contracting of new personnel members.
At present, the laboratory has one FISS grant (2012), one Networks funding from the Carlos III Institute, one grant from the Spanish Association Against Cancer (2009), and several research grants from the CELLEX Foundation.

MAIN LINES OF RESEARCH

1. **Tumor chemoresistance mechanisms:**
   - **1.1** Resistance mechanisms in colorectal cancer linked to the extrinsic apoptotic pathway, in vitro and in vivo (Joan Maurel).
   - **1.2** Mechanisms of epigenetic adaptation and cellular plasticity during the adquisition of chemoresistance (Vanessa Almendros, Elisabet Ametller).
   - **1.3** Epithelial-mesenchymal transition and resistance to chemotherapy (Elisabet Ametller; Vanessa Almendro).
   - **1.4** Resistance to antitumor drugs in head and neck cancer (Principal investigator: Juan J. Grau. Collaborators: Carmen Muñoz; Miguel Caballero; Mariano Monzó).
   - **1.5** Electrochemotherapy in solid tumors. Study of electroporation. (Principal investigator: Juan J. Grau. Collaborators: Carmen Muñoz; Miguel Caballero.
   - **1.6** Implication of IGF-1R and MMP-7 in the mechanisms of resistance to chemotherapy and antibodies against tyrosine kinase receptors. Therapeutic strategies for the reversal of chemoresistance (IDIBAPS: Joan Maurel; Mercedes Marín. Germans Trias i Pujol Hospital: Albert Abad; Eva Martínez; Anna Martínez).
   - **1.7** Characterization of the role of MMP-7 in resistance to bevacizumab in colon cancer (Joan Maurel; Estela Pineda; Mercedes Marín; Cristobal Mezquita; Jovita Mezquita; Betlem Mezquita).
   - **1.8** Platform in orthotopic murine platforms characterized by the study of new drugs in pancreatic cancer (IDIBAPS: Joan Maurel; Pere Gascón; Salvador Navarro; David Fuster; Rosa Miquel. University of Barcelona: Adela Mazo. CETIR: Yolanda González; Ignasi Carrió).
   - **1.9** Mechanisms of tumor progression in breast cancer HER2+ induced by the adquisition of resistance to Trastuzumab and Lapatinib (Patricia Fernández, Vanessa Almendro).
2. **Stem cells, microenvironment and mechanisms of metastasis:**
   - **2.1** Neural control of breast cancer progression (Dra. Vanessa Almendro, Mario Manzino, Elisabet Ametller, Pere Gascón).
   - **2.2** Interaction between GPCRs and RTKs (Vanessa Almendro; Elisabet Ametller; Susana Garcia).
   - **2.3** Role of the PPT-I gene in the metastatic process (Pere Gascón; Vanessa Almendro; Elisabet Ametller).
   - **2.4** Pre-angiogenic micrometastases of circulating cells (Cristina Nadal).
   - **2.5** Mechanisms of liver metastasis in colorectal cancer (Cristina Nadal).
   - **2.6** Neuronal influence in breast cancer progession of the phenotypy of the tumoral stem cell (Gemma Fuster, Vanessa Almendro).
3. **Pharmacodynamic studies and prediction of therapeutic response:**
   - **3.1** Predictive and pharmacodynamic study of the response to neoadjuvant chemotherapy in prostate cancer. (Begoña Mellado).
   - **3.2** Mechanisms and markers of chemoresistance in prostate cancer. Therapeutic strategies for the reversal of chemoresistance. (Begoña Mellado; Mercedes Marín).

4. **Study on the determination and characterization of circulating tumor cells:**
   - **4.1** In prostate cancer (Begoña Mellado).
   - **4.2** In breast cancer (Montse Muñoz; Xavier González).
5. **Micro-RNAs in the development and prognosis of non-small cell lung cancer.** (Nuria Viñolas).
6. **Study of the tumor and stroma interactions in non-small cell lung cancer (NSCLC): role of fibroblasts associated with cancer in NSCLC** (N. Reguart; J. Alcaraz; Marta Puig).
7. **Effect of anomalous hardening of tumor tissue in NSCLC** (J. Alcaraz; N. Reguart; Marta Puig).
8. **Study of sensitivity to trastuzumab in relation to the expression of topoisomerase I** (Xavi González; Montse Muñoz; Ana Arance).
9. **Characterization of the metastatic profile of malignant melanoma in circulating cells and primary tumors** (Ana Arance; Laura Visa).

PUBLICATIONS

ORIGINALS
I.F.: 114.67

1 Gravalos C.; Salut A.; Garcia-Giron C.; Garcia-Carbonero R.; Leon, A.I.; Sevilla I.; Maurel J.; Esteban B.; Garcia-Rico E.; Murias A.; Cortes-Funes H. **A randomized phase II study to compare oxaliplatin plus 5-fluorouracil and leucovorin (FOLFOX4) versus oxaliplatin plus raltitrexed (TOMOX) as first-line chemotherapy for advanced colorectal cancer.** CLINICAL & TRANSLATIONAL ONCOLOGY. 14(8):606-12. **I.F.: 1.33.**

2 Bilal E.; Vassallo K.; Toppmeyer D.; Barnard N.; Rye I.H.; Almendro V.; Russnes H.; Borresen-Dale A.L.; Levine A.J.; Bhanot G.; Ganesan S. **Amplified Loci on Chromosomes 8 and 17 Predict Early Relapse in ER-Positive Breast Cancers.** PLOS ONE. 7(6):e38575. **I.F.: 4.09.**

3 Calon A.; Espinet E.; Palomo-Ponce S.; Tauriello D.V.; Iglesias M.; Cespedes M.V.; Sevillano M.; Nadal C.; Jung P.; Zhang X.H.; Byrom D.; Riera A.; Rossell D.; Mangues R.; Massague J.; Sancho E.; Batlle E. **Dependency of colorectal cancer on a TGF-β-driven program in stromal cells for metastasis initiation.** CANCER CELL. 22(5):571-84. **I.F.: 26.57.**

4 Rosell R.; Carcereny E.; Gervais R.; Vergnenegre A.; Massuti B.; Felip E.; Palmero R.; Garcia-Gomez R.; Pallares C.; Sanchez J.M.; Porta R.; Cobo M.; Garrido P.; Longo F.; Moran T.; Insa A.; De Marinis F.; Corre R.; Bover I.; Illiano A.; Dansin E.; De Castro J.; Milella M.; Reguart N.; Altavilla G.; Jimenez U.; Provencio M.; Moreno M.A.; Terrasa J.; Munoz-Langa J.; Valdivia J.; Isla D.; Domine M.; Molinier O.; Mazieres J.; Baize N.; Garcia-Campelo R.; Robinet G.; Rodriguez-Abreu D.; Lopez-Vivanco G.; Gebbia V.; Ferrera-Delgado L.; Bombaron P.; Bernabe R.; Bearz A.; Artal A.; Cortesi E.; Rolfo C.; Sanchez-Ronco M.; Drozdowskyj A.; Queralt C.; De Aguirre I.; Ramirez J.L.; Sanchez J.J.; Molina M.A.; Taron M.; Paz-Ares L. **Erlotinib versus standard chemotherapy as first-line treatment for European patients with advanced EGFR mutation-positive non-small-cell lung cancer (EURTAC): a multicentre, open-label, randomised phase 3 trial.** LANCET ONCOLOGY. 13 (3): 239-246. **I.F.: 22.59.**

5 Marin-Aguilera M.; Codony-Servat J.; Kalko S.G.; Fernandez P.L.; Bermudo R.; Buxo E.; Ribal M.J.; Gascon P.; Mellado B. **Identification of Docetaxel Resistance Genes in Castration-Resistant Prostate Cancer.** MOLECULAR CANCER THERAPEUTICS. 11 (2): 329-339. **I.F.: 5.23.**

6 Acerbi I.; Luque T.; Gimenez A.; Puig M.; Reguart N.; Farre R.; Navajas D.; Alcaraz J. **Integrin-Specific Mechanoresponses to Compression and Extension Probed by Cylindrical Flat-Ended AFM Tips in Lung Cells.** PLOS ONE. 7(2):e32261. **I.F.: 4.09.**

7 Sola-Valls N.; Gaba L.; Munoz E.; Mellado B.; Ribalta T.; Saiz A.; Graus F. **Paraneoplastic cerebellar degeneration associated with thymic germinoma.** JOURNAL OF THE NEUROLOGICAL SCIENCES. 320: 153-155. **I.F.: 2.35.**

8 Duch J.; Fuster D.; Munoz M.; Fernandez P.L.; Paredes P.; Fontanillas M.; Skaltsa K.; Domenech B.; Lomena F.; Pons F. **PET/CT with [18F] fluorodeoxyglucose in the assessment of metabolic response to neoadjuvant chemotherapy in locally advanced breast cancer.** QUARTERLY JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 56(3):291-8. **I.F.: 2.26.**

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	131.60	15	10	2
2011	236.85	31	19	6
2012	114.67	18	16	2

9 Hitt R.; Irigoyen A.; Cortes-Funes H.; Grau J.J.; Garcia-Saenz J.A.; Cruz-Hernandez J.J. **Phase II study of the combination of cetuximab and weekly paclitaxel in the first-line treatment of patients with recurrent and/or metastatic squamous cell carcinoma of head and neck.** ANNALS OF ONCOLOGY. 23 (4): 1016-1022. **I.F.: 6.42.**

10 Pera M.; Gallego R.; Montagut C.; Martin-Richard M.; Iglesias M.; Conill C.; Reig A.; Balague C.; Petriz L.; Momblan D.; Bellmunt J.; Maurel J. **Phase II trial of preoperative chemoradiotherapy with oxaliplatin, cisplatin, and 5-FU in locally advanced esophageal and gastric cancer.** ANNALS OF ONCOLOGY. 23 (3): 664. **I.F.: 6.42.**

11 Aapro M.; Osterborg A.; Gascon P.; Ludwig H.; Beguin Y. **Prevalence and management of cancer-related anaemia, iron deficiency and the specific role of i.v. iron.** ANNALS OF ONCOLOGY. 23(8):1954-62. **I.F.: 6.42.**

12 Gomez-Caro A.; Boada M.; Reguart N.; Vinolas N.; Casas F.; Molins L. **Sleeve lobectomy after induction chemoradiotherapy.** EUROPEAN JOURNAL OF CARDIOTHORACIC SURGERY. 41 (5): 1052-1058. **I.F.: 2.55.**

13 Capdevila J.; Iglesias L.; Halperin I.; Segura A.; Martinez-Trufero J.; Vaz M.A.; Corral J.; Obiols G.; Grande E.; Grau J.J.; Tabernero J. **Sorafenib in metastatic thyroid cancer.** ENDOCRINE-RELATED CANCER. 19 (2): 209-216. **I.F.: 4.36.**

14 Mayordomo C.; Garcia-Recio S.; Ametller E.; Fernandez-Nogueira P.; Pastor-Arroyo E.M.; Vinyals L.; Casas I.; Gaascon P.; Almendro V. **Targeting of substance P induces cancer cell death and decreases the steady state of EGFR and Her2.** JOURNAL OF CELLULAR PHYSIOLOGY. 227 (4): 1358-1366. **I.F.: 3.87.**

15 Aapro M.; Molassiotis A.; Dicato M.; Pelaez I.; Rodriguez-Lescure A.; Pastorelli D.; Ma L.; Burke T.; Gu A.; Gascon P.; Roila F.; PEER investigators. **The effect of guideline-consistent antiemetic therapy on chemotherapy-induced nausea and vomiting (CINV): the Pan European Emesis Registry (PEER).** ANNALS OF ONCOLOGY. 23(8):1986-92. **I.F.: 6.42.**

16 Massuti B.; Cobo M.; Camps C.; Domine M.; Provencio M.; Alberola V.; Vinolas N.; Rosell R.; Taron M.; Gutierrez-Calderon V.; Lardelli P.; Alfaro V.; Nieto A.; Isla D. **Trabectedin in patients with advanced non-small-cell lung cancer (NSCLC) with XPG and/or ERCC1 overexpression and BRCA1 underexpression and pretreated with platinum.** LUNG CANCER. 76 (3): 354-361. **I.F.: 3.43.**

17 Canon J.L.; Vansteenkiste J.; Hedenus M.; Gascon P.; Bokemeyer C.; Ludwig H.; Vermorken J.; Legg J.; Pujol B.; Bridges K. **Transfusion risk in cancer patients with chemotherapy-induced anemia when initiating darbepoetin alfa therapy at a baseline hemoglobin level of <9 g/dL versus 9 to <10 g/dL versus ≥ 10 g/dL: an exploratory analysis of a phase 3 trial.** MEDICAL ONCOLOGY. 29(3):2291-9. **I.F.: 2.14.**

18 Casado E.; Moreno Garcia V.; Sanchez J.J.; Gomez del Pulgar M.T.; Feliu J.; Maurel J.; Castelo B.; Moreno Rubio J.; Lopez R.A.B.; Garcia-Cabezas M.A.; Burgos E.; Dde Castro J.; Belda-Iniesta C.; Lopez-Gomez M.; Gomez-Raposo C.; Zambrana F.; Sereno M.; Fernandez-Martos C.; Vazquez P.; Lacal J.C.; Gonzalez-Baron M.; Cejas P. **Upregulation of Trefoil Factor 3 (TFF3) After Rectal Cancer Chemoradiotherapy Is an Adverse Prognostic Factor and a Potential Therapeutic Target.** INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS. 84(5):1151-8. **I.F.: 4.10.**

REVIEWS
I.F.: 10.98

1 Molina R.; Escudero J.M.; Munoz M.; Auge J.M.; Filella X. **Circulating levels of HER-2/neu oncoprotein in breast cancer.** CLINICAL CHEMISTRY AND LABORATORY MEDICINE. 50 (1): 5-21. **I.F.: 2.15.**

2 Marusyk A.; Almendro V.; Polyak K. **Intra-tumour heterogeneity: a looking glass for cancer?** NATURE REVIEWS CARDIOLOGY. 12 (5): 323-334. **I.F.: 8.83.**

CLINICAL GUIDELINES
I.F.: 4.41

1 Climent M.A.; Piulats J.M.; Sanchez-Hernandez A.; Arranz J.A.; Cassinello J.; Garcia-Donas J.; Gonzalez del Alba A.; Leon-Mateos L.; Mellado B.; Mendez-Vidal M.J.; Perez-Valderrama B. **Recommendations from the Spanish Oncology Genitourinary Group for the treatment of patients with metastatic castration-resistant prostate cancer.** CRITICAL REVIEWS IN ONCOLOGY HEMATOLOGY. 83(3):341-52. **I.F.: 4.41.**

2 Munoz Langa J.; Gascon P.; De Castro J. **SEOM clinical guidelines for myeloid growth factors.** CLINICAL & TRANSLATIONAL ONCOLOGY. 14 (7): 491-498. **I.F.: 1.33.**

MULTICENTRICS
I.F.: 53.30

1 Agnelli G.; George D.J.; Kakkar A.K.; Fisher W.; Lassen M.R.; Mismetti P.; Mouret P.; Chaudhari U.; Lawson F.; Turpie A.G.; SAVE-ONCO Investigators. **Semuloparin for thromboprophylaxis in patients receiving chemotherapy for cancer.** NEW ENGLAND JOURNAL OF MEDICINE. 366(7):601-9. **I.F.: 53.30.**

GRANTS FOR RESEARCH IN PROGRESS

Reguart N. **Contribución de los fibroblastos asociados a tumores (CAFs) al cáncer de pulmón estudiada con modelos de cultivo celular tridimensionales.** Sponsored by: Asociación Española Contra el Cáncer (AECC) 10/103. Duration: 22/2/2010-31/3/2012.

Gascon P. **Red tematica de investigación cooperativa de cancer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD07/0020/2014. Duration: 23/2/2009-31/12/2013.

Reguart N. **Papel de los fibroblastos asociados a tumores (CAFS) en el carcinoma broncogénico de pulmón: mecanismos de interacción de modelos de cultivo celular 3D.** Sponsored by: Instituto de Salud Carlos III (ISCIII) PI09/1377. Duration: 1/1/2010-30/6/2013.

Maurel J. **Papel de MMP-7 en la transactivación IGF-1R-EGFR y la resistencia intrínseca a los inhibidores de Epidermal Growth Factor Receptor (EGFR) en cáncer colorectal.** Sponsored by: Fundación Mútua Madrileña AP75002010. Duration: 17/9/2010-31/12/2012.

Almendro V. **Plasticidad epigenítica durante la adquisición de quimioresistencia en cancer de colon.** Institute of Health Carlos III. FISS PI11/01231. Duration: 2012-2014.

DOCTORAL THESES

Almedro V. **Cooperación oncogénica entre la citoquina pro-inflamatoria SP y el receptor tirosina quinasa ERBB-2/HER2.** PhD student: Susana Garcia Recio.

Reverter J.C. Gascón P. **Malaltia tromboembòlica venosa en el pacient oncològic.** PhD student: Carme Font.

AREA 5

ONCOLOGY AND HAEMATOLOGY

Cell proliferation and signaling

TEAM INVOLVED IN:

GROUP MEMBERS

TEAM LEADER
Oriol Bachs (Universitat de Barcelona)
Tel.: 93 403 52 86
E-mail: obachs@ub.edu

RESEARCHERS:
Neus Agell (UB)
Rosa Aligué (UB)
Carles Enrich (UB)
Albert Pol (ICREA-IDIBAPS)
Francesc Tebar (UB)
Montserrat Jaumot (UB)
Maria Jesús Pujol (UB)

POST- RESEARCHERS:
Sandra Vilà de Muga (UB)
Edurne Gallastegui (UB)
Neus Serrat (IDIBAPS)
Carles Rentero (IDIBAPS)
Ignasi Salaet (UB)
Miriam Vidal (UB)

PRE-DOCTORAL RESEARCHERS:
Raffaella Pippa (UB)
Marta Sanchez (UB)
Serena Orlando (IDIBAPS)
Albert Herms (IDIBAPS)
Meritxell Reverter (UB)
Alba Llopis (UB)
Carles Barceló (UB)
Natalia de Olano (UB)
Anna Alvarez-Guaita (UB)
Atilla Biçer (UB)
Eugenia Cisneros (UB)
Amaia Ercilla (UB)
Mariona Gelabert (UB)
Alba Gómez (UB)
Noelia Paco (UB)
Anna Perearnau (UB)
David Soriano (UB)
Gemma Ventura (IDIBAPS)
Martina Guerrero (IDIBAPS)
Ramon Marques(UB)
Tula Yance (UB)

TECHNICIANS:
Sonia Brun (UB)
Alba Fajardo (UB)
María Molinos (UB)
Eulalia Rius (UB)
Sara Abelló(UB)
David Gimenez (UB)

COLLABORATORS:
Marta Bosch (IDIBAPS)
Teresa Royo (IDIBAPS)

STRATEGIC OBJECTIVES

The general goal of the group is the analysis of the mechanisms involved in cell cycle progression and signaling in health and disease.

MAIN LINES OF RESEARCH

1. **Cell proliferation and Cancer:** The objective of this line of research is the analysis of the mechanisms involved in cell cycle regulation and its alterations during tumorigenesis:
   - Role of the CKI p27(Kip1) on the regulation of transcription, splicing and translation of genes involved in tumorigenesis.
   - Cell cycle regulation by protein acetylation.
   - Role of calmodulin in nuclear functions.

2. **Cell cycle:** signal transduction and checkpoints: The main topics in this research line are the analysis of: the regulation of the functionality of K-Ras by Calmodulin-binding and by phosphorylation; the regulation of p21CIP1 localization and the relevance of its binding to calmodulin and its phosphorylation; and, the DNA replication checkpoint in not transformed versus transformed cell lines.

3. **Signaling and regulation of the cell cycle:** In eukaryotic organisms, the response to stress insults is through the activation of the MAP kinases pathway, Progression through the cell cycle is dependent on external stimuli and failure to correctly integrate the induced signals can lead to accumulation of genetic damage contributing to cancer development. Understanding how signaling networks and the cellular responses are regulated is one of the most crucial objectives in biomedical research.The aim of this research focuses on identifying the molecular mechanisms by which cell cycle is regulated by stress-activated protein kinases.

4. **Endocytosis, membrane trafficking and signaling:** This line of research includes the following activities:
   - Study of endocytosis and membrane trafficking in polarized cells, such as hepatocytes and in nonpolarized cells.
   - Study the role of calmodulin in the regulation of trafficking and signalling of EGFR.
   - Study the role of Annexin A6 in the transport of caveolin, the formation of caveolae, homeostasis of cholesterol and signaling of Ras/MAPK.

5. **Lipid trafficking and storage:** The aim of our project is to characterize in health and disease, the cellular processes regulated or deregulated by the accumulation of lipids within cells. With a special attention to the cellular cost of accumulation of cholesterol in the organelles and the role of the caveolin protein in the regulation of these mechanisms.

PUBLICATIONS

ORIGINALS
I.F.: 66.55

1 Navarro-Lérida I.; Sánchez-Perales S.; Calvo M.; Rentero C.; Zheng Y.; Enrich C.; Del Pozo M.A. **A palmitoylation switch mechanism regulates Rac1 function and membrane organization.** EMBO J. 31(3):534-51. **I.F.: 9.20.**

2 Fernández-Rojo M.A.; Restall C.; Ferguson C.; Martel N.; Martin S.; Bosch M.; Kassan A.; Leong G.M.; Martin S.D.; McGee S.L.; Muscat G.E.; Anderson R.L.; Enrich C.; Pol A.; Parton R.G. **Caveolin-1 orchestrates the balance between glucose and lipid-dependent energy metabolism: implications forliver regeneration.** HEPATOLOGY. 55(5):1574-84. **I.F.: 11.66.**

3 Zanuy M.; Ramos-Montoya A.; Villacañas O.; Canela N.; Miranda A.; Aguilar E.; Agell N.; Bachs O.; Rubio-Martinez J.; Pujol M.D.; Lee W.N.; Marin S.; Cascante M. **Cyclin-dependent kinases 4 and 6 control tumor progression and direct glucose oxidation in the pentose cycle.** METABOLOMICS. 8(3):454-464. **I.F.: 4.50.**

4 Pérez-Luna M.; Aguasca M.; Perearnau A.; Serratosa J.; Martínez-Balbas M.; Pujol M.j.; Bachs O. **PCAF regulates the stability of the transcriptional regulator and cyclin-dependent kinase inhibitor p27 Kip1.** NUCLEIC ACIDS RES. 40(14):6520-33. **I.F.: 8.03.**

5 Pippa R.; Espinosa L.; Gundem G.; García-Escudero R.; Dominguez A.; Orlando S.; Gallastegui E.; Saiz C.; Besson A.; Pujol M.J.; López-Bigas N.; Paramio J.M.; Bigas A.; Bachs O. **p27Kip1 represses transcription by direct interaction with p130/**

E2F4 at the promoters of target genes. ONCOGENE. 31(38):4207-20. **I.F.: 6.37.**

6 De Olano N.; Koo C.Y.; Monteiro L.J.; Pinto P.H.; Gomes A.R.; Aligue R.; Lam E.W. **The p38 MAPK-MK2 axis regulates E2F1 and FOXM1 expression after epirubicin treatment.** MOL CANCER RES. 10(9):1189-202. **I.F.: 4.29.**

7 Llopis A.; Salvador N.; Ercilla A.; Guaita-Esteruelas S.; Barrantes Idel B.; Gupta J.; Gaestel M.; Davis R.J.; Nebreda A.R.; Agell N. **The stress-activated protein kinases p38α/β and JNK1/2 cooperate with Chk1 to inhibit mitotic entry upon DNAreplication arrest.** CELL CYCLE. 11(19):3627-37. **I.F.: 5.36.**

8 Pujols L.; Fernández-Bertolín L.; Fuentes-Prado M.; Alobid I.; Roca-Ferrer J.; Agell N.; Mullol J.; Picado C. **Proteasome Inhibition Reduces Proliferation, Collagen Expression, and Inflammatory Cytokine Production in Nasal Mucosa and Polyp Fibroblasts.** JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS. 343(1):184-97. **I.F.: 3.83.**

9 Duran J.M.; Campelo F.; Van Galen J.; Sachsenheimer T.; Sot J.; Egorov M.V.; Rentero C.; Enrich C.; Polishchuk R.S.; Goñi F.M.; Brügger B.; Wieland F.; Malhotra V. **Sphingomyelin organization is required for vesicle biogenesis at the Golgi complex.** EMBO J. 31(24):4535-46. **I.F.: 9.20.**

10 Ferrándiz N.; Caraballo J.M.; García-Gutierrez L.; Devgan V.; Rodriguez-Paredes M.; Lafita M.C.; Bretones G.; Quintanilla A.; Muñoz-Alonso M.J.; Blanco R.; Reyes J.C.; Agell N.; Delgado M.D.; Dotto G.P.; León J. **p21 as a transcriptional co-repressor of S-phase and mitotic control genes.** PLOS ONE. 7(5):e37759. **I.F.: 4.09.**

GRANTS FOR RESEARCH IN PROGRESS

Aligue R. **La MAP Quinasa p38 y la Quinasa MAPKAP en la señalizacion de respuesta a estrés y el control del ciclo celular en Schizosaccharomyces pombe.** Sponsored by: MICINN, BFU2009-10778, Duration: 1/1/2010-31/12/2012.

Bachs O. **Red temática de investigación cooperativa de cáncer.** Sponsored by: Instituto de Salud Carlos III (ISCIII) RD06/0020/0010. Duration: 1/1/2007-31/12/2013.

Bachs O. **Papel del Regulador del ciclo celular p27(Kip1) en la oncogenesis.** Sponsored by: MICINN. SAF: 2009-07769 Duration: 1/1/2010-31/12/2012.

Bachs O. **Proteored:** Sponsored by: Genoma España Duration: 1/1/2006-31/12/2013.

Pol A. **Mecanismo de la secreción de proteínas y de la organización de los compartimentos celulares implicados.** Sponsored by: Ministerio de Economía y Competitividad CSD2009-00016. Duration: 17/12/2009-16/12/2014.

Pol A. **Consecuencias metabólicas, celulares y sistémicas de mutaciones en las caveolinas y NPC1 humanas.** Sponsored by: Ministerio de Economía y Competitividad BFU2011-23745. Duration: 1/1/2012-31/12/2014.

Pol A. **Hepatic and brain mitochondrial cholesterol/glycosphingolipids and altered metabolism contribute to the pathology of Niemann Pick type C disease and caveolinopathies.** Sponsored by: Marató TV3 100531. Duration: 3/2/2011-29/5/2014

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	41.72	7	7	0
2011	50.95	10	9	0
2012	66.55	10	10	0

Enrich C. **Ras/ MAPK signalling regulates cholesterol efflux.** Sponsored by: Marató TV3 81110. Duration: 19/1/2009-31/7/2012

Tebar F. **Función de PKCdelta y calmodulina en la regulación de la dinámica del citoesqueleto de actina y del tráfico intracelular del factor de crecimiento epidérmico.** Sponsored by: MICINN BFU2009-13526/BMC. Duration:1/1 2010-31/12/2012

DOCTORAL THESES

Aligué R.M. **Caracterización funcional de la quinasa SRK1 en la respuesta a latrunculina b y de la quinasa SSP1 en el crecimiento bipolar en schizosaccharomyces pombe.** PhD student: Alba Gomez Hierro.

Aligué R.M. **Mecanismos moleculares de la respuesta a estrés en schizosaccharomyces pombe: papel de las mapkap quinasas CMK2 y SRK1.** PhD student: Marta Sánchez Marinas.

Bachs O. **La HDAC3 regula l'estabilitat de la ciclina a.** PhD student: Miriam Vidal Laliena.

Enrich C. **Paper de l'annexina a6 en la remodelació de la membrana plasmàtica, en el tràfic i en la senyalització de l'egfr i ras.** PhD student: Sandra Vilà De Muga.

Pujol M.J. **Anàlisi funcional de la interacció entra la proteïna P27KIP1 i l'acetilasa pcaf.** PhD student: Maria Pérez Luna.

TRANSVERSAL RESEARCH GROUPS

TRANSVERSAL GROUP FOR RESEARCH IN PRIMARY CARE 328

RESEARCH IN NURSING 331

CLINICAL PHARMACOLOGY 334

TRANSVERSAL RESEARCH GROUPS

Transversal group for research in primary care

GROUP MEMBERS

TEAM LEADER
Antoni Sisó Almirall (EAP Les Corts)
Tel.: 93 227 99 24
E-mail: asiso@clinic.cat

RESEARCHERS:
Lluisa Benito Serrano (EAP Les Corts)
Marta Catalán Adell (EAP Casanova)
Zoe Herreras Pérez (EAP Comte Borrell)
Imma Garrell Lluís (EAP Comte Borrell)
Joan Gené Badia (EAP Casanova)
Lluís González de Paz (EAP Les Corts)
Imma Grau Corral (Hospital Clínic)
Pilar Navarrete Duran (EAP Comte Borrell)
Marta Navarro González (EAP Comte Borrell)
Ignacio Menacho Pascual (EAP Les Corts)
Jacinto Ortiz Molina (EAP Les Corts)
Montserrat Pinyol Martínez (EAP Les Corts)
Marina Rovira (Farmacia)
Antoni Salvà Riquer (Pediatria - Casanova)
Núria Sánchez Ruano (EAP Comte Borrell)
Elisenda Sant Arderiu (EAP Casanova)
Laura Sebastián Montal (CAPSE)
Ethel Sequeira Aymar (EAP Casanova)
Josep Miquel Sotoca Momblona (Farmacia)

PRE-DOCTORAL RESEARCHERS:
Emma Marianela Morales Espinoza (AP – Consorci Hospital Terrassa)

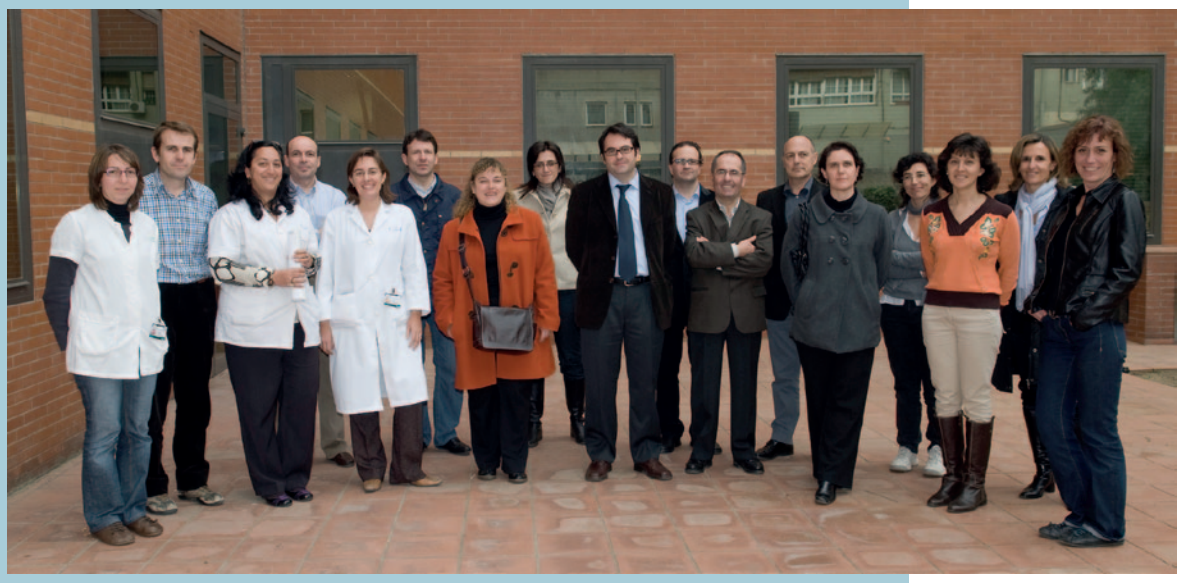
NURSING STAFF:
Narly Benachi Sandoval (EAP Casanova)
Noemí García (EAP Comte Borrell)
Rosa Segarra (EAP Casanova)
Esther Blat (EAP Les Corts)
Elena Mañes (EAP Casanova)

STATISTICIAN:
Belchin Adriyanov Kostov (IDIBAPS)

COLLABORATORS:
Sílvia Canivell Fusté (IDIBAPS)
Jaume Benavent Àreu (Institut Català de la Salut)

STRATEGIC OBJECTIVES

Primary care is the point of patient entry to the healthcare system, and the primary care centers are where most of the population health problems are dealt with. It is in this setting where the relationship between the patient and reference primary care physician and nurse is a key factor in preventing and healing diseases, and in promoting healthy habits. In the research context, the multidisciplinary and transverse nature of the activities of the primary care professional favors a biological, psychological and social approach to the patients and their illnesses, in both the consulting office and in the home. The integral approach to the individual and longitudinal care over the full course of the life of the patient makes it possible to conduct proprietary and/or collaborative studies targeted at knowledge of the characteristics of the population, people and their illnesses. Primary care aims to carry out research inherent to its



nature, integrating within the existing investigational networks and groups, and working in a coordinated manner with other consolidated research teams from different perspectives:

- Conduction of population-based studies (both descriptive and evaluating interventions and follow-up), in an accessible and well defined population of subjects, taking advantage of the computer-based filing of clinical data.
- Conduction of research into healthcare results or outcomes.
- Description of the natural history of the patient and disease from a biological, psychological and social perspective.
- Conduction of studies of risk factors and preventive medicine.
- Analysis of the morbidity and mortality of the most prevalent disorders.
- Development of collaborative studies with the administration and research entities or groups allowing the implementation of transversal research.

In the year 2012, Research in Primary Care has been organized around the CAPSE Research Unit, integrated by Dr. Antoni Sisó (Director of the Unit), Dr. Laura Sebastián, Lluís González, Elena Mañes, Narly Benachi and Belchin Kostov.

MAIN LINES OF RESEARCH

- Healthcare continuity and management of chronic diseases.
- Use of healthcare services.
- The fragility – geriatrics – dependency – home care axis.
- Use of medicines.
- Primary care and autoimmunity.
- Atherogenesis, risk factors and cardiovascular diseases.
- Chronic pain.
- Mental health, smoking and other addictions.
- Respiratory diseases.
- Digestive and liver diseases.
- HIV infection – AIDS and other infectious diseases.
- 2.0. Health.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	49.85	7	4	2
2011	23.06	5	2	3
2012	21.11	8	2	4

ORIGINALS
I.F.: 21.11

1 Brito-Zeron P.; Retamozo S.; Gandia M.; Akasbi M.; Perez-De-Lis M.; Diaz-Lagares C.; Bosch X.; Bove A.; Perez-Alvarez R.; Soto-Cardenas M.J.; Siso A.; Ramos-Casals M. **Monoclonal gammopathy related to Sjogren syndrome: A key marker of disease prognosis and outcomes.** JOURNAL OF AUTOIMMUNITY. 39 (1-2): 43-48 Sp. Iss. **I.F.: 7.37.**

2 Gonzalez-de Paz L.; Kostov B.; Siso-Almirall A.; Zabalegui-Yarnoz A. **A Rasch analysis of nurses' ethical sensitivity to the norms of the code of conduct.** JOURNAL OF CLINICAL NURSING. 21: 2747-2760. **I.F.: 1.12.**

3 Retamozo S.; Akasbi M.; Brito-Zeron P.; Bosch X.; Bove A.; Perez-De-Lis M.; Jimenez I.; Soto-Cardenas MJ.; Gandia M.; Diaz-Lagares C.; Vinas O.; Siso A.; Perez-Alvarez R.; Yague J.; Ramos-Casals M. **Anti-Ro52 antibody testing influences the classification and clinical characterisation of primary Sjogren's syndrome.** CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 30: 686-692. **I.F.: 2.15.**

4 Akasbi M.; Berenguer J.; Saiz A.; Brito-Zeron P.; Perez-De-Lis M.; Bove A.; Diaz-Lagares C.; Retamozo S.; Blanco Y.; Perez-Alvarez R.; Bosch X.; Siso A.; Graus F.; Ramos-Casals M. **White matter abnormalities in primary Sjogren syndrome.** QJM-AN INTERNATIONAL JOURNAL OF MEDICINE. 105 (5): 433-443. **I.F.: 2.32.**

Transversal group for research in primary care

5 Gassó P.; Mas S.; Álvarez S.; Ortiz J.; Sotoca J.M.; Francino A.; Carne X.; Lafuente A. **A common variant of the ABO gene protects against hypertension in a Spanish population.** HYPERTENS RES. 35(6):592-6. **I.F.: 2.58.**

6 Masanes F.; Culla A.; Navarro-Gonzalez M.; Navarro-Lopez M.; Sacanella E.; Torres B.; Lopez-Soto A. **Prevalence of sarcopenia in healthy community-dwelling elderly in an urban area of Barcelona (Spain).** J NUTR HEALTH AGING. 16(2):184-7. **I.F.: 2.69.**

7 Gené Badia J.; Borràs Santos A.; Contel Segura J.C.; Ascaso Terén C.; González Ortega M.; Gallo De Puelles P.; Equipo de Investigación HC>65. **Factors associated with hospitalization in a cohort of elderly patients included in a home care program.** MED CLIN-BARCELONA. 139(11): 473-8. **I.F.: 1.38.**

8 Gené-Badia J.; Gallo P.; Hernández-Quevedo C.; García-Armesto S. **Spanish health care cuts: penny wise and pound foolish?** HEALTH POLICY. 106(1):23-8. **I.F.: 1.51.**

REVIEWS
I.F.: 22.48

1 Ramos-Casals M.; Brito-Zeron P.; Siso-Almirall A.; Bosch X.; Tzioufas A.G. **Topical and systemic medications for the treatment of primary Sjogren's syndrome.** NATURE REVIEWS RHEUMATOLOGY. 8 (7): 399-411. **I.F.: 8.39.**

2 Ramos-Casals M.; Brito-Zeron P.; Siso-Almirall A.; Bosch X. **PRACTICE POINTER Primary Sjogren syndrome.** BRITISH MEDICAL JOURNAL. 344:e3821. **I.F.: 14.09.**

EDITORIALS
I.F.: 0.63

1 Sisó-Almirall A. **Clinical Inertia in Osteoarthritis.** ATENCIÓN PRIMARIA. 44 (2): 72-73. **I.F.: 0.63.**

MULTICENTRICS
I.F.: 0.63

1 Aguado A.; Rodríguez D.; Flor F.; Sicras A.; Ruiz A.; Prados-Torres A.; ACG-España. **Distribution of primary care expenditure according to sex and age group: a retrospective analysis.** ATEN PRIM. 44(3):145-52. **I.F.: 0.63.**

GRANTS FOR RESEARCH IN PROGRESS

Sisó A. **Screening programme for abdominal aortic aneurysm by hand-held-ultrasonography in primary health care.** Sponsored by: Medtronic Vascular Inc.

Rodríguez E.; Navarro M. **Aplicación de los criterios STOPP-START en Atención Primaria: repercusiones socio-sanitarias y económicas derivadas.** Sponsored by: Beca Fi Residència MIR - CAPSE.

DOCTORAL THESES

Ramos M.; Sisó A. **Afección del sistema nervioso central en el síndrome de sjögren primario: prevalencia y significado clínico.** PhD student: Miriam Akasbi.

Research in nursing

GROUP MEMBERS

TEAM LEADER
Adelaida Zabalegui (Hospital Clínic)
Fax: 93 227 17 77
E-mail: azabaleg@clinic.cat
Tel.: 93 227 54 24

COLLABORATORS:
Ana Alonso (Hospital Clínic)
Montserrat Amigó (Hospital Clínic)
Angela Arranz (Hospital Clínic)
Mercè Comes (Hospital Clínic)
Lourdes Corominas (Hospital Clínic)
Marta Farre (Hospital Clínic)
Lluís González (Hospital Clínic)
Teresa Peix (Hospital Clínic)
Marta Quintanela (Hospital Clínic)
Carlos Reguera (Hospital Clínic)
Ester Risco (Hospital Clínic)
Dolors Robles (Hospital Clínic)
Victoria Ruiz (Hospital Clínic)
Carmen Sánchez (Hospital Clínic)

TRANSVERSAL RESEARCH GROUPS

Research in nursing

STRATEGIC OBJECTIVES

Research in nursing is essential for responding to the healing demands of the current healthcare system. Its complexity in the hospital setting is derived from the associated increase in patient severity upon admission, the reduction in hospital stay, the incorporation of new technologies, the aging of the population, patient requests for information, social change, and the global crisis.

MAIN LINES OF RESEARCH

Internationally, research activity in nursing is improving thanks to the definition of priorities, the identification of groups and the focusing of their research lines, increased funding, and integration of the results obtained in the clinical practice setting. Accordingly, an increase is being observed in the number of publications in international journals, documented in the Cumulative Index to Nursing and Allied Health Literature (CINAH) and the Medline database, affording credibility and acknowledgement to our research activities. This improved scientific production has been achieved through the competitive funding of projects and the development of research training programs on the part of the professional and government organizations, and the generalized application of anonymous and rigorous peer review of the results of the investigations made.

Research in nursing presents differential paradigmatic elements with respect to other types of research in the health sciences, such as its particular patient focus (rather than disease-based focus), and the study of physiological, psychological, sociocultural and/or spiritual aspects of the individual, with a view to improving healing. The effort to secure this unique approach has resulted in the definition of priority research areas in nursing, which in this country comprise the following: evaluation of the efficacy of nursing interventions; the promotion of health and the development of strategies designed to implicate patients in their own healing; healing based on evidence; the implementation and evaluation of results in clinical practice; and measurement of the quality of nursing care.

In Spain, research in nursing is still an emergent activity. Its consolidation will be facilitated by the recent introduction of degree programs, masters and doctorate courses specifically targeted at nursing, with the participation of professionals accredited for teaching in research. For the first time, nurses following a doctorate program will be able to access extensive and rigorous training in the scientific method, to ensure the quality of their scientific production in the field of nursing care. Our present challenge is application to the healthcare setting: nurses should understand research as a driving force in their professional development and in the improvement of their care of patients and their families – incorporating it into their daily clinical practice.

We are aware of the enormous task awaiting us. In this context, we are inspired by the brilliant trajectory of research in nursing in the United States or Europe (United kingdom, Sweden, Finland, the Netherlands, etc.) – countries where nursing has been capable of attracting financial support, gaining access to mentors, and consolidating its lines of research. Nursing in the Clinic Hospital can lead the process of incorporating research to clinical practice, based on a solid institutional reference and a strongly-rooted scientific culture. The recent creation of the Nursing Research Committee aims to visualize and reinforce this activity. We already have competitive projects financed by national and European agencies, and have ambitious plans for improvement that should result in an increase in the number and relevance of our publications. In sum, our hospital has the motivation and scientific leadership needed to face the challenge of research in nursing.

PUBLICATIONS

ORIGINALS
I.F.: 15.72

1 Verbeek H.; Meyer G.; Leino-Kilpi H.; Zabalegui A.; Hallberg I.R.; Saks K.; Soto M.E.; Challis D.; Sauerland D.; Hamers J.P.; RightTimePlaceCare Consortium. **A European study investigating patterns of transition from home care towards institutional dementia care: the protocol of a RightTimePlaceCare study.** BMC PUBLIC HEALTH. 12:68. **I.F.: 2.00.**

2 Burgos F.; Disdier C.; De Santamaria E.L.; Galdiz B.; Roger N.; Rivera M.L.; Hervàs R.; Durán-Tauleria E.; Garcia-Aymerich J.; Roca J.; e-Spir@p Group. **Telemedicine enhances quality of forced spirometry in primary care.** EUR RESPIR J. 39(6):1313-8. **I.F.: 5.89.**

3 Nogué S.; Amigó M.; Uría E.; Fernández F.; Velasco V. **Chemical decontamination in the emergency department.** EMERGENCIAS. 24(3):203-207. **I.F.: 2.49.**

4 Rosa A.R.; González-Ortega I.; González-Pinto A.; Echeburúa E.; Comes M.; Martínez-Àran A.; Ugarte A.; Fernández M.; Vieta E. **One-year psychosocial functioning in patients in the early vs. late stage of bipolar disorder.** ACTA PSYCHIAT SCAND. 125(4):335-41. **I.F.: 4.22.**

5 González-de Paz L.; Kostov B.; Sisó-Almirall A.; Zabalegui-Yárnoz A. **A Rasch analysis of nurses' ethical sensitivity to the norms of the code of conduct.** J CLIN NURS. 21(19-20):2747-60. **I.F.: 1.12.**

GRANTS FOR RESEARCH IN PROGRESS

Zabalegui A. **Improving health services for European citizens with dementia:Development of best practice strategiesfor the transition from ambulatory to institutional long-trem care facilities (RightTimePlaceCare).** Sponsored by: European Commission, 2421153. Duration: 01/01/2010-30/06/2013.

Zabalegui A. **Grup de recerca reconegut com consolidat de Catalunya al "Grup de Cures a la Gent Gran Dependent".** Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR), 2009 SGR 916. Duration: 03/07/2009-31/12/2012.

Zabalegui A. **Estudio experimental sobre la eficacia de una intervención innovadora de información, formación y apoyo social "INFOSA" a cuidadores principales de personas mayores dependientes.** Sponsored by: Instituto de Salud Carlos III (ISCIII), PI09/0111. Duration: 17/02/2010-31/12/2012.

Moreno C. **Empowerment del paciente a través de la información-educació dels pacients programats a intervención quirúrgicas de prótesis de maluc o de genoll.** Sponsored by: Colegio Oficial de Enfermería de Barcelona. Duration: 01/01/2010-31/12/2013.

Zabalegui A. **Reflection. Projecte europeu en intervencions complexes d'infermeria.** Sponsored by: European Science Foundation - European Union. Duration: 01/01/2011-31/12/2014.

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	22.63	9	3	3
2011	33.91	9	5	2
2012	15.72	5	3	2

TRANSVERSAL RESEARCH GROUPS

Clinical pharmacology

GROUP MEMBERS

TEAM LEADER
Xavier Carné (Hospital Clínic)
Tel.: 93 227 91 68
E-mail: xcarne@clinic.cat

RESEARCHERS:
Joan Albert Arnaiz (Hospital Clínic)
Gonzalo Calvo (Hospital Clínic)
José Ríos (IDIBAPS)
Ferran Torres (IDIBAPS)

COLLABORATORS:
Begoña Gómez (Hospital Clínic)
Amalia Lafuente (UB)
Neus Riba (Hospital Clínic)
Josep Ribas (Hospital Clínic)
Ana Cruceta (Fundació Clínic)
Judit Pich (Fundació Clínic)
Sara Varea (Fundació Clínic)
Núria Sanz (Fundació Clínic)
Carles Codina (Hospital Clínic)

TEAM INVOLVED IN:

caiber
PLATAFORMA ESPAÑOLA DE ENSAYOS CLÍNICOS

STRATEGIC OBJECTIVES

The team carries out clinical research support activities with different Departments:

1. The Clinical Trials Agency, together with the Department of Pharmacy, provides support of all technical and administrative aspects related to clinical trials carried out in the Clinic Hospital - IDIBAPS. The Agency serves as a single window for sponsors and investigators, and as secretary to the CREC of the Clinic Hospital (Clinical Research Ethics Committee).

2. The CTU (Clinical Trials Unit), provides support for the conduction of clinical trials on the part of the investigators of the institution that act as sponsors, in aspects related to study design, implementation and monitorization.

3. The Statistical and Methodological Support Unit (USEM) offers counselling in trial data analysis and planning.

4. The Pharmacoepidemiology and Therapeutic Evaluation Unit, offers support of activities in pharmacovigilance, epidemiology and the evaluation of drugs in our setting.

5. The team collaborates with Dr. Amàlia Lafuente (UB) of the Pharmacology Unit of the University of Barcelona, who conducts studies relating genetics to drug substance activity and response.

6. Lastly, the team participates in the trial follow-up committees known as DSMB (Data and Safety Monitoring Boards), in charge of external supervision of the course of the clinical trials, and of deciding the pertinence of their continuity over time.

MAIN LINES OF RESEARCH

- Ethics in clinical research.
- Clinical trials, design and methodology.
- Statistical support of clinical research.
- Pharmacovigilance and pharmacoepidemiology.
- Pharmacogenetics and pharmacogenomics.

PUBLICATIONS

Original publications from 2010 to 2012

Year	IF	Total	Q 1	Q 2
2010	78.15	23	9	8
2011	76.89	29	10	4
2012	13.24	5	1	4

ORIGINALS
I.F.: 13.24

1 Tena B.; Escobar B.; Arguis M.J.; Cantero C.; Msc J.R.; Gomar C. **Reproducibility of Electronic von Frey and von Frey Monofilaments Testing.** CLINICAL JOURNAL OF PAIN. 28 (4): 318-323. **I.F.: 2.81.**

2 Catala-Lopez F.; Corrales I.; Martin-Serrano G.; Tobias A.; Calvo G. **Risk of thromboembolism with thrombopoietin receptor agonists in adult patients with thrombocytopenia: systematic review and meta-analysis of randomized controlled trials.** MEDICINA CLINICA. 139:421-429. **I.F.: 1.38.**

3 Llupia A.; Garcia-Basteiro A.L.; Mena G.; Rios J.; Puig J.; Bayas J.M.; Trilla A. **Vaccination Behaviour Influences Self-Report of Influenza Vaccination Status: A Cross-Sectional Study among Health Care Workers.** PLOS ONE. 7(7):e39496. **I.F.: 4.09.**

4 Sevene E.; Bardaji A.; Mariano A.; Machevo S.; Ayala E.; Sigauque B.; Aponte J.J.; Carne X.; Alonso P.L.; Menendez C. **Drug Exposure and Pregnancy Outcome in Mozambique.** PEDIATRIC DRUGS. 14 (1): 43-49. **I.F.: 1.79.**

5 Diaz-Brito V.; Leon A.; Knobel H.; Peraire J.; Domingo P.; Clotet B.; Dalmau D.; Cruceta A.; Arnaiz J.A.; Gatell J.M.; Garcia F. **Post-exposure prophylaxis for HIV infection: a clinical trial comparing lopinavir/ritonavir versus atazanavir each with zidovudine/lamivudine.** ANTIVIRAL THERAPY. 17 (2): 337-346. **I.F.: 3.16.**

REVIEWS
I.F.: 2.84

1 Dominguez V.; Ramos N.; Torrents A.; Garcia D.; Carne X. **Clinical trials during pregnancy: what has been done.** EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY. 68 (5): 455-458. **I.F.: 2.84.**

GRANTS FOR RESEARCH IN PROGRESS

Arnaiz J.A. **Fixed Dose Combination drugs for Secondary Cardiovascular Prevention.** Sponsored by: CNIC Centro Nacional de Investigaciones Cardiovasculares Carlos III, 241559. Duration: 01/07/2010 - 30/06/2013.

Calvo G. **Evaluación de la utilidad clínica de un protocolo estandarizado de disminución de dosis en pacientes con espondilartritis axiales (EA) en remisión clínica persistente en tratamiento con terapia anti-TNFalfa.** Sponsored by: Instituto de Salud Carlos III (ISCIII). Duration: 01/01/2011 - 31/12/2012.

Carné X. **European Clinical Research Infrastructures Network-Integrating Activity (ECRIN-IA).** Sponsored by: European Commission CE-FP7-INFRAS-2011-1, 284395. Duration: 01/01/2012-31/12/2015.

TEAM AND GROUP LEADERS INDEX

A

Alfredo Adán **67**
Alvar Agustí **148**
Jordi Alberch **239**
Antonio Alcaraz **151**
Vicente Arroyo **170**
Francesc Artigas **218**

B

Oriol Bachs **323**
Juan Balasch **156**
Joan Albert Barberà **137**
Miquel Bernardo **242**
Joan Bladé **302**
Jaume Bosch **178**
Josep Brugada **108**
Jordi Bruix **174**

C

Josep Mª Campistol **116**
Elías Campo **276**
Xavier Carné **334**
Antoni Castells **199**
Josefina Castro **242**
Francisco Cervantes **302**
Ricard Cervera **67**
Ángel Chamorro **223**
Maria Cinta Cid **67**
Daniel Closa **98**
Dolors Colomer **310**
Albert Compte **259**

D

Josep Dalmau **264**
Núria De la Iglesia **264**

E

Gustavo Egea **108**
Ginés Escolar **314**

F

Ramon Farré **127**
Pedro Luis Fernández **276**
José Carlos Fernández-Checa .. **190**
Mercè Fernández Lobato **178**
Jorge Ferrer **208**
Cristina Fillat **199**
Joaquim Forés **89**
Xavier Forns **166**

G

Joan C. García-Pagán **178**
Pere Gascón **318**
Cristobal Gastó **242**
Xavier Gasull **232**
Josep M. Gatell **76**
Ramon Gomis **210**
Eduard Gratacós **160**
Josep M. Grau **236**
Francesc Graus **264**
Núria Guañabens **187**

J

Carme Junqué **255**

L

Armando López-Guillermo **302**
Francisco Lozano **86**
Josep M. Llovet **174**

M

Guadalupe Mengod **218**
Cristóbal Mezquita..... **288**
Montserrat Milà..... **290**
Oscar Miró **94**
José M. Miró..... **76**
Rafael Molina **274**
Lluis Mont **108**
Josep Mª Montserrat..... **130**
Asunción Moreno **76**
Joaquim Mullol..... **141**

N

Anna Novials **210**

P

Julián Panés **183**
Albert Parés **187**
Carmen Peralta..... **194**
Sebastià Pons..... **218**
Francesca Pons **285**
Antonio Postigo..... **276**
Susana Puig..... **293**

R

Antonia Ribes..... **205**
Antoni Rimola..... **194**
Emili Ros..... **121**

S

Manel Sabaté Tenas **102**
Maria Victoria Sánchez Vives ... **259**
Raimon Sanmartí..... **64**
Pere Santamaria **210**
Josep Saura..... **218**
Antoni Sisó..... **328**
Marta Sitges..... **108**
Alex Soriano **76**
Cristina Suñol **218**

T

Eduardo Tolosa..... **226**
Antoni Torres..... **130**
Ramon Trullàs..... **269**

U

Álvaro Urbano-Ispizua..... **298**

V

Josep Valls **232**
Josep Vidal..... **210**
Eduard Vieta..... **242**
Pablo Villoslada..... **264**

Y

Jordi Yagüe **91**

Z

Adelaida Zabalegui..... **331**

Generalitat de Catalunya

CLÍNIC
BARCELONA
Hospital Universitari

UNIVERSITAT DE BARCELONA

CSIC
Consejo Superior de Investigaciones Científicas

IDIBAPS

Institut
D'Investigacions
Biomèdiques
August Pi i Sunyer

Rosselló, 149-153
08036 Barcelona

www.idibaps.org

Your gateway to IDIBAPS. A portal open to medical professionals, scientists and biomedicine enthusiasts where you will find information about the institution and its activities