ANNUAL SCIENTIFIC REPORT 2017

IDIBAPS

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IDIBAPS

Published by:
IDIBAPS
Rosselló, 149-153
08036 Barcelona

Editorial board
IDIBAPS Scientific Coordination Office

Art direction & graphic design
Marc Montalà
www.marcmontala.com

Cover photo
© Mar Petit

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Institució CERCA
Centres de Recerca de Catalunya

HR EXCELLENCE IN RESEARCH

ANNUAL
SCIENTIFIC REPORT
2017

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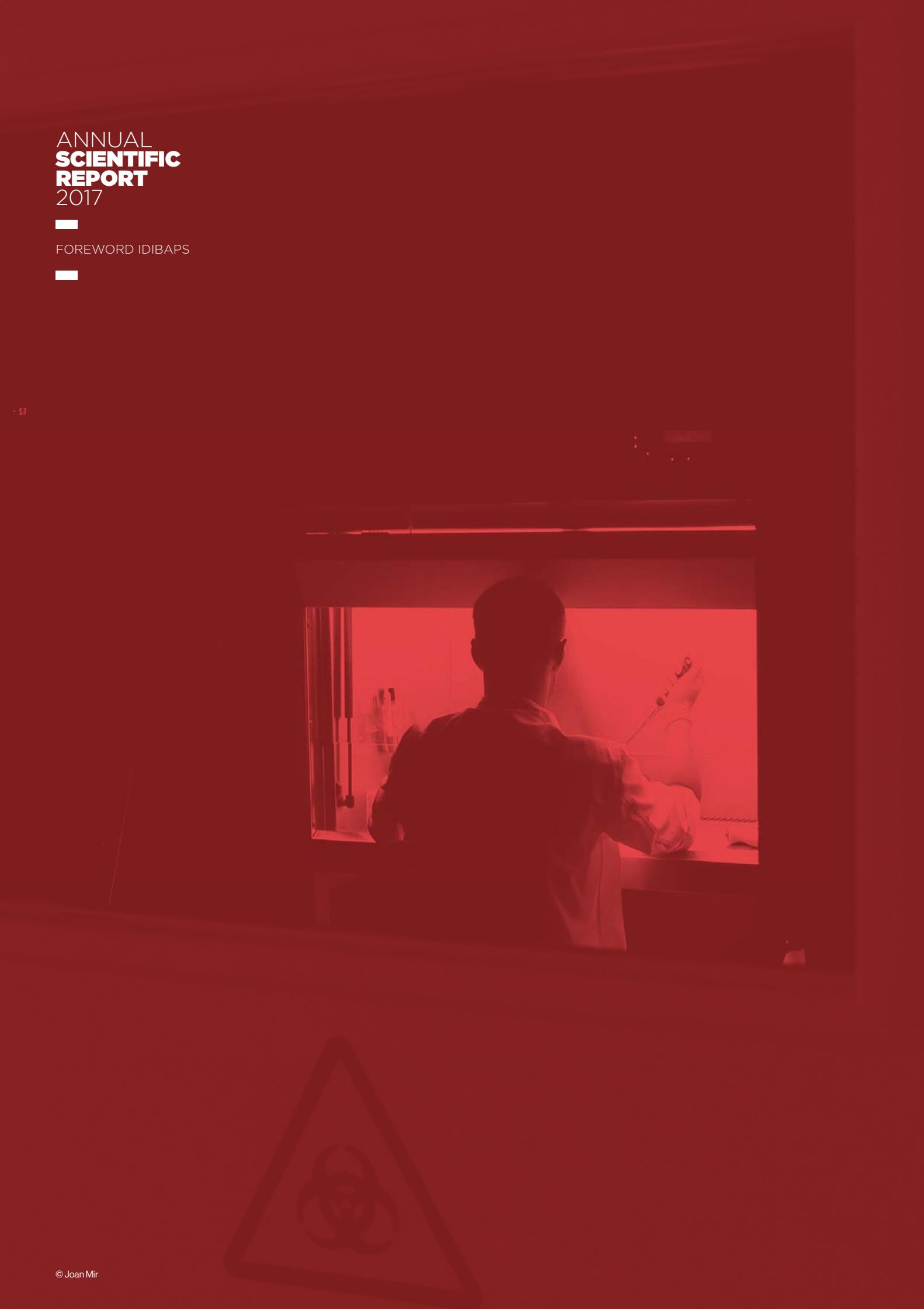
FOREWORD IDIBAPS



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About IDIBAPS

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

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

The Fundació Clínic per a la Recerca Biomèdica (FCRB) is a key institution to understand the functioning of IDIBAPS as a whole. It is a non-profit foundation that provides researchers with administrative and management support. The IDIBAPS research community is composed of more than 1,500 people, grouped into 107 research groups organized across 5 different areas of knowledge.

AREA 1
Biological aggression and response mechanisms

AREA 2
Respiratory, cardiovascular and renal pathobiology and bioengineering

AREA 3
Liver, digestive system and metabolism

AREA 4
Clinical and experimental neuroscience

AREA 5
Oncology and haematology

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

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

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

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

Organisation chart

IDIBAPS requires a solid administrative infrastructure to support the state-of-the-art research developed by its researchers.

For this reason, IDIBAPS works together with the Fundació Clínic per a la Recerca Biomèdica (FCRB) to ensure efficiency and quality in the services offered to its research staff, in particular, in the areas of research project management and administration.

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Director of Strategy

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Governance and structure

Governance is exercised through the following boards and committees:

THE BOARD OF GOVERNORS

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

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Dean of the School of Medicine, Universitat de Barcelona

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Director, IDIBAPS

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General Manager, Hospital Clínic de Barcelona

Antoni Castells
Medical Director, Hospital Clínic de Barcelona

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Director, CERCA

THE SCIENTIFIC ADVISORY BOARD

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

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THE STEERING COMMITTEE

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

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Elías Campo
Director

MEMBERS
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Universitat de Barcelona

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Gene therapy and cancer

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Group Leader
Hepatic hemodynamics and portal hypertension
Research Deputy Director
Hospital Clínic de Barcelona

Josep Maria Llovet
Group Leader
Translational research in hepatic oncology

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Coordinator of the IDIBAPS Research Area 4

Rosa Vilavella
General Manager

SECRETARY
Marga Nadal
Strategy Director

THE INTERNAL ADVISORY COMMITTEE

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

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Director

STEERING COMMITTEE REPRESENTATIVES
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Group Leader
Translational research in hepatic oncology

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Group Leader
Hepatic hemodynamics and portal hypertension
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Hospital Clínic de Barcelona

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Physicians' Representatives
Hospital Clínic de Barcelona

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AREA 2
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Joan Albert Barberà, Representative

AREA 3
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Francesc Balaguer, Representative

AREA 4
Anna Planas, Coordinator
Josep Dalmau, Representative

AREA 5
Dolors Colomer, Coordinator
Aleix Prat, Representative

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Researcher
Fetal and perinatal medicine

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Pathogenesis and prevention of diabetes

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Group Leader
Liver transplantation and graft viability

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CAPSBE, Primary Care
Research Coordinator

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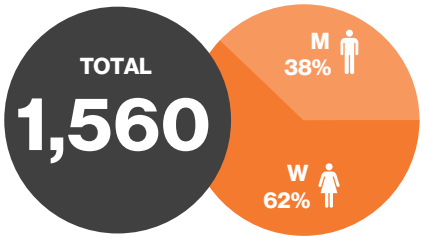
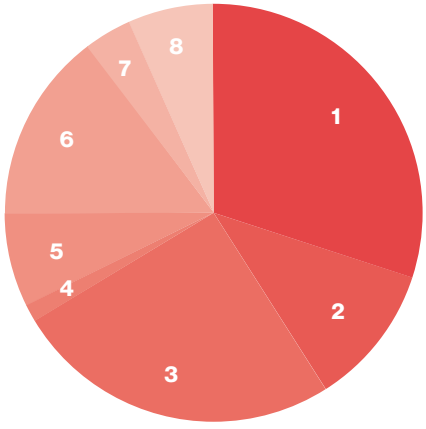
Junior Group Leader
Multimodal neuroimaging in high risk and early psychosis

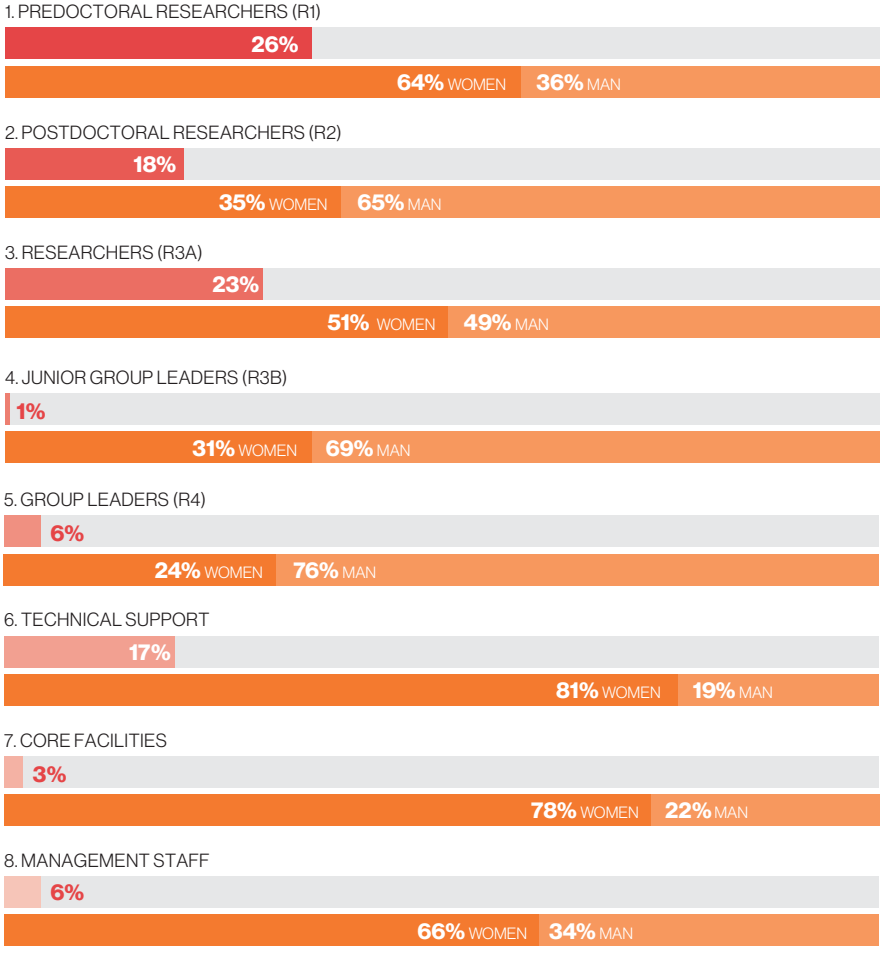
SECRETARY
Marga Nadal
Strategy Director

Staff





1. PREDOCTORAL RESEARCHERS (R1)
2. POSTDOCTORAL RESEARCHERS (R2)
3. RESEARCHERS (R3A)
4. JUNIOR GROUP LEADERS (R3B)
5. GROUP LEADERS (R4)
6. TECHNICAL SUPPORT
7. CORE FACILITIES
8. MANAGEMENT STAFF



Recruitment and retention of talent programs

INSTITUCIÓ CATALANA DE RECERCA I ESTUDIS AVANÇATS (ICREA)

ICREA, the Catalan Institute for Research and Advanced Studies, is a foundation supported by the Catalan Government that recruits top scientists for the Catalan R&D system. Currently IDIBAPS has five ICREA Research Professors:

Josep Dalmau
Pathogenesis of autoimmune neuronal disorders

Josep M. Llovet
Translational research in hepatic oncology

Albert Pol
Lipid trafficking and disease

Antonio Postigo
Transcriptional regulation of gene expression

María Victoria Sánchez-Vives
Systems neuroscience

IDIBAPS 80/20 PROGRAMME

To strengthen translational clinical research IDIBAPS launched this program in 2013. The 80/20 researchers are consolidated clinical investigators from Hospital Clinic and IDIBAPS with no reductions in the care load but with strategic research projects to develop. The beneficiaries of this program release 30 hours devoted to weekly care activities (80% of a full-time dedication) to dedicate this time to research. It consists in a 3-year position extendable for 2 years additional prior a positive evaluation.

Maria Cinta Cid
Systemic vasculitis

Dolors Colomer
Physiopathology and molecular bases in hematology

Josep M. Miró
Endocarditis. Cardiovascular infections. Experimental model

IDIBAPS 50/50 PROGRAMME

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

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

Ignacio Revuelta
Translational research in posttransplant neoplasia

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

Gisela Sugranyes
Multimodal neuroimaging in high risk and early psychosis

Carlos Fernández de Larrea
Mechanisms of progression in monoclonal gammopathies

Eduard Guasch
Arrhythmias and physical activity

Sara Llufriu
Advanced imaging in neuroimmunological diseases (ImaginEM)

PHD4MD PROGRAMME

The objective of the PhD4MD Programme (https://phd4md.crg.eu) is to provide medical doctors with advanced hands-on training on the latest fields of research and cutting-edge technologies. Ultimately, the medical professionals enrolled in the program will obtain their PhD from one of the associated Universities.
Medical professionals who enroll in the PhD4MD programme will carry out a project in translational research jointly coordinated by a basic and a clinical research investigator, belonging to one of the four participating institutions: the CRG (Centre for Genomic Regulation), the IRB Barcelona, the IDIBAPS and the VHIR (Vall d'Hebron Research Institute).
The PhD4MD programme was launched for the first time in 2015 and 3 new positions were awarded in 2017.
There are currently 5 awardees of the programme working at IDIBAPS.

Juan Miguel Cejalvo

PROJECT

Uncovering the molecular and cellular mechanisms of metastatic dormancy in luminal breast cancer.

PRINCIPAL INVESTIGATORS

Aleix Prat (IDIBAPS) and Roger Gomis (IRB Barcelona)

Csaba Fehér

PROJECT

Systems vaccinology to guide effective and safe hiv therapeutic vaccines.

PRINCIPAL INVESTIGATORS

Felipe García / Mireia Arnedo (IDIBAPS) and Patrick Aloy (IRB Barcelona)

Elisa Pose

PROJECT

A systems biology approach to understanding the molecular pathogenesis of chronic liver disease progression.

PRINCIPAL INVESTIGATORS

Pere Ginés (IDIBAPS) and Patrick Aloy (IRB Barcelona)

Irene López

PROJECT

Splicing factor mutations in hematological malignancies.

PRINCIPAL INVESTIGATORS

Dolors Colomer (IDIBAPS) and Juan Valcárcel (CRG)

Alexandra Pérez

PROJECT

Multiple system atrophy: synuclein regulation and biomarkers discovery.

PRINCIPAL INVESTIGATORS

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

Research and innovation outputs

Scientific publications

Publication output and indicators.

	OUTPUT	IF	MEAN IF	%Q1	%D1
Original articles	**1.127**	**6.895**	**6,12**	**69%**	**32%**
Reviews	188	1.108	5,89	64%	29%
Editorials	62	415	6,69	68%	42%
Clinical guidelines	39	299	7,67	69%	56%
Case reports	43	124	2,89	33%	7%
Letters	100	883	8,83	72%	45%
Consortium publications	41	509	12,40	80%	54%

FIGURE LEGEND

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

Total IF
Accumulated impact factor of all the scientific publications.

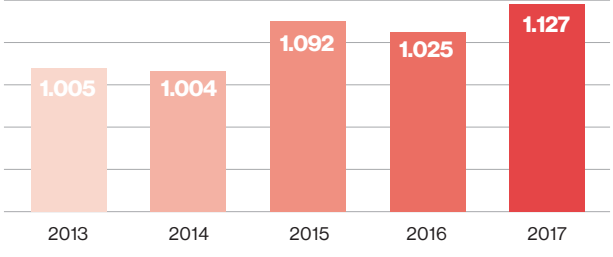
Mean IF
Mean impact factor of all the scientific publications.

% Q1
% of publications published in journals ranked in the first quartile (top 25%) of their category as ordered by the 2016 Journal Citation Reports.

% D1
% of publications published in journals ranked in the first decile (top 10%) of their category as ordered by the 2016 Journal Citation Reports.

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

A) Number of original articles



B) Number of original articles per area

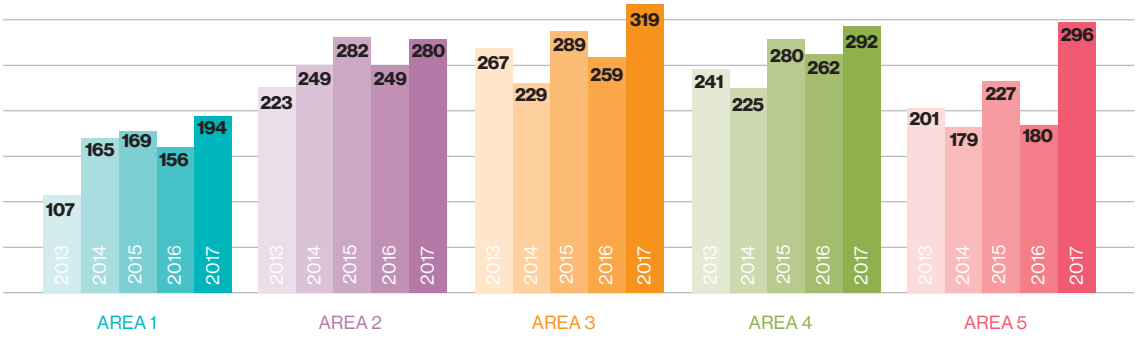
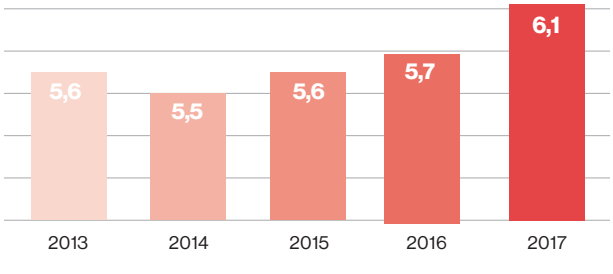


FIGURE LEGEND

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

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

A) Mean IF



B) % Q1

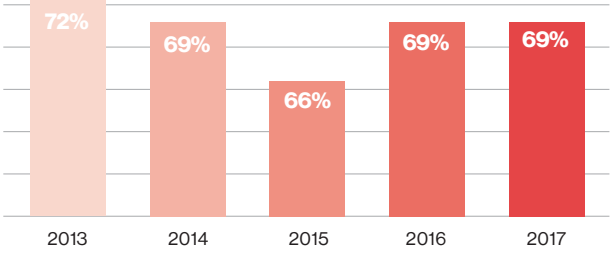


FIGURE LEGEND

Only original articles were taken into consideration.
%Q1: % of publications published in journals ranked in the first quartile (top 25%) of their category as ordered by the 2016 Journal Citation Reports.

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

138

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

47

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

TABLE A

JOURNAL	IF	TOTAL ORIGINAL ARTICLES
New england journal of medicine	72,406	**6**
Lancet	47,831	**2**
Nature	40,137	**2**
Nature nanotechnology	38,986	**1**
Lancet oncology	33,900	**6**
Cell	30,410	**4**
Nature medicine	29,886	**1**
Nature genetics	27,959	**1**
Lancet neurology	26,284	**2**
Journal of clinical oncology	24,008	**5**
European heart journal	20,212	**5**
Nature cell biology	20,060	**1**
Journal of the american college of cardiology	19,896	**3**
Lancet infectious diseases	19,864	**1**
Circulation	19,309	**4**
Lancet respiratory medicine	19,287	**3**
Gastroenterology	18,392	**5**
Cell metabolism	18,164	**2**
Nature neuroscience	17,839	**1**
Annals of internal medicine	17,202	**3**
Gut	16,658	**7**
Hepatology	13,246	**12**
Molecular psychiatry	13,204	**1**
American journal of respiratory and critical care medicine	13,204	**2**
Blood	13,164	**3**
Journal of allergy and clinical immunology	13,081	**3**
Annals of the rheumatic diseases	12,811	**4**
Journal of the national cancer institute	12,589	**2**
Journal of hepatology	12,486	**10**
Acta neuropathologica	12,213	**1**
Nature communications	12,124	**8**
Intensive care medicine	12,015	**2**
Plos medicine	11,862	**1**
Annals of oncology	11,855	**3**
Leukemia	11,702	**9**
Biological psychiatry	11,412	**1**
European respiratory journal	10,569	**6**
Nucleic acids research	10,162	**4**
Jama neurology	10,029	**1**
TOTAL		**138**

TABLE B

AUTHORS	TITLE	REFERENCE	IF	TEAMS INVOLVED
Sandborn, William J.; Su, Chinyu; Sands, Bruce E.; D'Haens, Geert R.; Vermeire, Severine; Schreiber, Stefan; Danese, Silvio; Feagan, Brian G.; Reinisch, Walter; Niezychowski, Wojciech; Friedman, Gary; Lawendy, Nervin; Yu, Dahong; Woodworth, Deborah; Mukherjee, Arnab; Zhang, Haiying; Healey, Paul; Panes, Julian; OCTAVE Induction 1 OCTAVE Inductio	**Tofacitinib as Induction and Maintenance Therapy for Ulcerative Colitis.**	New england journal of medicine. 376(18):1723-1736	72,406	3.7
Bruix, Jordi; Qin, Shukui; Merle, Philippe; Granito, Alessandro; Huang, Yi-Hsiang; Bodoky, Gyrogy; Pracht, Marc; Yokosuka, Osamu; Rosmorduc, Olivier; Breder, Valeriy; Gerolami, Rene; Masi, Gianluca; Ross, Paul J.; Song, Tianqiang; Bronowicki, Jean-Pierre; Ollivier-Hourmand, Isabelle; Kudo, Masatoshi; Cheng, Ann-Lii; Llovet, Josep M.; Finn, Richard S.; LeBerre, Marie-Aude; Baumhauer, Annette; Meinhardt, Gerold; Han, Guohong; Resorce Investigators	**Regorafenib for patients with hepatocellular carcinoma who progressed on sorafenib treatment (RESORCE): a randomised, double-blind, placebo-controlled, phase 3 trial.**	Lancet. 389(10064):56-66	47,831	3.5
Singha S., Shao K., Yang Y., Clemente-Casares X., Solé P., Clemente A., Blanco J., Dai Q., Song F., Liu S., Yamanouchi J., Umeshappa C., Nanjundappa R., Detampel P., Amrein M., Fandos C., Tanguay R., Newbigging S., Serra P., Khadra A., Chan W., Santamaria P.	**Peptide–MHC-based nanomedicines for autoimmunity function as T-cell receptor microclustering devices.**	Nature nanotechnology. 12(7):701-710	38,986	3.14
Llombart-Cussac, Antonio; Cortes, Javier; Pare, Laia; Galvan, Patricia; Bermejo, Begona; Martinez, Noelia; Vidal, Maria; Pernas, Sonia; Lopez, Rafael; Munoz, Montserrat; Nuciforo, Paolo; Morales, Serafin; Oliveira, Mafalda; de la Pena, Lorena; Pelaez, Alexandra; Prat, Aleix	**HER2-enriched subtype as a predictor of pathological complete response following trastuzumab and lapatinib without chemotherapy in early-stage HER2-positive breast cancer (PAMELA): An open-label, single-group, multicentre, phase 2 trial.**	Lancet oncology. 18(4):545-554	30,410	5.13
Hebbandi Nanjundappa R., Ronchi F., Wang J., Clemente-Casares X., Yamanouchi J., Sokke Umeshappa C., Yang Y., Blanco J., Bassolas-Molina H., Salas A., Khan H., Slattery R., Wyss M., Mooser C., Macpherson A., Sycuro L., Serra P., McKay D., McCoy K., Santamaria P.	**A Gut Microbial Mimic that Hijacks Diabetogenic Autoreactivity to Suppress Colitis.**	Cell. 171(3):655-667	30,410	3.7; **3.14**
Scott DW, Abrisqueta P, Wright GW, Slack GW, Mottok A, Villa D, Jares P, Rauert-Wunderlich H, Royo C, Clot G, Pinyol M, Boyle M, Chan FC, Braziel RM, Chan WC, Weisenburger DD, Cook JR, Greiner TC, Fu K, Ott G, Delabie J, Smeland EB, Holte H, Jaffe ES, Steidl C, Connors JM, Gascoyne RD, Rosenwald A, Staudt LM, Campo E, Rimsza LM, Lymphoma/Leukemia Molecular Profiling Project	**New Molecular Assay for the Proliferation Signature in Mantle Cell Lymphoma Applicable to Formalin-Fixed Paraffin-Embedded Biopsies.**	Journal of clinical oncology. 35(15):1668-1677	24,008	5.1
Arbelo E, Brugada J, Blomström-Lundqvist C, Laroche C, Kautzner J, Pokushalov E, Raatikainen P, Efremidis M, Hindricks G, Barrera A, Maggioni A, Tavazzi L, Dagres N, on the behalf of the ESC-EHRA Atrial Fibrillation Ablation Long-term Registry Investigators	**Contemporary management of patients undergoing atrial fibrillation ablation: Inhospital and 1-year follow-up findings from the ESC-EHRA atrial fibrillation ablation long-term registry.**	European heart journal. 38(17):1303-1316	20,212	2.2
Brugada J, Delnoy PP, Brachmann J, Reynolds D, Padeletti L, Noelker G, Kantipudi C, Rubin Lopez JM, Dichtl W, Borri-Brunetto A, Verhees L, Ritter P, Singh JP, RESPOND CRT Investigators	**Contractility sensor-guided optimization of cardiac resynchronization therapy: Results from the RESPOND-CRT trial.**	European heart journal. 38(10):730-738	20,212	2.2
Hernandez-Ojeda J, Arbelo E, Borras R, Berne P, Tolosana JM, Gomez-Juanatey A, Berruezo A, Campuzano O, Sarquella-Brugada G, Mont L, Brugada R, Brugada J	**Patients With Brugada Syndrome and Implanted Cardioverter-Defibrillators: Long-Term Follow-Up.**	Journal of the american college of cardiology. 70(16):1991-2002	19,896	2.2
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Translation of knowledge and innovation

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 have a remarkable impact in patients' care and medical practice.

39 **Clinical guidelines published in 2017.**

AUTHORS	TITLE	REFERENCE	IF	Q/D1	TEAMS INVOLVED
Lip, Gregory Y. H.; Coca, Antonio	**Hypertension and cardiac arrhythmias.**	European heart journal.38(4):223-225	20,212	Q1/D1	2.4
Badimon, Lina; Bugiardini, Raffaele; Cenko, Edina; Cubedo, Judit; Dorobantu, Maria; Duncker, Dirk J.; Estruch, Ramon; Milicic, Davor; Tousoulis, Dimitris; Vasiljevic, Zorana; Vilahur, Gemma; De Wit, Cor; Koller, Akos	**Position paper of the European Society of Cardiology-working group of coronary pathophysiology andmicrocirculation: obesity and heart disease.**	European heart journal. 38(25):1951	20,212	Q1/D1	2.4
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Zignego AL, Ramos-Casals M, Ferri C, Saadoun D, Arcaini L, Roccatello D, Antonelli A, Desbois AC, Comarmond C, Gragnani L, Casato M, Lamprecht P, Mangia A, Tzioufas AG, Younossi ZM, Cacoub P, ISG-EHCV	**International therapeutic guidelines for patients with HCV-related extrahepatic disorders. A multidisciplinary expert statement.**	Autoimmunity reviews. 16(5):523-541	8,961	Q1/D1	1.2
Rehm J, Anderson P, Prieto JAA, Armstrong I, Aubin HJ, Bachmann M, Bastus NB, Brotons C, Burton R, Cardoso M, Colom J, Duprez D, Gmel G, Gual A, Kraus L, Kreutz R, Liira H, Manthey J, Møller L, Okruhlica L', Roerecke M, Scafato E, Schulte B, Segura-Garcia L, Shield KD, Sierra C, Vyshinskiy K, Wojnar M, Zarco J.	**Towards new recommendations to reduce the burden of alcohol-induced hypertension in the European Union.**	BMC medicine. 15(1):173	8,097	Q1/D1	4.7
Hellings PW, Fokkens WJ, Bachert C, Akdis CA, Bieber T, Agache I, Bernal-Sprekelsen M, Canonica GW, Gevaert P, Joos G, Lund V, Muraro A, Onerci M, Zuberbier T, Pugin B, Seys SF, Bousquet J, ARIA and EPOS working groups	**Positioning the principles of precision medicine in care pathways for allergic rhinitis and chronic rhinosinusitis – A EUFOREA-ARIA-EPOS-AIRWAYS ICP statement.**	Allergy. 72(9):1297-1305	7,361	Q1/D1	2.8
Vuitton L., Peyrin-Biroulet L., Colombel J., Pariente B., Pineton de Chambrun G., Walsh A., Panes J., Travis S., Mary J., Marteau P.	**Defining endoscopic response and remission in ulcerative colitis clinical trials: an international consensus.**	Alimentary pharmacology and therapeutics. 45(6):801-813	7,286	Q1/D1	3.7
Dumonceau JM, Deprez PH, Jenssen C, Iglesias-Garcia J, Larghi A, Vanbiervliet G, Aithal GP, Arcidiacono PG, Bastos P, Carrara S, Czakó L, Fernández-Esparrach G, Fockens P, Ginès À, Havre RF, Hassan C, Vilmann P, van Hooft JE, Polkowski M.	**Indications, results, and clinical impact of endoscopic ultrasound (EUS)-guided sampling in gastroenterology: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline - Updated January 2017.**	Endoscopy. 49(7):695-714	6,107	Q1/D1	3.11

Polkowski, Marcin; Jenssen, Christian; Kaye, Philip; Carrara, Silvia; Deprez, Pierre; Gines, Angels; Fernandez-Esparrach, Gloria; Eisendrath, Pierre; Aithal, Guruprasad P.; Arcidiacono, Paolo; Barthet, Marc; Bastos, Pedro; Fornelli, Adele; Napoleon, Bertrand; Iglesias-Garcia, Julio; Seicean, Andrada; Larghi, Alberto; Hassan, Cesare; van Hooft, Jeanin E.; Dumonceau, Jean-Marc	**Technical aspects of endoscopic ultrasound (EUS)-guided sampling in gastroenterology: European Society of Gastrointestinal Endoscopy (ESGE) Technical Guideline March 2017.**	Endoscopy. 49(10):989-1006	6,107	Q1/D1	3.11
Danese S., Fiorino G., Raine T., Ferrante M., Kemp K., Kierkus J., Lakatos P., Mantzaris G., van der Woude J., Panes J., Peyrin-Biroulet L.	**ECCO Position statement on the use of biosimilars for inflammatory bowel disease-an update.**	Journal of crohn's and colitis. 11(1):26-34	5,813	Q1	3.7
Perez-Martinez, Pablo; Mikhailidis, Dimitri P.; Athyros, Vasilios G.; Bullo, Monica; Couture, Patrick; Covas, Maria I.; de Koning, Lawrence; Delgado-Lista, Javier; Diaz-Lopez, Andres; Drevon, Christian A.; Estruch, Ramon; Esposito, Katherine; Fito, Montserrat; Garaulet, Marta; Giugliano, Dario; Garcia-Rios, Antonio; Katsiki, Niki; Kolovou, Genovefa; Lamarche, Benoit; Maiorino, Maria Ida; Mena-Sanchez, Guillermo; Munoz-Garach, Araceli; Nikolic, Dragana; Ordovas, Jose M.; Perez-Jimenez, Francisco; Rizzo, Manfredi; Salas-Salvado, Jordi; Schroder, Helmut; Tinahones, Francisco J.; de la Torre, Rafael; van Ommen, Ben; Wopereis, Suzan; Ros, Emilio; Lopez-Miranda, Jose	**Lifestyle recommendations for the prevention and management of metabolic syndrome: an international panel recommendation.**	Nutrition reviews. 75(5):307-326	5,291	Q1/D1	2.4
Calkins, Hugh; Hindricks, Gerhard; Cappato, Riccardo; Kim, Young-Hoon; Saad, Eduardo B.; Aguinaga, Luis; Akar, Joseph G.; Badhwar, Vinay; Brugada, Josep; Camm, John; Chen, Peng-Sheng; Chen, Shih-Ann; Chung, Mina K.; Nielsen, Jens Cosedis; Curtis, Anne B.; Davies, D. Wyn; Day, John D.; d'Avila, Andre; de Groot, N. M. S. (Natasja); Di Biase, Luigi; Duytschaever, Mattias; Edgerton, James R.; Ellenbogen, Kenneth A.; Ellinor, Patrick T.; Ernst, Sabine; Fenelon, Guilherme; Gerstenfeld, Edward P.; Haines, David E.; Haissaguerre, Michel; Helm, Robert H.; Hylek, Elaine; Jackman, Warren M.; Jalife, Jose; Kalman, Jonathan M.; Kautzner, Josef; Kottkamp, Hans; Kuck, Karl Heinz; Kumagai, Koichiro; Lee, Richard; Lewalter, Thorsten; Lindsay, Bruce D.; Macle, Laurent; Mansour, Moussa; Marchlinski, Francis E.; Michaud, Gregory F.; Nakagawa, Hiroshi; Natale, Andrea; Nattel, Stanley; Okumura, Ken; Packer, Douglas; Pokushalov, Evgeny; Reynolds, Matthew R.; Sanders, Prashanthan; Scanavacca, Mauricio; Schilling, Richard; Tondo, Claudio; Tsao, Hsuan-Ming; Verma, Atul; Wilber, David J.; Yamane, Teiichi	**2017 HRS/EHRA/ECAS/APHRS/SOLAECE expert consensus statement on catheter and surgical ablation of atrial fibrillation: Executive summary.**	Heart rhythm. 14 (10):e445-e494	4,825	Q1	2.2
Calkins H, Hindricks G, Cappato R, Kim YH, Saad EB, Aguinaga L, Akar JG, Badhwar V, Brugada J, Camm J, Chen PS, Chen SA, Chung MK, Nielsen JC, Curtis AB, Davies DW, Day JD, d'Avila A, de Groot NMSN, Di Biase L, Duytschaever M, Edgerton JR, Ellenbogen KA, Ellinor PT, Ernst S, Fenelon G, Gerstenfeld EP, Haines DE, Haissaguerre M, Helm RH, Hylek E, Jackman WM, Jalife J, Kalman JM, Kautzner J, Kottkamp H, Kuck KH, Kumagai K, Lee R, Lewalter T, Lindsay BD, Macle L, Mansour M, Marchlinski FE, Michaud GF, Nakagawa H, Natale A, Nattel S, Okumura K, Packer D, Pokushalov E, Reynolds MR, Sanders P, Scanavacca M, Schilling R, Tondo C, Tsao HM, Verma A, Wilber DJ, Yamane T.	**2017 HRS/EHRA/ECAS/APHRS/SOLAECE Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation.**	Heart rhythm. 14 (10):e445-e494	4,825	Q1	2.2
Lip, Gregory Y. H.; Coca, Antonio; Kahan, Thomas; Boriani, Giuseppe; Manolis, Antonis S.; Olsen, Michael Hecht; Oto, Ali; Potpara, Tatjana S.; Steffel, Jan; Marin, Francisco; de Oliveira Figueiredo, Marcio Jansen; de Simone, Giovanni; Tzou, Wendy S.; Chiang, Chern-En; Williams, Bryan; Dan, Gheorghe-Andrei; Gorenek, Bulent; Fauchier, Laurent; Savelieva, Irina; Hatala, Robert; van Gelder, Isabelle; Brguljan-Hitij, Jana; Erdine, Serap; Lovic, Dragan; Kim, Young-Hoon; Salinas-Arce, Jorge; Field, Michael	**Hypertension and cardiac arrhythmias: a consensus document fromthe European Heart RhythmAssociation (EHRA) and ESC Council on Hypertension, endorsed by the Heart RhythmSociety (HRS), Asia-Pacific Heart RhythmSociety (APHRS) and Sociedad Latinoamericana de Estimulacion Cardiaca y Electrofisiologia (SOLEACE).**	Europace. 19(6):891-911	4,521	Q1	2.4

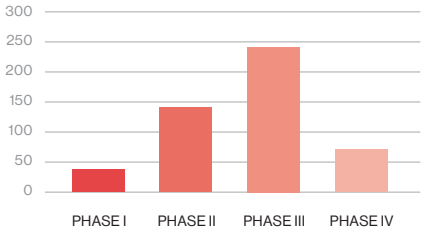
Mont L, Pelliccia A, Sharma S, Biffi A, Borjesson M, Brugada Terradellas J, Carré F, Guasch E, Heidbuchel H, La Gerche A, Lampert R, McKenna W, Papadakis M, Priori SG, Scanavacca M, Thompson P, Sticherling C, Viskin S, Wilson M, Corrado D,, Lip GY, Gorenek B, Blomström Lundqvist C, Merkely B, Hindricks G, Hernández-Madrid A, Lane D, Boriani G, Narasimhan C, Marquez MF, Haines D, Mackall J, Manuel Marques-Vidal P, Corra U, Halle M, Tiberi M, Niebauer J, Piepoli M Reviewers	**Pre-participation cardiovascular evaluation for athletic participants to prevent sudden death: Position paper from the EHRA and the EACPR, branches of the ESC. Endorsed by APHRS, HRS, and SOLAECE.**	European journal of preventive cardiology. 24(1):41-69	3,606	Q2	2.2
Diez-Perez A., Naylor K., Abrahamsen B., Agnusdei D., Brandi M., Cooper C., Dennison E., Eriksen E., Gold D., Guañabens N., Hadji P., Hiligsmann M., Horne R., Josse R., Kanis J., Obermayer-Pietsch B., Prieto-Alhambra D., Reginster J., Rizzoli R., Silverman S., Zillikens M., Eastell R.	**International Osteoporosis Foundation and European Calcified Tissue Society Working Group. Recommendations for the screening of adherence to oral bisphosphonates.**	Osteoporosis international. 28(3):767-774	3,591	Q2	3.8
Stahl, Stephen M.; Morrissette, Debbi A.; Faedda, Gianni; Fava, Maurizio; Goldberg, Joseph F.; Keck, Paul E.; Lee, Yena; Malhi, Gin; Marangoni, Ciro; McElroy, Susan L.; Ostacher, Michael; Rosenblat, Joshua D.; Sole, Eva; Suppes, Trisha; Takeshima, Minoru; Thase, Michael E.; Vieta, Eduard; Young, Allan; Zimmerman, Mark; McIntyre, Roger S.	**Guidelines for the recognition and management of mixed depression.**	CNS spectrums. 22(2):203-219	3,589	Q1	4.7
Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agusti A.	**Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.**	Respirology. 22(3):575-601	3,256	Q2	2.7; 2.9
Quirce S, Delgado J, Entrenas LM, Grande M, Llorente C, López Viña A, Martínez Moragón E, Mascarós E, Molina J, Olaguibel JM, Pérez de Llano LA, Perpiñá Tordera M, Quintano JA, Rodríguez M, Román-Rodriguez M, Sastre J, Trigueros JA, Valero AL, Zoni AC, Plaza V, ASMAFORUM II Group	**Quality indicators of asthma care derived from the spanish guidelines for asthma management (GEMA 4.0): A multidisciplinary team report.**	Journal of investigational allergology and clinical immunology. 27(1):69-73	3,094	Q2	2.8
Vogelmeier CF, Criner GJ, Martínez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodríguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agustí A.	**Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.**	Archivos de bronconeumologia. 53(3):128-149	2,979	Q2	2.7; 2.9
Guillem, V.; Camps, C.; Carrato, A.; Diaz-Rubio, E.; Gascon, P.	**European edition of the NCCN clinical practice guidelines: relevance of the translation and adaptation into Spanish.**	Clinical and translational oncology. 19(3):288-290	2,353	Q3	5.10
Calkins, Hugh; Hindricks, Gerhard; Cappato, Riccardo; Kim, Young-Hoon; Saad, Eduardo B.; Aguinaga, Luis; Akar, Joseph G.; Badhwar, Vinay; Brugada, Josep; Camm, John; Chen, Peng-Sheng; Chen, Shih-Ann; Chung, Mina K.; Nielsen, Jens Cosedis; Curtis, Anne B.; Davies, D. Wyn; Day, John D.; d'Avila, Andre; de Groot, N. M. S. (Natasja); Di Biase, Luigi; Duytschaever, Mattias; Edgerton, James R.; Ellenbogen, Kenneth A.; Ellinor, Patrick T.; Ernst, Sabine; Fenelon, Guilherme; Gerstenfeld, Edward P.; Haines, David E.; Haissaguerre, Michel; Helm, Robert H.; Hylek, Elaine; Jackman, Warren M.; Jalife, Jose; Kalman, Jonathan M.; Kautzner, Josef; Kottkamp, Hans; Kuck, Karl Heinz; Kumagai, Koichiro; Lee, Richard; Lewalter, Thorsten; Lindsay, Bruce D.; Macle, Laurent; Mansour, Moussa; Marchlinski, Francis E.; Michaud, Gregory F.; Nakagawa, Hiroshi; Natale, Andrea; Nattel, Stanley; Okumura, Ken; Packer, Douglas; Pokushalov, Evgeny; Reynolds, Matthew R.; Sanders, Prashanthan; Scanavacca, Mauricio; Schilling, Richard; Tondo, Claudio; Tsao, Hsuan-Ming; Verma, Atul; Wilber, David J.; Yamane, Teiichi	**2017 HRS/EHRA/ECAS/APHRS/SOLAECE expert consensus statement on catheter and surgical ablation of atrial fibrillation: Executive summary.**	Journal of interventional cardiac electrophysiology. 50(1):1-55	1,826	Q3	2.2

Ariza, Javier; Cobo, Javier; Baraia-Etxaburu, Josu; Benito, Natividad; Bori, Guillermo; Cabo, Javier; Corona, Pablo; Esteban, Jaime; Horcajada, Juan Pablo; Lora-Tamayo, Jaime; Murillo, Oscar; Palomino, Julian; Parra, Jorge; Pigrau, Carlos; del Pozo, Jose Luis; Riera, Melchor; Rodriguez, Dolores; Sanchez-Somolinos, Mar; Soriano, Alex; del Toro, M. Dolores; de la Torre, Basilio;Spanish Network Study Infect Dis; Spanish Soc Infect Dis Clin Microb	**Executive summary of management of prosthetic joint infections. Clinical practice guidelines by the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC).**	Enfermedades infecciosas y microbiologia clinica. 35(3):189-195	1,714	Q3	1.3
De Cueto M., Aliaga L., Alós J., Canut A., Los-Arcos I., Martínez J., Mensa J., Pintado V., Rodriguez-Pardo D., Yuste J., Pigrau C.	**Executive summary of the diagnosis and treatment of urinary tract infection: Guidelines of the Spanish Society of Clinical Microbiology and Infectious Diseases (SEIMC).**	Enfermedades infecciosas y microbiologia clinica. 35(5):314-320	1,714	Q3	1.3
Santiago Moreno Guillén, Antonio Antela López, Felipe García Alcaide, Julia del Amo Valero, Vicente Boix, Pep Coll, Claudia Fortuny Guasch, Juan Luis Gómez Sirvent, Félix Gutiérrez Rodero, José Antonio Iribarren Loyarte, Josep Maria Llibre Codina, Juan Carlos López Bernaldo de Quirós, Juan Emilio Losa García, Ana Belén Lozano Serrano, Michael Meulbroek, Julián Olalla Sierra, Ferran Pujol, Federico Pulido, Manuel Crespo Casal, Juan González García, José López Aldeguer, José A. Pérez Molina, Daniel Podzamczer Palter, Antonio Rivero Román	**Executive summary: Pre-exposure prophylaxis for prevention of HIV infection in adults in Spain: July 2016.**	Enfermedades infecciosas y microbiologia clinica. 35(6):377-383	1,714	Q3	1.3
Gerard Espinosa Garriga, Santiago Muñoz Fernández, José María García Ruiz de Morales, José María Herreras Cantalapiedra, Miguel Cordero	**Documento de recomendaciones de tratamiento de la uveítis anterior no infecciosa.**	Medicina clinica. 149(12):552-552	1,525	Q3	1.2

CLINICAL TRIALS

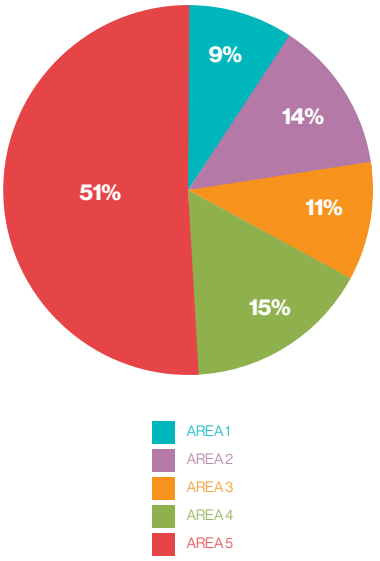
The IDIBAPS constitutes the ideal setting for completing a number of the crucial steps in the development of new medical products. Basic biomedical research and applied clinical research, together with specialized healthcare practice, are aspects of IDIBAPS that may be very useful for the development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

The adjacent graphics summarize the number of active clinical trials in 2017.
In 2017, 201 new clinical trials were opened and overall, there were 496 active clinical trials. Most of these clinical trials correspond to phase III (49%).



By scientific areas, most of the trials are performed in the area of hemato-oncology.

Clinical trials by research area (%)



PATENTS AND LICENSE AGREEMENTS

The Institute currently manages 52 patent families and 8 proprietary software, 38 license agreements have been signed with several industry partners.

During 2017 12 patent applications were filed (5 priority patents and 7 PCTs) and 1 entered in National Phases in several countries. Besides, 6 new license agreements were signed with local and international companies.

Dr. Chamorro
Two Patents were licensed to the spin-off FreeOx

Dr. Gracia-Sancho
One Patent was licensed to the spin-off BLB

Dr. Serra
A Monoclonal antibody was licensed to an international company

Dr. Berruezo
One Patent was licensed to the spin out Galgo Medical

Dr. Pavia
A proprietary software was licensed to a national company

PORTFOLIO OF SPIN-OFFS

The activity of IDIBAPS researchers gave rise to 2 new companies based on the knowledge from IDIBAPS/HCB: FreeOx and BLB.

IDIBAPS researchers have founded 10 spin-offs since 2008, 9 of which are active companies that together employ more than 50 people.

Spinoffs from IDIBAPS researchers were IDIBAPS or FCRB **participate** as shareholders:

TRANSPLANT BIOMEDICALS
https://www.transplantbiomed.com/
Dr. Carmen Peralta

VIRTUAL BODY WORKS
https://virtualbodyworks.com/
Dr. Mavi Sánchez Peralta

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

ESTIMTRACK
http://www.estimtrack.com/
Dr. Balust

OWL METABOLOMICS
http://www.owlmetabolomics.com/
Dr. Caballeria

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

TRANSMURAL BIOTECH
www.transmuralbiotech.com
Dr. Gratacós

BIONURE
www.bionure.com
Dr. Villoslada

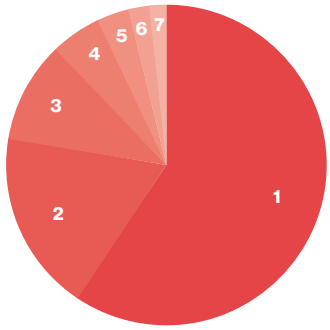
AELIX THERAPEUTICS
www.aelixtherapeutics.com
Dr. Gatell

FREEOX BIOTECH
www.freeoxbiotech.com
Dr. Chamorro

Funding

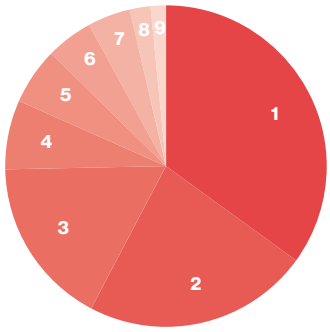
From a financial and managerial perspective, IDIBAPS and FCRB are managed in a global and consolidated manner.
The two institutions share the principal investigators (PI) accredited by IDIBAPS, who have funds, projects and resources in both entities.
Annually, the research executed by IDIBAPS accredited PIs is almost 90% of the executed research activity, with the remaining 10% executed by non-accredited PIs.

In 2017, the two entities recorded 54,4 M€ of income and 54,5 M€ of expenditure, of which 46.2 M€ were directly related to the execution of research projects.
Around 10% of this amount corresponds to the contribution of the Generalitat de Catalunya from the Departament d'Empresa i Coneixement and the Departament de Salut.



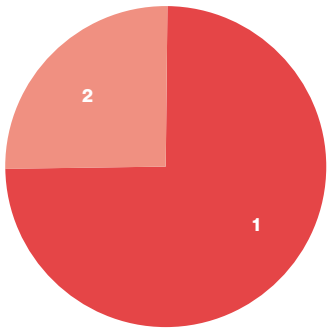
IDIBAPS EXECUTED FUNDS

1	COMPETITIVE PROJECTS	18,289,778 €
2	GENERALITAT DE CATALUNYA	5,971,000 €
3	PRIVATE PROJECTS	2,369,189 €
4	CAPITAL GRANT	1,265,018 €
5	CORE FACILITIES	635,056 €
6	OTHER INCOME	310,823 €
7	FINANCIAL INCOME	77,180 €
	TOTAL	**28,918,044 €**



FCRB EXECUTED FUNDS

1	CLINICAL TRIALS AND PRIVATE PROJECTS	18,289,778 €
2	COMPETITIVE PROJECTS	6,430,741 €
3	DONATIONS AND PATRONAGE	4,350,662 €
4	INTERCOMPANY SERVICES	1,854,391 €
5	TEACHING FUNDING	1,481,480 €
6	RENTAL INCOME	1,247,824 €
7	CAPITAL GRANT	1,140,890 €
8	MANAGEMENT CLINICAL TRIAL	368,384 €
9	FINANCIAL INCOME	2,794 €
	TOTAL	**27,692,189 €**



IDIBAPS EXTERNAL FUNDING PER SOURCE

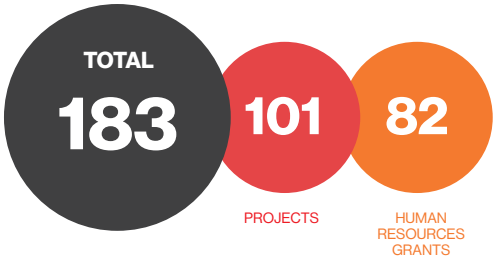
1	NATIONAL	15,011,115 €
2	INTERNATIONAL	5,647,8521 €
	TOTAL	**20,658,967 €**

EXTERNAL FUNDING BY RESEARCH AREA

1	BIOLOGICAL AGGRESSION AND...	1,989,702 €
2	RESPIRATORY, CARDIOVASCULAR AND...	2,086,382 €
3	LIVER, DIGESTIVE SYSTEM AND METABOLISM	7,171,323 €
4	CLINICAL AND EXPERIMENTAL NEURO...	4,738,390 €
5	ONCOLOGY AND HAEMATOLOGY	2,882,674 €
6	OTHERS	1,790,496 €
	TOTAL	**20,658,967 €**

New competitive projects

This external funding supports research projects and human resources grants. Some of these projects also fund equipments or facilities.
The European Regional Development Fund (ERDF) co-funds many of these activities.



INTERNATIONAL **17**

PROJECTS (5 EC COORDINATED) 16

HUMAN RESOURCES GRANT 1

SPANISH **118**

PROJECTS 66

HUMAN RESOURCES GRANTS 52

CATALAN **48**

PROJECTS 19

HUMAN RESOURCES GRANTS 29

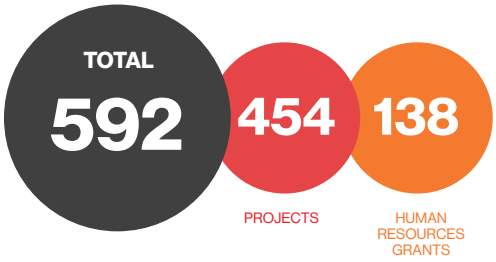
The following table classifies the **183 new competitive projects** obtained in 2017 by funding agency.
Additionally, the funding institutions are grouped in two sections, **public** and **private**:

COMPETITIVE PUBLIC FUNDING	NUMBER OF PROJECTS
TOTAL	**156**
Catalan institutions	**41**
Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)	7
Agència per a la Competitivitat de l'Empresa (ACCIÓ)	2
Fundació Institució Centres de Recerca de Catalunya (I-CERCA)	3
Generalitat de Catalunya	29
National institutions	**101**
Instituto de Salud Carlos III (ISCIII)	78
Ministerio de Economía, Industria y Competitividad (MINECO)	19
Ministerio de Educación, Cultura y Deporte (MECD)	2
Ministerio de Sanidad, Servicios sociales e Igualdad (MSSSI)	2
International institutions	**14**
European Commission	14

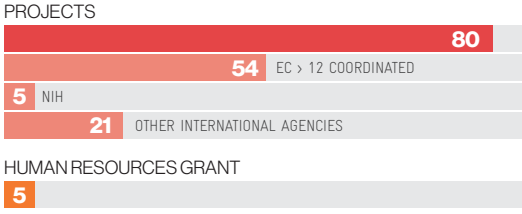
COMPETITIVE PRIVATE FUNDING	NUMBER OF PROJECTS
TOTAL	**27**
Catalan institutions	**7**
Fundació Academia de Ciències Mèdiques i de la Salut de Catalunya i Balears	1
Fundació Catalana de Neurologia	1
Fundació Catalana de Transplantament	1
Fundació La Marató de TV3	3
Fundació Santiago Dexeus Font	1
National institutions	**17**
Asociación Española de Gastroenterología (AEG)	1
Fundación Astrazéneca	1
Fundación Bancaria "La Caixa"	3
Fundación Científica Asociación Española Contra el Cáncer (AECC)	3
Fundación Merck Salud	1
GILEAD Sciencies	6
Laboratorio Stada SL	1
Sociedad Española de Cardiología	1
International institutions	**3**
European Academy of Dermatology and Venereology (EADV)	1
European Foundation for the Study of Diabetes (EASD)	1
European Hematology Association	1

Active competitive projects

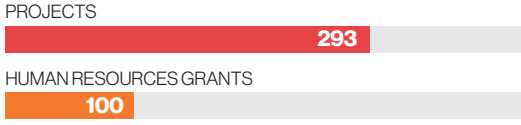
In 2017, IDIBAPS researchers participated in 592 active competitive projects, 153 initiated their activity during the year.



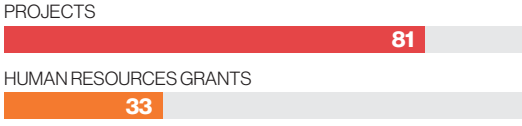
INTERNATIONAL **85**



SPANISH **393**



CATALAN **114**



Leadership in EU funded projects

European projects led by IDIBAPS researchers are presented below:

CLEVER
Contrast-enhanced uLtrasound for livEr-disease eValuation: development and validation of a novel E-Health-software for Risk-stratification.

Dr. Jaume Bosch
2013 - 2017
Call: CE_PEOPLE-2013-IAPP
Official code: 612273

EuCOLONGENE
Cooperation Studies on Inherited Susceptibility to Colorectal Cancer.

Dr. Sergi Castellví
2013 - 2017
Call: CE-COST-2012
Official code: OC-2012-1-11711

iHIVarna
Therapeutic TriMix / mRNA based Vaccine in Chronic HIV-1 Infected Patients Receiving Antiretroviral Therapy.

Dr. Felipe Garcia
2013 – 2017
Call: CE-FP7-HEALTH-IN1-13
Official code: 602570

SloW-Dyn
Dinámica de las oscilaciones lentas: experimentos, análisis, modelos e intervenciones terapéuticas.

Dr. Maria Victoria Sanchez Vives
2015 – 2018
Call: FlaG-ERA ministerio de Economía y Competividad (MINECO)
Official code: PCIN-2015-162-C02-01

Sys4MS
Cuidado personalizado de salud en la Esclerosis Múltiple usando herramientas de medicina de sistemas.

Dr. Pablo Villoslada
2016 – 2019
Call: ERANET 2015
Official code: ID43

HIVACAR
Evaluating a Combination of Immune-based Therapies to Achieve a Functional Cure of HIV Infection

Dr. Felipe Garcia
2017 – 2021
Call: H2020-SC1-2016-RTD
Official code: 731626

INTEGRATE
Joint Action on integrating prevention, testing and linkage to care strategies acros HIV, viral hepatitis, TB and STIs in Europe.

Dr. Agata Raquel León
2017 – 2020
Call: HP-JA-2016
Official code: 761319

LIVERHOPE
Simvastatin and rifaximin as new therapy for patients with decompensated cirrhosis.

Dr. Pere Ginès
2017 – 2022
Call: H2020-SC1-2016-RTD
Official code: 731875

TWIST
Capacity building in the application of EU drug research – Training With STakeholders.

Dr. Antoni Gual
2017 – 2018
Call: CE_JUST-2016-AG-DRU
Official code: 759685

Scientific facilities

CEK, Esther Koplowitz Research Center

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

The building has a laboratory area of 4,860 m² on the ground. In the basement three underground floors offer a total area of 2,485 m², including space for scientific core facilities, a category 2 radioactive non-encapsulated sources type facility (IRA-3029), and a BSL-3 laboratory GMO notified (A/ES/13/I-11).
The CEK building was made possible thanks to the contribution of several public and private institutions, the Generalitat de Catalunya, the Ministerio de Economía y Competitividad, and the Instituto de Salud Carlos III, as well as from the support of other donors such as the Fundación Esther Koplowitz, Fundació Privada Cellex, Acció Sardà Farriol para la Investigación en Diabetes and Laboratorios Esteve.

CELLEX, Biomedical Research Center

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

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

Core facilities

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

- **Biobank of Hospital Clínic-IDIBAPS**
- **Cytometry and cell sorting**
- **Functional Genomics**
- **Magnetic Resonance Imaging**
- **Medical Statistics**

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

PEOPLE

Anna Bosch, PhD
Head of core facilities

Meritxell Rufet
Administrative support

Soraya Pérez
Administrative support

SERVICES

	NEW INTERNAL USERS	NEW EXTERNAL USERS	TOTAL ATTENDED USERS
BIOBANK	33	32	145
CYTOMETRY	5	3	69
GENOMICS	16	12	81
MAGNETIC RESONANCE	14	3	51
MEDICAL STATISTICS	10	5	177

RESEARCH

	PUBLICATIONS	ACKNOWLEDGED PUBLICATIONS
BIOBANK	29	19
CYTOMETRY	-	6
GENOMICS	6	4
MAGNETIC RESONANCE	24	4
MEDICAL STATISTICS	27	-

Biobank of Hospital Clínic - IDIBAPS

Scientific director
FOR FURTHER INFORMATION
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NEUROLOGICAL TISSUE BANK
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TUMOUR BANK
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BLOOD AND FLUID BANK
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PEOPLE
BIOBANK

Joan Albert Barberà, MD, PhD (HCB)
Scientific director (Until April 2017)

Joan Carles García Pagán, MD, PhD (HCB)
Scientific director (Since May 2017)

Anna Bosch, PhD
Head of core facility

PEOPLE
NEUROLOGICAL TISSUE BANK

Ellen Gelpí, MD, PhD
Coordinator/Neuropathologist
(Until June 2017)

Teresa Ximelis
Coordinator (Since July 2017)

Raquel Sánchez-Valle, MD, PhD (HCB)
Clinical Coordinator

Laura Molina, MD, PhD
Neurologist Brain Donor Program
(Since July 2017)

Iban Aldecoa, MD, PhD
Neuropathologist (Since July 2017, HCB)

Sara Charif
Laboratory Technician

Verónica Santiago
Laboratory Technician

Abel Muñoz
Autopsy Assistant

Leire Etxarri
Autopsy Assistant

PEOPLE
TUMOUR BANK

Raquel Bermudo, PhD
Coordinator

Míriam Cuatrecasas, MD, PhD (HCB)
Clinical Advisor

Amanda Denuc, PhD
Laboratory Technician

Laura Gelabert
Laboratory Technician

Mónica Marín (HCB)
Laboratory Technician

Marta Valor
Laboratory Technician

Mercedes Gonzalez-Ruiz
Laboratory Technician

Ángela Martín
Informed Consent Manager

PEOPLE
BLOOD AND FLUIDS BANK

Verónica Fernández, PhD
Coordinator

Anna Morales
Laboratory Technician

Regina Cañaveras
Laboratory Technician

Roser Mas
Laboratory Technician

Mercedes Gonzalez-Ruiz
Laboratory Technician

DESCRIPTION

The Biobank coordinates 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 gathered by the research groups. All the procedures performed at the Biobank are carried out under a quality management certification (ISO9001).
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:

Neurological tissue bank
A nervous tissue repository (brain and spinal cord) created from donations from deceased donors with or without neurological disorders. Brain tissue samples are sent to scientific researchers worldwide, in order to help to increase the understanding of the human brain and to develop therapies for neurological diseases.

Tumour bank and anatomical pathology collections
It is a repository of tumoural and non-tumoural frozen tissue samples from around 12.000 cancer patients. Additionally, the Anatomical Pathology collection consists of paraffin-embedded tissue samples from tumors and other diseases, which gathers more than two million tissue blocks. All these samples are surplus to diagnostic requirements from the Department of Anatomical Pathology in the Hospital Clínic and are essential for current large-scale tissue research projects. Different diagnosis consultants from Hospital Clinic help us in the histopathological evaluation of samples.

Blood and fluids 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 fluids are taken for lab tests and blood and fluids donation.

SERVICES

The Biobank of Hospital Clínic – IDIBAPS offers a wide variety of human biological samples along with technical 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
- Brain and spinal cord tissue and CSF from donors affected by neurologic diseases.
- Frozen and paraffin-embedded tissues representing the most common neoplasms and paraffin-embedded samples from a wide variety of diseases.
- DNA, serum, plasma, urine 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.
- Harmonization of quality procedures for the handling of DNA samples.

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).
- Histological staining.
- Definitive neuropathological diagnosis of neurological diseases.
- Laser microdissection.
- Tissue microarray construction (TMA).
- 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 and RNA 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
- Biological safety cabinets for processing fresh brain tissue.
- Biological safety cabins for prion diseases western-blotting.
- Microtomes and equipment for formalin fixation and paraffin embedding (Leica Microsystems).
- Cryostat (Leica Microsystems).
- Gas filtration cabinet.
- Automated immunostainer (DAKO autostainer plus).
- Refrigerator and -20ºC freezer.
- Autoclave.
- 5-headed microscope.

Tumour bank
- Tissue microarrayer TMA Master (3Dhistech) (UB Faculty of Medicine / FEDER).
- Laser microdissector system LMD7000 (Leica Microsystems).
- 2 Microtomes and 2 cryostats (Leica Microsystems).
- Coverslipper for glass slides (Dako)
- 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).
- QIAcube for automatization of QIAGEN spin column protocols (DNA, RNA, Protein extraction from different sample origin).

Blood and fluids bank
- Programmable freezer with a controlled rate freezer.
- Chemagic MSM1® automated device for obtaining DNA from large volumes of blood.
- QIAcube for automatization of QIAGEN spin columns (DNA, RNA, Protein extraction from different sample origin).
- TwoTecan EvO150® automated stations for sample aliquoting.
- TC Automated Cell Counter (Bio Rad).
- Cabinets for isolating cells under sterile conditions.
- Cell immortalisation platform.
- Computer systems for managing samples and related data.
- Epoch Micro-Volume Spectrophotometer System.
- Trinean DropSense96 UV/VIS droplet reader.

Flow cytometry and cell sorting

FOR FURTHER INFORMATION
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PEOPLE

Crespo, Isabel, PhD
Head of core facility

López, Cristina, PhD
Laboratory Technician

Ozcoz, Sara
Laboratory Technician

BRIEF DESCRIPTION

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

SERVICES

- Flow cytometer analysis of fluorescently labelled samples, detecting up to 20-parameters in a single sample.
- Cell sorting of fluorescently labelled samples, detecting up to 20-parameter. Sorting into an array of up to 4 tubes, plates and slides.
- Imaging in flow analysis of fluorescently labelled cells with up to 12-fluorescent labels.
- Magnetic cell sorting.
- Training is available to enable investigators and their staff to run the analysers independently.

EQUIPMENT

- **BD FACSCalibur**
  2 LASER. Up to 4 fluorescence.
- **BD FACSCantoII**
  Up to 3 LASER. Up to 8 fluorescence.
- **BD LSRFortessa SORP + HTS**
  Up to 5 LASER, Up to 18 fluorescence.
- **AMNIS ISX**
  2 digital cameras, Up to 12 fluorescence channels.
- **BD FACSAria SORP/ARIAII**
  Up to 5 LASER, Up to 18 fluorescence.
- **Magnetic cell sorter autoMACSPro**

Functional genomics

FOR FURTHER INFORMATION
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PEOPLE

Pedro Jares, PhD
Scientific director

Magda Pinyol, PhD
Head of core facility

Helena Suàrez, PhD
Transcriptomics Coordinator

Anna Enjuanes, PhD
NGS Coordinator

Montse Sànchez
Laboratory Technician

Laura Pla
Laboratory Technician

BRIEF DESCRIPTION

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

SERVICES

- Quantification of nucleic acids (Nanodrop, Qubit).
- Qualitative analysis of nucleic acids (Bioanalyzer 2100, TapeStation 4200).
- Expression or Genotyping analysis by Real-time PCR (BioMark, Fluidigm).
- Digital PCR (BioMark, Fluidigm).
- Digital quantification of nucleic acids (nCounter, Nanostring).
- Genome Wide Expression analysis and Copy Number Variations analysis by microarrays (GeneChip System, Affymetrix).
- Genome Wide Expression analysis and Genome Wide Genotyping analysis (GWAS) by microarrays (GeneTitan System, Affymetrix).
- CGH-Arrays (Agilent).
- Fragmentation of nucleic acids and chromatin (Covaris S220).
- Pyrosequencing (PyroMark Q24, QIAGEN).
- Next generation Pyrosequencing (MiSeq, Illumina).

EQUIPMENT

- Synergy2.
- NanoDrop 1000 .
- Qubit.
- Bioanalyzer 2100 (Agilent).
- TapeStation 4200 (Agilent).
- BioMark (Fluidigm).
- nCounter (Nanostring).
- GeneChip System (Affymetrix).
- GeneTitan System (Affymetrix).
- Liquids Robot Biomek FX (Beckman).
- Microarrays Agilent platform .
- PyroMark Q24 (QIAGEN).
- Covaris S220.
- MiSeq (Illumina).

Magnetic resonance imaging

FOR FURTHER INFORMATION
imatge@idibaps.org

PEOPLE

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

Clinical 3T MRI Unit
Núria Bargalló MD, PhD (HCB)
Coordinator

César Garrido (HCB)
Radiographer

Sandra Pineda
Radiographer

Experimental 7T MRI Unit
Guadalupe Soria, PhD
Coordinator

Xavier López Gil
Laboratory Technician

Image Analysis Advisors
Emma Muñoz Moreno, PhD
Engineer Analyst

José Carlos Pariente
Image Analysis

Sara Andrés Caballero
Image Analysis

Raúl Tudela, PhD (CIBER-BBN)
Image Analysis

BRIEF DESCRIPTION

The MRI core facility is equipped with a PRISMA 3 Tesla magnet for humans and a 7 Tesla Bruker magnet for small animal imaging. In 2017, the Magnetom TRIO 3T magnet was upgraded to a Magnetom PRISMA 3T becoming a more powerful system which enables to get better imaging capabilities and long-lasting stability.
This upgrade was possible thanks to own funds and funds obtained from Ministerio de Economia y Competitividad and FEDER (European Funds for regional development).

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.
- Training of the users and keeping the state of art in MRI techniques to enable researchers conducting experimental and clinical studies, thereby allowing them to explore the advantages of translational research.
- To complement this infrastructure we count with the Laboratory of Image Analysis where the users have different workstations available to use with the most common softwares used in the MR Field installed.

SERVICES

- Anatomical imaging (body, brain and heart).
- T1, T2 Relaxometry techniques.
- Diffusion Tensor Imaging.
- BOLD fMRI .
- Arterial Spin Labeling .
- Perfusion techniques (brain and heart).
- Body and brain 1H spectrometry.
- Susceptibility weighted imaging.
- Time of flight and contrast angiography.
- Cardiac Imaging.
- MR coronariography.
- MR colonography.
- MR enterography.
- Body and extremities angiography.
- Plaque characterization.

EQUIPMENT

PRISMA fit 3 Tesla Siemens for clinical imaging:
- Gradient system XR: (80/200), with E11c software.
- Head/ neck coli 20 channels 440 mm × 330 mm × 370 mm.
- Head coli 32 channels 300 mm × 390 mm × 315 mm.
- Head/ neck coli 64 channels 435 mm × 395 mm × 350 mm.
- Body coil 18 channels.
- Spine coil 32 channels.
- Visuastim digital .
- Visual and auditory stimuli presentation system with Presentation® license.
- Screen to Project visual stimuli with the 32 channels head coil .
- Remote controlling buttons for responding. in fMRI studies.

Biospec 70/30 Brukermaget for small animal imaging:
- Gradient system of 400 mT/m, withParavision 6.0 software.
- Volume coil for mouse body: inner diameter of 35 mm .
- Volume coil for rat body: inner diameter of 72 mm.
- Volume coil for guinea pig or small rabbit: inner diameter of 154 mm.
- Rat brain 2 x 2 surface array coils .
- Mouse brain surface coil .
- Rat cardiac 4 x 1 surface array coil (with CINE acquisition sequence).
- Electric stimulator for fMRI.
- Inhalation anaesthetic system including animal monitoring.
- 4 PC for image processing and analysis.

Image Processing Lab:
- 2 dedicated workstations (linux) and 7 standard performance.
- PC (5 dual windows-linux, 2 windows) for image postprocessing.
- 10 low performance PC.
- Software licences: 10 Matlab (with 2 Image processing toolbox and 2 signal processing toolbox), 2 LcModel, 1 AnalyzeDirect, 1 Syntetic MRI.

Medical statistics

FOR FURTHER INFORMATION
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PEOPLE

Ferran Torres, MD, PhD
Head of core facility

José Ríos, PhD
Coordinator

Gema Domenech
Statistician

Georgina Casanovas (FCRB)
Statistician

Rafel Barceló (FCRB)
Statistician

Sandra Serrano
Data Manager

Alex Bernalte (FCRB)
Data Manager

Juanjo Aragonés (FCRB)
Data Manager

Enric Marin (FCRB)
Data Management Assistant

DESCRIPTION

Medical Statistics is an IDIBAPS core facility that provides methodological and statistical support for IDIBAPS research projects and those of allied institutions.
The main objective is to promote clinical research excellence and facilitate resources to achieve this.
The platform's tasks are conducted in compliance with the International Conference of Harmonisation guidelines, European and local laws, as well as with the regulatory recommendations. Standard Operating Procedures (SOPs) are in place to fulfil those standards.

SERVICES

Assessments and consultancy Services.
Short-term statistical and methodological assessments, including **(a)** statistical design of studies, **(b)** sample size calculation, **(c)** assessment of data collection for the analysis **(d)** methodological and statistical assessment of research projects.

Sample projects.
- *Creation and maintenance of a clinical trials database:* **(a)** creation of the eCRF (electronic cases report form), **(b)** creation of data management and validation plans and consensus with the research team, **(c)** traceable data exportation analysis systems.
- *Statistical analysis of clinical trials or other projects:* **(a)** creation of and consensus on the most appropriate statistical analysis plans according to the type of data and the study objective, **(b)** creation of the most suitable statistical program for the study objective, with emphasis on the traceability of results, **(c)** preparation of statistical reports, and collaboration in writing and supervising articles on monitoring studies.

EQUIPMENT

The facility is fully equipped with the latest software for statistics and data management, including:

a) SAS, East,Stata, SPSS, JMP, NCSS and R statistical programs.
b) nQueryand PASS for sample sizes,
c) electronic Clinical Trials data collection: MACRO.
d) WinNonLin for PK/PD analysis.

Institutional projects

BITRECS

Biomedicine international training research programme for excellent clinician-scientists.

WEB
www.bitrecs.idibaps.org

BITRECS is a 60-month research and training fellowship programme having as main aim to recruit 10 excellent and highly motivated postdoctoral clinician-scientists through international peer-reviewed calls.
The program was launched in 2017 as a pioneer initiative in clinician-scientist promotion, with the support of the European Commission.

A 36-month contract will be offered to the selected fellows. They will implement their own research project fitted into one of the IDIBAPS research lines while performing one of the two available mobility schemes.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 754550

SIMPACT

Synergies in International Management and Promotion Activities for a Common Success Leadership Strategy in R&D&I .

PARTICIPANTS
IDIBAPS (Coordinator) and Clinic Foundation for Biomedical Research, FCRB.

SIMPACT is the 3-year collaborative project (2015-2018) between IDIBAPS and FCRB to increase the participation, success and leadership of both institutions in Europe and worldwide. It is supported by the Spanish Ministry of Economy and Competitiveness (MINECO).

The specific objectives of the project are:

1) To increase the visibility and recognition of the Institute internationally.
2) To improve the quality of the institutional management support in European Projects.
3) To create new synergies and long-term collaborations with actors of the private sector.

Many activities performed during 2017 have provided results that contribute to the IDIBAPS' purpose of becoming an international referent Institute in translational research.

Europa Redes y Gestores, reference EUC2014-C-51553

HRS4R

Human Resources Strategy for Researchers.

WEB
www.idibaps.org/research-career/en_hrs4r.html

HR EXCELLENCE IN RESEARCH

IDIBAPS is awarded with the logo **"HR Excellence in research"** since 2015.

In 2017 some of activities included in the 2015-2018 Action Plan have been implemented. Moreover, a complete analysis of its performance has also been developed with the purpose to submit to the European Commission both the interim assessment and the Updated Action Plan (2017-2020).

Training

Doctoral theses

117 Doctoral theses defended in 2017.

20 Theses with European mention.

THESIS AUTHOR		TITLE	THESIS DIRECTORS
Cristina Alarcón Vila		Functional and metabolic interplay between methionine metabolites, acid sphingomyelinase and phosphatidylcholine: Impact in steatohepatitis	Fernández-Checa JC, García-Ruiz MC
Pablo Barrio Gimenez		Ethylglucuruoide replacing ethanol in the routine screening of alcohol depenent outpatients: clinical implications	Gual A, Vieta E
Marc Catalán Garcia		Mitochondrial profile and amyloidogenic molecules in sporadic inclusion body myositis	Grau JM, Garrabou G
Francesca Crovetto		Development of combined screening test for the prediction of preeclampsia and intrauterine growth restriction in the first trimester of pregnancy	Gratacós E, Figueras F
Tamara Cruz Santa Cruz		Characterization of the pulmonary and systemic immune response in relation with lung stem cells in patients with COPD	García-Navarro A, Faner R
Elfi Egmond		Health related quality of life and risk factors in hepatitis C patients	Martín-Santos R, Navinés R
Miriam Illa Armengol		Brain effects of fetal growth restriction and their prevention in an animal model	Gratacós E, Figueras F
Marta Matamala Gomez		The use of immersive virtual reality in neurorehabilitation and its impact on neuroplasticity	Sanchez Vives MV
Gisela Mezquida Mateos		Fenotipo y Genotipo de los Síntomas Negativos en la Esquizofrenia: Conceptualización, Evaluación y su Relación con el Polimorfismo VAL66MET del BDNF	Bernardo M, Penadés R
Agrin Moeini Mortazavi		Liver cancer: Molecular classification of Cholangiocarcinoma	Llovet JM
Isabel Quintanilla		New insignhts into the colorectal carciongenesis: from early precursor lesions to the roele of aneuploidy	Pellisé M, Camps J
Beatriz Rebollo González		Synaptic and non-synaptic propagation of slow waves and their modulation by endogenous electric fields	Sanchez Vives MV
Bibiana Rius Boadas		Role of specialized pro-resolving lipid mediators and ER stress in obesity derived non-alcoholic fatty liver disease	Clària J
Maria Sanz de la Garza		Characterization of the spectrum of cardiac adaptation to endurance exercise: impact of gender and training load	Sitges M
Nicola Sarbu		Advanced and conventional magnetic resonance imaging techniques: biomarkers in reurolupus	Bargalló N
Ines Tadeus Simoes		Characterization of the in vivo immunomodulatory properties of CD5 and CD6.	Lozano F, Martínez V
Keyvan Torabi Asensio		La disomia uniparental adquirida en el càncer colorectal	Camps J, Miró R, Ponsa I
Imma Torres Vilamajo		Comorbilidad entre el trastorno bipolar y el trastorno por déficit de atención e hiperactividad en el adulto	Goikolea JM, Martinez-Aran A
Marta Ulldemolins Gómez		Optimization of meropenem and piperacillin dosing in critically ill patients with septic shock and acute kidney injury requiring continuous renal replacement therapy: a pharmacokinetic and pharmacodynamic study	Soy D, Martín I
Antoni Vilaseca Cabo		Molecular and clinical response of renal cell carcinoma to intermittent hypoxia	Musquera M, Almendros I

Robert Albero Gallego	Mantle Cell Lymphoma pathogenesis: another turn of the screw to cyclin D1 overexpression	Campo E, Jares P
Rafael Alcalá Vida	PKC and nuclear lamina alterations: Involvement in Huntington's disease pathophysiology	Pérez E
Rosanel Amaro Rodríguez	Nuevas consideraciones en el pronóstico de la neumonía adquirida en la comunidad	Torres A
Lidia Argüello Viudez	Pólipos gástricos: tipos, tratamiento endoscópico y complicaciones asociadas	Fernández Esparrach G, Ginés MA
Marta Arigita Lastra	Valor de la translucencia nucal y ductus venoso, en la detección de malformaciones, translocaciones disbalanceadas y enfermedades monogénicas en la ecografía de las 11-14 semanas	Borrell A
Helena Ariño Rodríguez	Neurological syndromes associated with antibodies against the glutamic acid decarboxylase (GAD)	Graus F, Saiz A
Angela Arranz Betegón	Evaluación de un programa de intervención prenatal para embarazadas con fetos pequeños para la edad gestacional	Botet F, Gratacós E
Josep Maria Augé Fradera	Estimació del risc de neoplàsia colorectal avançada a partir de la quantificació de l'hemoglobina fecal en el cribratge del càncer de còlon i recte	Castells A, Molina R
Mariona Balfegó Díaz	Diabetes mellitus tipus 2: impacte metabòlic d'una dieta rica en sardina	Gomis R
Núria Baños López	Cervical consistency index and quantitative cervical texture analysis by ultrasound to predict spontaneous preterm birth	Palacio M, Gratacós E
Anton Baranov	Scarred Uterus: Subsequent pregnancy and delivery	Vikhareva O, Figueras F
Anael Barberán Garcia	Deployment of novel integrated care services to promote healthy lifestyle: physical activity as a use case	Roca J, Blanco I
Xoana Barros Freiria	FGF23 y vitamina D tras el trasplante renal	Campistol JM
Nuria Berrocal Izquierdo	Frecuencia y factores de riesgo de enfermedad cerebrovascular en pacientes con esquizofrenia y trastornos relacionados	Bernardo M
Delia Blaya Diez de Revenga	Estudio de los microRNAs en la fisiopatología de la hepatitis alcoholic	Sancho-Bru P, Ginés P
Laia Bonjoch Gassol	Estudi dels exosomes com a mecanisme de comunicació intercel·lular en patologies pancreàtiques	Closa D, Pastor M
Bibiana Cabrera Llorca	Neurocognición y Biomarcadores Inflamatorios en Primeros Episodios Psicóticos	Bernardo M
Noelia Caro Pérez	Factores virológicos, inmunológicos y epidemiológicos relacionados con la hepatitis C y su tratamiento	Pérez del Pulgar S, Londoño MC
Vanessa Casas López	Proteome characterization of Brachyspira strains. Identification of bacterial antigens	Abián J, Carrascal M
Patricia Castaño Prat	Oscilaciones lentas en la red cortical alterada:una caracterización de los modelos murinos 3xTg-AD, SAMP8 y Fmr1KO	Sanchez Vives MV
Aida Castellanos Esparraguera	Role of K2p channel TRESK in nocicepive and chronic pain	Gasull X
Ana Lucía Castillo Figueroa	The impact of nutrients on clock genes and metabolism: their role for the prevention and treatment of metabolic diseases	Gomis R
Marta Catalán Adell	Ateroesclerosis Preclínica en pacientes con Diabetes tipo 2 de reciente diagnóstico	Sisó A
Alexandru Ciudin	El uso de la TAC abdominal para el diagnóstico de los estadios tempranos del desarrollo de la enfermedad litiásica	Alcaraz J, Luque Mª
Mercè Comes Forastero	Impacto del trastorno bipolar en pacientes de edad avanzada	Vieta E

Marlies Cortés Hinojosa	Role of ZEB1 in macrophages during homeostasis, inflammation and cancer	Postigo A
Oriol de Barrios Barri	Role of ZEB1 in tumor progression: regulation of cell invasion and senescence	Postigo A, Castells A
Anna Esteve Arenys	Innovative targeted therapies for chemo-refractory B cell non-Hodgkin lymphomas	Roué G
Carlos Fernández Carrillo	Nuevos factores del hospedador en la fisiopatología y la respuesta al tratamiento antiviral de la infección por el virus de la hepatitis C	Pérez del Pulgar S, Diez J
Andrea Fernández Vidal	ACSL3 role in the metabolism of Lipid Droplets and implications in hepatic regeneration	Pol A
Xènia Ferrer Cortès	Identificació de mutacions en gens implicats en el metabolisme de l'àcid lipòic en l'acidúrica 3- metilglutacònica	Ribes A
Laura Foj Capell	Nous biomarcadors per la detecció i pronòstic del càncer de pròstata	Filella X
Mª Rosa Gallego Sánchez	Papel de la vía de IGF y de metaloproteasa-7 en la resistencia adquirida al tratamiento con quimioterapia y con anticuerpos anti-EGFR en cáncer colorrectal metastático	Maurel J
Manel Garabito Montoya	Mechanisms for sex-associated differences of vascular aging	Roque M, Dantas AP
Jéssica García Lucio	Remodelat vascular a les malalties pulmonars: perfil d'expressió gènica i biomarcadors	Barberà JA, Peinado V
Orlando García Bosch	Diagnostic and therapeutic strategies in inflammatory bowel disease	Panés J
Gemma Garrido García	Estudi de l'eficàcia d'un programa de rehabilitació neuropsicològica en pacients amb esquizofrènia	Penadés R, Barrios MT
Eduardo Garrido Sagarzazu	New strategies of inhibition of K-Ras and study of the K-Ras/CaM interaction	Agell N, Rubio J
Júlia Gasull Camós	Role of the infralimbic cortex in depression: Functional connectivity and behavioral phenotypes	Artigas F, Castañé A
Víctor Luis Gil Espinosa	Análisis de factores pronóstico y estratificación del riesgo en pacientes con insuficiencia cardiaca aguda atendidos en los servicios de urgencias	Miró Ò, Llorens P
Sofía González Ortiz	Resonancia magnética funcional aplicada al manejo de tumores cerebrales en el entorno clínico	Bargalló N
Blanca González Farré	Síndromes linfoproliferativos asociados a inmunodeficiencias secundarias: papel de la infección por virus herpes oncogénicos y la diferenciación plasmocelular	Campo E, Martínez A
Ulises Granados Oliveros	Utilidad de PET/TC con 18F-fluorodesoxiglucosa en la detección de infecciones cardiovasculares y embolias sépticas hematógenas	Fuster D, Pons F
Oriol Grau Rivera	Enfermedades priónicas y otras demencias rápidamente progresivas: caracterización clínico-patológica, neuroinmunológica y mediante neuroimagen por resonancia magnética	Sanchez-Valle R, Gelpi E
Isabel Graupera Garcia-Milà	Inflamació sistémica i cirrosi. Valor pronòstic de biomarcadors inflammatoris enla cirrosi descompensada	Ginés P, Villanueva C
Gonzalo Grazioli	Prevención de muerte súbita en el deporte mediante el cribado pre-participativo	Sitges M
Inés Guardia Pena	Caracterización de factores implicados en el desarrollo estriatal	Canals JM, Martín R
Carolina Guiriguet Capdevila	Efectividad de una alerta en la historia clínica informatizada de atención primaria para aumentar la participación en un programa poblacional de cribado de cárcer colorectal	Castells A, Caballeria L
Sergi Guixé Muntet	Disfunció microcirculatòria sinusoïdal hepàtica en la cirrosi i dany per isquèmia/reperfusió: mecanismes involucrats i noves dianes terapèutiques	Gracia-Sancho J, Bosch J
Anna Sandra Hernández Aguado	Perinatal outcomes, mitochondrial toxicity and apoptosis in hiv-treated pregnant women and in utero exposed newborns	Coll O, Garrabou G

José Esteban Inciarte Mundo	Factores pronóstico de recidiva en pacientes con artritis reumatoide y artritis psoriásica en remisión o baja actividad de la enfermedad durante el tratamiento biológico	Sanmartí R
Cristina López Ferraz	Seguimiento del paciente sometido a ventilación mecánica; detección de complicaciones infecciosas	Torres A, Ramírez P
Alícia López García	Autologous hematopoyetic stem cell transplant in refractory Crohn's disease	Panés J
Olga López Rodrigo	Caracterizaciónbiológica y molecular de síndromesteratozoospérmicoscausantes de la infertilidadmasculina	Bassas L, Oliva R
Santiago Marfà Bruix	Detección e identificación de biomarcadores precoces de fibrosis hepática mediante técnicas proteómicas de alto rendimiento	Jiménez W
Susana Martín Rodríguez	Inflamación, estrés oxidativo y sistema inmune en el desarrollo de disfunción endotelial asociada a enfermedades inflamatorias crónicas	Díaz-Ricart M, Escolar G
Eloy Martínez de las Heras	Desarrollo de una metodología de reconstrucción de fibras de sustancia blanca en difusión por RM y su aplicación al estudio de la relación entre la conectividad estructural cerebral y el rendimiento cognitivo en pacientes con EM	Llufriu S, Prats A
Pablo Martínez-Vicente	Homólogos de inmunoreceptores de la familia SLAM codificados por citomegalovirus	Angulo A
Manel Mata Cases	Evolución de la atención a la diabetes tipo 2 en Catalunya, 1993-2013	Novials A, Franch N
Maria Antonella Mollica	Nuevos instrumentos subjetivos y objetivos para evaluar la fase preclínica de la enfermedad de Alzheimer	Molinuevo J, Rami L
Ester Mora Claramunt	Neuropsicologia i factors neurobiològics en el trastorn bipolar	Vieta E
Laura Morata Ruiz	Factores determinantes de la concentración plasmática de linezolid. Implicaciones terapéuticas	Martínez JA, Soriano A
Birgit Nierula	Multisensory processing and agency in VR embodiment; interactions through BCI and their therapeutic applications	Sanchez Vives MV, Slater M
Nuria Nieto Nicolau	Terapia celular para la reparación y regeneración de la superficie ocular: potencial terapéutico de las células progenitoras mesenquimales.	Casaroli-Marano R
Diego Penela Maceda	Extrasistolia ventricular frecuente en pacientes con disfunción ventricular izquierda. Implicaciones clínicas y beneficio de la ablación mediante radiofrecuencia	Berruezo A
Maria Francesca Perelló Serra	Nous marcadors clínics i tractament immunològic de l'endometriosi	Carmona F, Martínez Zamora MA
Juan Manuel Pericas Pulido	Enterococcus faecalis infective endocarditis: epidemiological, clinical and therapeutic changes at the turn of the 21st century	Miró JM, García de la Mària C
Sonia Pernas simon	Marcadores predictivos de respuesta a quimioterapia primaria + trastuzumab en cáncer de mama HER2-positivo	Prat A
Mònica Piquer Gibert	Fenotips dd'immunodeficiència comuna variable (IDCV) en pacients pediàtrics. Correlació genotip-fenotip en l'evolució clínica i el tractament dels pacients	Martín MA, Juan M
Lluís Pujades Mestres	Apixaban en la prevención de complicaciones trombóticas: Mecanismos adicionales de su acción antihemostática	Escolar G, López I
Arturo Renú Jornet	Daño de la barrera hematoencefálica en el ictus isquémico agudo: Marcadores de neuroimagen y significado pronóstico	Chamorro Á, Amaro S
Adalgiza Reyes Romero	Estudio proteómico en pacientes con metástasis hepáticas de cáncer colo-rectal. Identificación de diferentes perfiles proteómicos en relación a los criterios clínico patológicos convencionales de gravedad	Forner A
Ana Carolina Rhodes Cabrerizo	Caracterización de células tumorales circulantes en pacientes con carcinoma hepatocelular. Función de EpCAM en la metástasis	Bruix J
Enrique Antonio Rijo Mora	Análisis de la expresión de las moléculas relacionadas con el complejo principal de histocompatibilidad de clase I Gen A (MICA) y de NKG2D como respuesta al estrés celular en el cáncer urotelial de vejiga	Alcaraz J, Lloreta J
Elena Rioja Peñaranda	Hallazgos clínicos y radiológicos tras la cirugía endoscópica de la base de cráneo	Alobid I, Enseñat J

Amelia Rodriguez Aranda	Individualized training in ART	Fàbregues F, Vassena R
Mérida Rodriguez López	Dynamics of cardiovascular remodeling in relation to fetal growth restriction across life course	Crispi F, Gratacós E
Victor Rodriguez Freixinos	Implicació pronóstica de la infecció per virus del papiloma humà en tumors d'orofaringe i cavitat oral localment avançats irresecables	Prat A
Carlos Rodríguez de Lope López	Evaluación y optimización del tratamiento de los tumores hepáticos primarios de pequeño tamaño (< 2 cm)	Bruix J, Forner A
Alejandro Roisman	Análisis de los perfiles de expresión de genes codificantes y no codificantes en linfomas no- Hodgkin	Hernández L, Slavutsky I
Mireia Rosa Justicia	Caracterísitiques clíniques i neuropsicològiques en nens i adolescents amb trastorn de l'espectre autista d'alt funcionament i en els seus germans	Calvo R, Lázaro L
Maria Rovira Rigau	Adenovirus oncoselectius pel tractament de càncer de pàncrees. Combinació d'estratègies de direccionament a tumor i bioselecció de microRNAs potenciadors de l'activitat adenoviral	Fillat C
Jordina Rovira Solé	Impacte de la cèl·lula d'origen i de la mutació de MYD88 en la resposta i supervivencia dels pacients amb linfoma difús de cèl·lues grans B	López Guillermo A
Cira Rubies Espinalt	Estudi de l'exercici físic intens i la síndrome de l'apnea del son com a factors de risc emergents per a patologia cardiovascular. Caracterització en models animals	Batlle M, Guasch E
Adela Saco Álvarez	Microscopía virtual en diagnóstico y docencia en un hospital universitario	Ordi J,Ramirez J
Ana Sánchez Escuredo	Empleo sistemático de biopsias renales pre-implante en donantes de criterios expandidos	Oppenheimer F
Sofia Seinfeld	Improving empathy in domestic violence offenders through perspective-taking in immersive virtual reality	Sanchez Vives MV, Slater M
Anne-Maria Siegert	Membrane trafficking of TGF-beta and transcriptomic analysis in Marfan syndrome	Egea G
Laura Siles Mena	Role of ZEB1 in skeletal muscle: regulation of cell differentiation, response to tissue damage and regeneration	Postigo A
Carla Solé Cañadas	Diferenciación plasmocelular en linfomas no-Hodgkin de células B: implicaciones clínicas y terapéuticas	Martinez A, Roué G
Pilar Toledano Sierra	Afectación neurológica en el lupus eritematoso sistémico: Alteraciones en la neuroimagen y caracterización de la afectación del sistema nervioso periférico	Cervera R, Espinosa G
Núria Tort Colet	Emergent rhythmic activity and functional connectivity in the thalamocortical circuit at different brain states	Sanchez Vives MV, Mattia M
Mª del Carmen Vallejo Valdivia	Interacción cholesterol-gangliósido GD3 en fibrosis hepática	García-Ruiz MC, Fernández-Checa JC
Anna Vidal Crespo	Targeting the crosstalk between tumor cells and microenvironment: a new therapeutic approach for the treatment of lymphoid neoplasms	Perez-Galan P, Campo E
Maria Vila Casadesús	Design of Bioinformatic Tools for Integrative Analysis of microRNA-mRNA interactome applied to digestive cancers	Lozano J, Gironella M
Marina Vilsaeca Barceló	Mecanismes involucrats en la regulació de la resistència vascular intrahepàtica en la cirrosi: paper dels anticoagulants i antioxidants	García-Pagán JC, Gracia-Sancho J
Cintia Zimerman De Meireles	Simvastatina como fármaco hepatoprotector	Bosch J

Seminars

58 Institutional Seminars

IDIBAPS SEMINAR
9

IN -HOUSE SEMINARS
9

NEUROSCIENCES SEMINAR
18

CAMPUS CLINIC CANCER SEMINAR
10

CORE FACILITY SEMINAR
6

IIBB-CSIC/IDIBAPS SEMINAR
2

LIVER SEMINAR
4

2017
IDIBAPS AUTUMN SEMINARS

SEPTEMBER
OCTOBER

Venue
Esteve Auditorium
idibaps-CEK Building
Rosselló 149-153, Barcelona
info@idibaps.org

IDIBAPS SEMINAR
IDIBAPS IN-HOUSE SEMINAR
NEUROSCIENCES SEMINAR
CAMPUS CLINIC CANCER SEMINAR
IDIBAPS CORE FACILITY SEMINAR
IDIBAPS LIVER SEMINARS

NEW VENUE

Venue
1 Sala 1, planta baixa CEK
2 Sala Farreras Valenti (HCB)

IDIBAPS

September 4th - 15.00h
Mechanisms of normal and impaired consciousness in epilepsy
Hal Blumenfeld, MD PhD
Director, Yale Clinical Neuroscience Imaging Center. Professor of Neurology, Neuroscience and Neurosurgery, Yale University School of Medicine

September 13th - 16.00h
Hepatic macrophages in liver diseases
Frank Tacke, MD PhD
Professor of Medicine
University Hospital Aachen, Germany

September 26th - 15.00h
Blood brain barrier disruption in acute ischemic stroke: assessment with perfusion neuroimaging and clinical relevance
Sergio Amaro, MD PhD
IDIBAPS Researcher
Brain ischemia: clinical and experimental studies

Multimodal assessment of visual pathway: an opportunity to understand and monitor MS
Elena Hernández Martínez de Lapiscina, MD Phd
IDIBAPS Researcher
Pathogenesis and new treatments in multiple sclero

September 27th - 15.00h
Computational approaches to understand the neural mechanisms of psychosis. Evidence from fMRI, PET and behavioural studies
Guillermo Horga, MD PhD
Assistant Professor of Clinical Psychiatry
University of Columbia

October 4th - 16.00h
Acute on chronic liver failure
Rajiv Jalan, MD PhD
Professor of Hepatology at University College London

NEW VENUE
October 9th - 13.15h
Integrative genomics identifies positionally-conserved lncRNAs necessary for the specification of pancreatic lineages in development and disease
Luis Arnes, PhD
Department of Systems Biology
Columbia University Medical Center

October 18th - 15.00h
IL-6/IL12 superfamily of cytokines and vascular inflammation in giant-cell arteritis
Maria Cinta Cid, MD PhD
IDIBAPS Group Leader
Systemic vasculitis

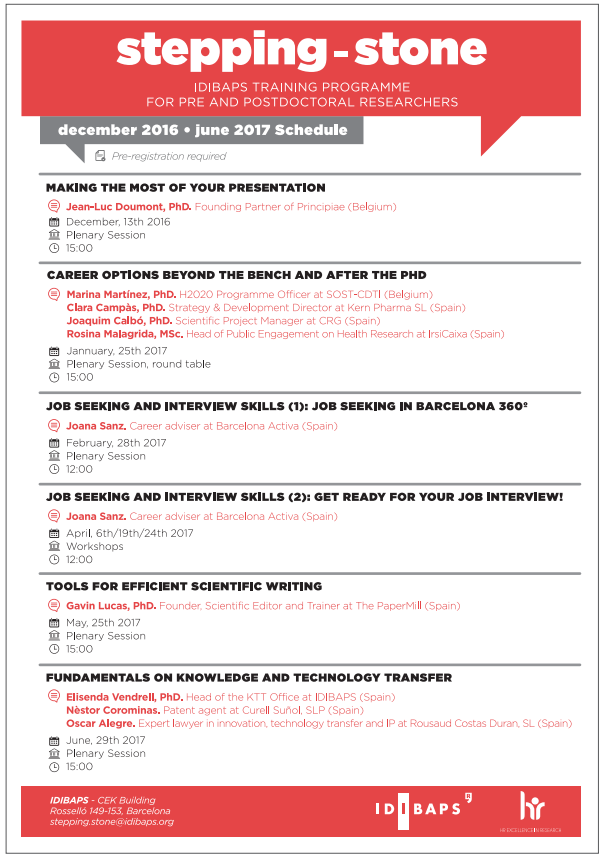
October 25th - 15.00h
NGS target enrichment solutions (the power of NGS targeted resequencing)
Anna Enjuanes, PhD
Next Generation Sequencing Specialist
IDIBAPS Functional Genomics Core Facility

October 27th - 13.00h
Fecal Microbiota Transplantation (FMT) in the 21st century
Alan C. Moss, MD
Beth Israel Deaconess Medical Center
Harvard Medical School
Alex Soriano, MD Phd
IDIBAPS Group Leader
Nosocomial infection study group

Stepping-stone training programme

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

8 Sessions in 2017



stepping-stone
IDIBAPS TRAINING PROGRAMME
FOR PRE AND POSTDOCTORAL RESEARCHERS

december 2016 • june 2017 Schedule

Pre-registration required

MAKING THE MOST OF YOUR PRESENTATION
Jean-Luc Doumont, PhD. Founding Partner of Principiae (Belgium)
December, 13th 2016
Plenary Session
15:00

CAREER OPTIONS BEYOND THE BENCH AND AFTER THE PHD
Marina Martínez, PhD. H2020 Programme Officer at SOST-CDTI (Belgium)
Clara Campàs, PhD. Strategy & Development Director at Kern Pharma SL (Spain)
Joaquim Calbó, PhD. Scientific Project Manager at CRG (Spain)
Rosina Malagrida, MSc. Head of Public Engagement on Health Research at IrsiCaixa (Spain)
January, 25th 2017
Plenary Session, round table
15:00

JOB SEEKING AND INTERVIEW SKILLS (1): JOB SEEKING IN BARCELONA 360º
Joana Sanz. Career adviser at Barcelona Activa (Spain)
February, 28th 2017
Plenary Session
12:00

JOB SEEKING AND INTERVIEW SKILLS (2): GET READY FOR YOUR JOB INTERVIEW!
Joana Sanz. Career adviser at Barcelona Activa (Spain)
April, 6th/19th/24th 2017
Workshops
12:00

TOOLS FOR EFFICIENT SCIENTIFIC WRITING
Gavin Lucas, PhD. Founder, Scientific Editor and Trainer at The PaperMill (Spain)
May, 25th 2017
Plenary Session
15:00

FUNDAMENTALS ON KNOWLEDGE AND TECHNOLOGY TRANSFER
Elisenda Vendrell, PhD. Head of the KTT Office at IDIBAPS (Spain)
Nèstor Corominas. Patent agent at Curell Suñol, SLP (Spain)
Oscar Alegre. Expert lawyer in innovation, technology transfer and IP at Rousaud Costas Duran, SL (Spain)
June, 29th 2017
Plenary Session
15:00

IDIBAPS - CEK Building
Rosselló 149-153, Barcelona
stepping.stone@idibaps.org

IDIBAPS

Communications and public engagement

MEDIA RELATIONS

38 Press releases

549 Media appearances

PUBLIC RELATIONS

24 Events organised

PUBLIC ENGAGEMENT

33 Activities organised

- **20** Talks
- **10** Visits
- **3** Others

SOCIAL MEDIA

Facebook
1739 page likes*

Twitter
6456 followers*

Linkedin
937 followes*

*at december 31

News

JANUARY

Joan Rodés, founder and first director of IDIBAPS, passed away.

Hospital Clinic-IDIBAPS leads a European project to fight against cirrhosis within the Horizon 2020 program.

MARCH

IDIBAPS creates 3 new research groups: Vascular biology of the liver (Group leader: Jordi Gracia-Sancho), Biomedical epigenomics (Group leader: José Ignacio Martin-Subero) and Liver cell plasticity and tissue repair (Group leader: Pau Sancho-Bru)

APRIL

Elías Campo replaces Ramon Gomis as director of IDIBAPS

MAY

The European Commission co-finances Bitrecs, a new program to incorporate clinicians-scientists at IDIBAPS.

The bank of neurological tissues of Clínic-IDIBAPS reaches the 2,000 donors on its 25th anniversary.

JUNE

Josep Dalmau, awarded with the 2017 Rey Jaime I prize in the Medical Research category.

JULY

Eduard Vieta, best researcher of the year by the World Federation of Psychiatry.

OCTOBER

Barcelona Liver Bioservices (BLB), a spin-off of IDIBAPS for the design and development of pre-clinical studies in the fields of liver disease and hepatotoxicity, is constituted.

NOVEMBER

The Clínic-IDIBAPS is the Spanish biomedical research institution with more scientists in the list of world's most influential scientist, according to the Clarivate Analytics Highly Cited Researchers 2017 list.

ANNUAL
SCIENTIFIC REPORT
2017

AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

1

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AREA 1

BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

1.1 Inflammatory joint diseases (IJDs) 52
Raimon Sanmartí

1.2 Systemic autoimmune diseases 55
Ricard Cervera

1.3 Infectious diseases and AIDS 62
Josep M. Miró

1.4 Immune receptors of the innate and adaptive system 72
Francisco Lozano

1.6 Immunogenetics of the autoinflammatory response 75
Jordi Yagüe

1.7 Emergencies: processes and pathologies 78
Oscar Miró

1.8 Molecular and cellular bases of inflammation. Structural and biological mass spectrometry 83
Daniel Closa

1.9 Ocular inflammation: clinical and experimental studies 85
Alfredo Adán

1.1 Inflammatory joint diseases (IJDs)

LOCATION
HCB building

KEYWORDS
1. **Rheumatoid arthritis**
2. **Psoriatic arthritis**
3. **Pathogenesis**
4. **Biomarkers**
5. **Targeted therapies**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	38.89	9	4	4
2016	58.21	14	8	5
2017	85.96	16	7	5

TEAM INVOLVED IN
RIER

TEAM LEADER
Raimon Sanmartí (HCB)
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RESEARCHERS
Juan D. Cañete (HCB)

POST-DOCTORAL RESEARCHERS
Raquel Celis (FCRB)
M. Victoria Hernández (HCB)
Julio Ramirez (FCRB)
Virginia Ruiz-Esquide (FCRB)

PRE-DOCTORAL RESEARCHERS
Raul Castellanos (HCB)
Andrea Cuervo (FCRB)

STRATEGIC OBJECTIVES

Promotion of research into the most prevalent chronic forms of immune mediated inflammatory arthritis: rheumatoid arthritis (RA) and spondyloarthritis, including psoriatic arthritis.

MAIN LINES OF RESEARCH

1. Prognostic factors in early arthritis
- Prognostic factors (clinical and immuno genetic) in patients with recent-onset rheumatoid arthritis.
- Production of new synthetic citrullinated peptides for the design of immunoassa ys with diagnostic and prognostic value in recent-onset rheumatoid arthritis and palindromic rheumatism.

2. Clinical and sonographic characterization of clinical remission
- Definition and clinical characterization of subclinical "active synovitis"
- Immunopathological and molecular characterization of subclinical "active synovitis".
- Search of biomarkers of clinical reactivation and radiographic progression.

3. Immunopathology of synovitis in chronic arthritis
- Utility in pathogenesis, differential diagnosis and prognosis of rheumatoid arthritis and psoriatic arthritis. Immuno pathological changes induced by biological treatments. Mechanism of action of targeted therapies. Synovial response biomarkers.

4. Pharmacogenomics of chronic arthritis
- Genetic biomarkers associated to biological therapy response in rheuma toid arthritis and psoriatic arthritis

PUBLICATIONS

Originals / I.F.: 85.962

1. Rauber S, Luber M, Weber S, Maul L, Soare A, Wohlfahrt T, Lin NY, Dietel K, Bozec A, Herrmann M, Kaplan MH, Weigmann B, Zaiss MM, Fearon U, Veale DJ, Cañete JD, Distler O, Rivellese F, Pitzalis C, Neurath MF, McKenzie ANJ, Wirtz S, Schett G, Distler JHW, Ramming A. **Resolution of inflammation by interleukin-9-producing type 2 innate lymphoid cells.** *NATURE MEDICINE*. 23(8):938-944. I.F.: 29.886

2. Calvo-Río V., Santos-Gómez M., Calvo I., González-Fernández M., López-Montesinos B., Mesquida M., Adán A., Hernández M., Maíz O., Atanes A., Bravo B., Modesto C., Díaz-Cordovés G., Palmou-Fontana N., Loricera J., González-Vela M., Demetrio-Pablo R., Hernández J., González-Gay M., Blanco R.. **Anti–Interleukin-6 Receptor Tocilizumab for Severe Juvenile Idiopathic Arthritis–Associated Uveitis Refractory to Anti–Tumor Necrosis Factor Therapy: A Multicenter Study of Twenty-Five Patients.** *ARTHRITIS AND RHEUMATOLOGY*. 69(3):668-675. I.F.: 6.918

3. Levels, Maria J.; Van Tok, Melissa N.; Cantaert, Tineke; Canete, Juan D.; Kroese, Frans G. M.; Germar, Kristine; Spits, Hergen; Baeten, Dominique L. P.; Yeremenko, Nataliya G.. **The Transcriptional Coactivator Bob1 Is Associated With Pathologic B Cell Responses in Autoimmune Tissue Inflammation.**

ARTHRITIS AND RHEUMATOLOGY. 69(4):750-762. I.F.:6.918

4. García-Doval I, Hernández MV, Vanaclocha F, Sellas A, de la Cueva P, Montero D, BIOBADADERM and BIOBADASER study groups. **Should tumour necrosis factor antagonist safety information be applied from patients with rheumatoid arthritis to psoriasis? Rates of serious adverse events in the prospective rheumatoid arthritis BIOBADASER and psoriasis BIOBADADERM cohorts.** *BRITISH JOURNAL OF DERMATOLOGY.* 176(3):643-649. I.F.: 4.706

5. Ramírez J, Narváez JA, Ruiz-Esquide V, Hernández-Gañán J, Cuervo A, Inciarte-Mundo J, Hernández MV, Sampayo-Cordero M, Pablos JL, Sanmartí R, Cañete JD. **Clinical and sonographic biomarkers of structural damage progression in RA patients in clinical remission: A prospective study with 12 months follow-up.** *SEMINARS IN ARTHRITIS AND RHEUMATISM.* 47(3):303-309. I.F.: 4.498

6. Del Rey M., Valín Á., Usategui A., García-Herrero C., Sánchez-Aragó M., Cuezva J., Galindo M., Bravo B., Cañete J., Blanco F., Criado G., Pablos J.. **Hif-1α Knockdown Reduces Glycolytic Metabolism and Induces Cell Death of Human Synovial Fibroblasts under Normoxic Conditions.** *SCIENTIFIC REPORTS.* 7(1):3644. I.F.: 4.259

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2. Villaverde-Garcia, Virginia; Cobo-Ibanez, Tatiana; Candelas-Rodriguez, Gloria; Seoane-Mato, Daniel; del Campo-Fontecha, Petra Diaz; Guerra, Mercedes; Munoz-Fernandezb, Santiago; Canete, Juan D.;. **The effect of smoking on clinical and structural damage in patients with axial**

spondyloarthritis: A systematic literature review. *SEMINARS IN ARTHRITIS AND RHEUMATISM*. 46(5):569-583. I.F.: 4.498

3. Cañete JD, Hernández MV, Sanmartí R. **Safety profile of biological therapies for treating rheumatoid arthritis**. *EXPERT OPINION ON BIOLOGICAL THERAPY*. 17(9):1089-1103. I.F.: 3.684

4. Bastida, Carla; Ruiz, Virginia; Pascal, Mariona; Yague, Jordi; Sanmartí, Raimon; Soy, Dolors. **Is there potential for therapeutic drug monitoring of biologic agents in rheumatoid arthritis?** *BRITISH JOURNAL OF CLINICAL PHARMACOLOGY*. 83(5):962-975. I.F.: 3.493

Letters / I.F.: 11.855

1. Aya F, Ruiz-Esquide V, Viladot M, Font C, Prieto-González S, Prat A, Arance A. **Vasculitic neuropathy induced by pembrolizumab.** *ANNALS OF ONCOLOGY*. 28(2):433-434. I.F.: 11.855

GRANTS FOR RESEARCH IN PROGRESS

Cañete JD. **Red de Investigación en Inflamación y Enfermedades Reumáticas (RIER).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0009/0016
Duration: 01/01/2013 – 31/12/2018

Cañete JD. **Clinical validation of genetic markers to predict persistent remission in rheumatoid arthritis patients treated with biological therapy (REMRABIT).**
Sponsored by: Fundación Profesor Novoa Santos. PMP15/00032
Duration: 01/01/2016-31/12/2019

Cañete JD. **Red Temática de Investigación Cooperativa en Salud - Inflamación y enfermedades reumáticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0012/0010
Duration: 01/01/2017 - 31/12/2021

DOCTORAL THESES

Sanmartí R: **Factores pronóstico de recidiva en pacientes con artritis reumatoide y artritis psoriásica en remisión o baja actividad de la enfermedad durante el tratamiento biológico.**
PhD student: José Esteban Inciarte Mundo

1.2 Systemic autoimmune diseases

LOCATION
HCB building
CELLEX building, 4B

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

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	**191.76**	**38**	**20**	**11**
2016	**150.05**	**28**	**15**	**10**
2017	**331.90**	**35**	**20**	**6**

TEAM INVOLVED IN
AGAUR_SGR14

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Awardee/s: Dr. Sergio Prieto

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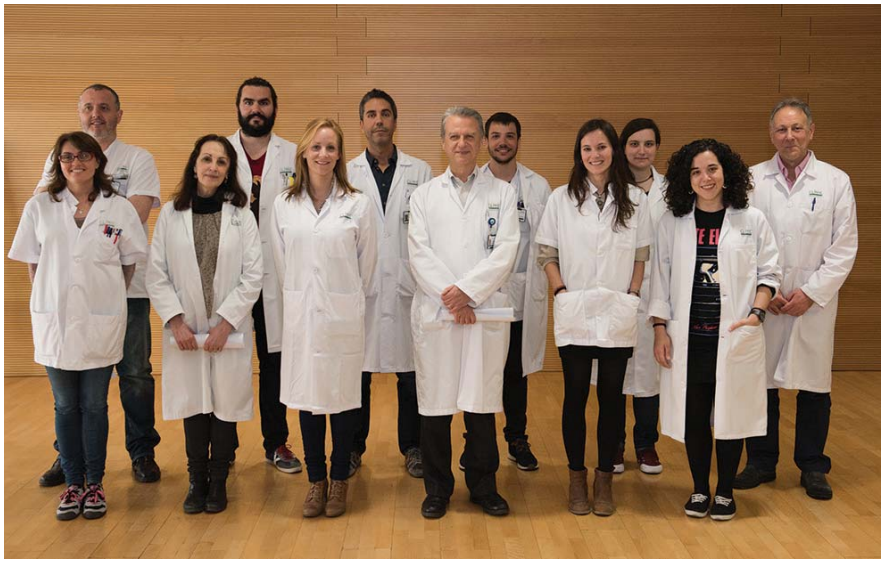

TEAM Ricard Cervera

STRATEGIC OBJECTIVES

The research team promotes clinical and translational research on systemic autoimmune diseases in a multidisciplinary manner, with the participation of members of the Departments of Autoimmune Diseases, Ophthalmology, Nephrology, Immunology, Hemostasis, Obstetrics and Dermatology, among others. These activities are carried out in collaboration with many international working groups.

MAIN LINES OF RESEARCH

1. **Systemic lupus erythematosus, antiphospholipid syndrome and systemic sclerosis:**
- Epidemiological studies on the clinical manifestations and long-term evolution of these diseases.
- Clinical trials in new biological therapies.

2. **Sjögren's syndrome, autoimmune manifestations of hepatitis C virus infection and biological therapies:**
- Study of IgG4 disease associated with Sjögren's.
- Validation of ESSDAI and ESSPRI activity scores,
- Development of new international classification criteria for Sjögren's.

3. **Systemic vasculitis:**
- Investigation of the mechanisms involved in vascular inflammation and remodelling in systemic vasculitis. Identification of biomarkers and new therapeutic targets.
- Development of ex-vivo culture models for studying factors implicated in the perpetuation of inflammation and in vascular remodelling.in giant-cell arteritis
- Clinical trials investigating targeted therapies in the management of systemic vasculitis.
- Clinical phenotypes and outcomes in systemic vasculitis
- Immunogenetics of systemic vasculitis

4. **Autoinflammatory diseases:**
- Epidemiological studies on the clinical manifestations and long-term evolution of these diseases.

RESEARCH GROUP SYSTEMIC VASCULITIS

GROUP LEADER
Maria Cinta Cid (HCB)

We are interested in investigating mechanisms involved in vascular inflammation and remodelling in systemic vasculitis with the ultimate goal of identifying biomarkers of disease activity and therapeutic targets. We are also interested in delimitating clinical phenotypes and outcomes as well as in therapeutic innovation with targeted therapies, participating in the design and development of innovative international clinical trials. The group also participates in massive genotyping and national and international registries of systemic vasculitis, as well as in the development of international guidelines and recommendations for the definitions, classification and management of systemic vasculitis and related diseases.

PUBLICATIONS

Originals / I.F.: 331.903

1. Stone JH, Tuckwell K, Dimonaco S, Klearman M, Aringer M, Blockmans D, Brouwer E, Cid MC, Dasgupta B, Rech J, Salvarani C, Schett G, Schulze-Koops H, Spiera R, Unizony SH, Collinson N. **Trial of Tocilizumab in Giant-Cell Arteritis.** *NEW ENGLAND JOURNAL OF MEDICINE.* 377(4):317-328. I.F.: 72.406

2. Wechsler, M. E.; Akuthota, P.; Jayne, D.; Khoury, P.; Klion, A.; Langford, C. A.; Merkel, P. A.; Moosig, F.; Specks, U.; Cid, M. C.; Luqmani, R.; Brown, J.; Mallett, S.; Philipson, R.; Yancey, S. W.; Steinfeld, J.; Weller, P. F.; Gleich, G. J.;EGPA **Mepolizumab Study Team. Mepolizumab or Placebo for Eosinophilic Granulomatosis with Polyangiitis.** *NEW ENGLAND JOURNAL OF MEDICINE.* 376(20):1921-1932. I.F.: 72.406

3. Balsas P, Palomero J, Eguileor Á, Rodríguez ML, Vegliante MC, Planas-Rigol E, Sureda-Gómez M, Cid MC, Campo E, Amador V. **SOX11 promotes tumor protective microenvironment interactions through CXCR4 and FAK regulation in mantle cell lymphoma.** *BLOOD.* 130(4):501-513. I.F.: 13.164

4. Vento-Tormo R, Álvarez-Errico D, Garcia-Gomez A, Hernández-Rodríguez J, Buján S, Basagaña M, Méndez M, Yagüe J, Juan M, Aróstegui JI, Ballestar E. **DNA demethylation of inflammasome - associated genes is enhanced in patients with cryopyrin-associated periodic syndromes.** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY.* 139(1):202-211. I.F.: 13.081

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GROUP Maria Cinta Cid

Association of a TNFSF13B (BAFF) regulatory region single nucleotide polymorphism with response to rituximab in antineutrophil cytoplasmic antibody–associated vasculitis. *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY.* 139(5):1684-1687. I.F.: 13.081

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8. Langefeld, Carl D.; Ainsworth, Hannah C.; Graham, Deborah S. Cunninghame; Kelly, Jennifer A.; Comeau, Mary E.; Marion, Miranda C.; Howard, Timothy D.; Ramos, Paula S.; Croker, Jennifer A.; Morris, David L.; Sandling, Johanna K.; (...) Timothy J. **Transancestral mapping and genetic load in systemic lupus erythematosus.** *NATURE COMMUNICATIONS.* 8:16021. I.F.: 12.124

9. Carmona FD, Vaglio A, Mackie SL, Hernández-Rodríguez J, Monach PA, Castañeda S, Solans R, Morado IC, Narváez J, Ramentol-Sintas M,... ..., Martín JA. **Genome-wide Association Study Identifies Risk Alleles in Plasminogen and P4HA2 Associated with Giant Cell Arteritis.** *AM J HUM GENET.* 100: 64-74. I.F.: 4.818

10. Toledano P., Orueta R., Rodríguez-Pintó I., Valls-Solé J., Cervera R., Espinosa G.. **Peripheral nervous system involvement in systemic lupus erythematosus: Prevalence, clinical and immunological characteristics, treatment and outcome of a large cohort from a single centre.** *AUTOIMMUNITY REVIEWS.* 16(7):750-755. I.F.: 8.961

11. Pelegrin, Laura; Hernandez-Rodriguez, Jose; Espinosa, Gerard; Llorenc, Victor; Sainz-de-la-Maza, Maite; Fontenla, Jose R.; Martinez, Jose A.; Cid, Maria C.; Adan, Alfredo. **Characterization of isolated retinal vasculitis. Analysis of a cohort from a single center and literature review.** *AUTOIMMUNITY REVIEWS.* 16(3):237-243. I.F.: 8.961

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13. Ruiz-Ortiz, Estibaliz; Iglesias, Estibaliz; Soriano, Alessandra; Bujan-Rivas, Segundo; Espanol-Rego, Marta; Castellanos-Moreira, Raul; Tome, Adria; Yague, Jordi; Anton, Jordi; Hernandez-Rodriguez, Jose. **Disease Phenotype and Outcome Depending on the age at Disease Onset in Patients carrying the R92Q low-Penetrance Variant in TNFRSF1A gene.** *FRONTIERS IN IMMUNOLOGY.* 8:299. I.F.: 6.429

14. Carrizosa J., Aponte J., Cartagena D., Cervera R., Ospina M., Sanchez A. **Factors associated with mortality in patients with autoimmune diseases admitted to the intensive care unit in Bogota, Colombia.** *FRONTIERS IN IMMUNOLOGY.* 8:337. I.F.: 6.429

15. Brito-Zerón P, Kostov B, Fraile G, Caravia-Durán D, Maure B, Rascón FJ, Zamora M, Casanovas A, Lopez-Dupla M, Ripoll M, Pinilla B, Fonseca E, Akasbi M, de la Red G, Duarte-Millán MA, Fanlo P, Guisado-Vasco P, Pérez-Alvarez R, Chamorro AJ, Morcillo C, Jiménez-Heredia I, Sánchez-Berná I, López-Guillermo A, Ramos-Casals M, SS Study Group GEAS-SEMI. **Characterization and risk estimate of cancer in patients with primary Sjögren syndrome.** *JOURNAL OF HEMATOLOGY AND ONCOLOGY.* 10(1):90. I.F.: 6.350

16. Rajaram, Sujatha; Valls-Pedret, Cinta; Cofan, Montserrat; Sabate, Joan; Serra-Mir, Merce; Perez-Heras, Ana M.; Arechiga, Adam; Casaroli-Marano, Ricardo P.; Alforja, Socorro; Sala-Vila, Aleix; Domenech, Monica; Roth, Irene; Freitas-Simoes, Tania M.; Calvo, Carlos; Lopez-Illamola, Anna; Haddad, Ella; Bitok, Edward; Kazzi, Natalie; Huey, Lynnley; Fan, Joseph; Ros, Emilio. **The Walnuts and Healthy Aging Study (WAHA): Protocol for a Nutritional Intervention Trial with Walnuts on Brain Aging.** *FRONTIERS IN AGING NEUROSCIENCE.* 8(JAN):333. I.F.: 4.504

17. Tuckwell K, Collinson N, Dimonaco S, Klearman M, Blockmans D, Brouwer E, Cid MC, Dasgupta B, Rech J, Salvarani C, Unizony SH, Stone JH, GiACTA Investigators. **Newly diagnosed vs. relapsing giant cell arteritis: Baseline data from the GiACTA trial.** *SEMINARS IN ARTHRITIS AND RHEUMATISM.* 46(5):657-664. I.F.: 4.498

18. Burillo-Sanz S., Montes-Cano M., García-Lozano J., Ortiz-Fernández L., Ortego-Centeno N., García-Hernández F., Espinosa G., Graña-Gil G., Sánchez-Bursón J., Rosa Juliá M., Solans R., Blanco R., Barnosi-Marín A., Gómez De La Torre R., Fanlo P., Rodríguez-Carballeira M., Rodríguez-Rodríguez L., Camps T., Castañeda S., Alegre-Sancho J., Martín J., González-Escribano M. **Mutational profile of rare variants in inflammasome-related genes in Behçet disease: A Next Generation Sequencing approach.** *SCIENTIFIC REPORTS.* 7(1):8453. I.F.: 4.259

19. David Carmona, F.; Coit, Patrick; Saruhan-Direskeneli, Guher; Hernandez-Rodriguez, Jose; Cid, Maria C.; Solans, Roser; Castaneda, Santos; Vaglio, Augusto; Direskeneli, Haner; Merkel, Peter A.; Boiardi, Luigi; Salvarani, Carlo; Gonzalez-Gay, Miguel A.; Martin, Javier; Sawalha, Amr H.;Spanish GCA Study Grp; Italian GCA Study Grp; Turkish Takayasu Study Grp; Vasculitis Clinical Res Consortium. **Analysis of the common genetic component of large-vessel vasculitides through a meta-Immunochip strategy.** *SCIENTIFIC REPORTS.* 7(43953). I.F.: 4.259

20. García-Carrasco M., Mendoza-Pinto C., León-Vázquez M., Méndez-Martínez S.,

Etchegaray-Morales I., Montiel-Jarquín Á., Enriquez-Guerra M., Muñóz-Guarneros M., Gálvez-Romero J., Soto-Santillán P., Cervera R.**Incidence of Vertebral Fractures in Women with Systemic Lupus Erythematosus After 8 Years of Follow-Up**. *CALCIFIED TISSUE INTERNATIONAL.* 101(3):291-299. I.F.: 3.124

21. Sisó-Almirall A., Kostov B., González M., Salami D., Jiménez A., Soleâ R., Saumell C., Bach L., Martí M., Paz L., Riera R., Alonso V., Acar-Denizli N., Almacellas M., Ramos-Casals M., Àreu J. **Abdominal aortic aneurysm screening program using hand-held ultrasound in primary healthcare.** *PLOS ONE.* 12(4):e0176877. I.F.: 2.806

22. Sentís A; Diekmann F; Llobell A; de Moner N; Espinosa G; Yague J; Campistol J; Mirapeix E; Juan M. **Kinetic analysis of changes in T- and B-lymphocytes after anti-CD20 treatment in renal pathology**. *IMMUNOBIOLOGY.* 222(4):620-630. I.F.: 2.720

23. Agmon-Levin N., Dagan A., Peri Y., Anaya J., Selmi C., Tincani A., Bizzaro N., Stojanovich L., Damoiseaux J., Tervaert J., Mosca M., Cervera R., Shoenfeld Y. **The interaction between anti-Ro/SSA and anti-La/SSB autoantibodies and anti-infectious antibodies in a wide spectrum of auto-immune diseases: Another angle of the autoimmune mosaic.** *CLINICAL AND EXPERIMENTAL RHEUMATOLOGY.* 35(6):929-935. I.F.: 2.634

24. Arandia N; Simeón-Aznar C; del Castillo A; Argüelles D; Rubio-Rivas M; Martinez L; Hernandez F; Comet L; Arberas M; Ortego-Centeno N; Freire M; Alfonso B; Hitos J; Blanco J; Parra J; Rodríguez-Carballeira M; Ballvé A; Fernandez A; Salas X; Vuelta A; Munoz M; Plá V; Espinosa G; RESCLE investigators, Autoimmune Diseases Study Group (GEAS). **Influence of antibody profile in clinical features and prognosis in a cohort of Spanish patients with systemic sclerosis.** *CLINICAL AND EXPERIMENTAL RHEUMATOLOGY.* 35(4):98-105. I.F.: 2.634

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GRANTS FOR RESEARCH IN PROGRESS

Casaroli-Marano R. **Cell Therapy in ocular surface: Role and biosubstitutive applications of human adult mesenchymal stem cells (ADS and BMDS) for corneal regeneration.**
Sponsored by: Fundació La Marató de TV3. 120630
Duration: 21/01/2013-20/01/2017

Casaroli-Marano R. **Potencial terapéutico de las células progenitoras pluripotentes inducidas (IPSC) y las células progenitoras mesenquimales del estroma de la médula ósea (MSCs) nestina positivas para la regeneración de la superficie ocular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00196
Duration: 01/01/2015-31/12/2017

Cervera R. **Molecular Reclassification to Find Clinically Useful Biomarkers for Systemic Autoimmune Diseases.**
Sponsored by: Fundación Progreso y Salud. 115565
Duration: 01/02/2014-31/01/2019

Cid MC. **Crosstalk between lymphocytes and their microenvironment in chronic inflammatory diseases and lymphoproliferative disorders as a target for new therapeutic intervention.**
Sponsored by: Ministerio de Economía y Competitividad. SAF 2014-57708-R
Duration: 01/01/2015-30/06/2018

Cid MC. **Dilatació d'aorta ascendent i aneurismes coronaris en pacients amb vasculitis sistèmiques (arteritis de cèlules gegants i malaltia de Kawasaki). Rol de la via HIF en remodelatge/inflamació vascular.**
Sponsored by: Fundació la Marató de TV3. 20150730
Duration: 10/05/2016-09/05/2019

Espígol G. **Vasculitis de pequeño vaso rodeando a una arteria temporal preservada: significado clínico y búsqueda de biomarcadores de utilidad diagnóstica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00092
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Cervera R, Espinosa G: **Afectación neurológica en el lupus eritematoso sistémico: Alteraciones en la neuroimagen y caracterización de la afectación del sistema nervioso periférico.**
PhD student: Pilar Toledano

Casaroli-Marano R: **Terapia celular para la reparación y regeneración de la superficie ocular: potencial terapéutico de las células progenitoras mesenquimales.**
PhD stdent: Nuria Nieto Nicolau

1.3 Infectious diseases and AIDS

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WEB
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KEYWORDS
1. **HIV**
2. **AIDS**
3. **Endocarditis**
4. **Nosocomial infections**
5. **Immune suppressed patients**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	421.94	69	54	5
2016	308.79	64	45	9
2017	344.32	67	48	12

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Tania Gonzàlez (IDIBAPS)
Carmen Hurtado (FCRB)
Athina Kilpelainen (FCRB)
M. José Maleno (FCRB)
Laia Miralles (IDIBAPS)
Cristina Rovira (FCRB)
Montserrat Sola (FCRB)

ADMINISTRATIVE STAFF
Carmen Mensa (IDIBAPS)
Irene Ruiz (IDIBAPS)

COLLABORATORS
Carlos Falces (HCB)
Joan Joseph (FCRB)
Sonsoles Sánchez-Palomino (FCRB)
Narcís Saubí (IDIBAPS)

STRATEGIC OBJECTIVES

1. In the AIDS field:
- HIV immune-pathogenesis and HIV vaccines, new antiretrovirals, non-AIDS defining diseases, aging.
- New direct-antiviral drugs (DAA) against HCV in HCV/HIV-coinfected patients.

2. In the general infections field:
- Infective endocarditis, including experi mental endocarditis in animal models.
- Infection in solid-organ transplant recipients, including HIV-infected patients.
- Nosocomial infections. Antimicrobial use.

MAIN LINES OF RESEARCH

1. In the AIDS field:
- Pharmacogenomics and pharmacoki netics.
- Immuno-pathogenesis of HIV infection and development of preventive and therapeutic vaccines
- Primary HIV infection: eradication and functional cure strategies
- Opportunistic diseases: tuberculosis, human papillomavirus, anal cancer
- Solid organ transplantation in HIV-infec ted patients
- Epidemiological studies based on cohorts (PISCIS, ART-CC, COHERE, EuroSida)
- Antiretroviral treatment: Efficacy and safety of new antiretroviral drugs. Studies of resistance. New antiretroviral strategies
- Prevention strategies: PEP and PrEP
- Incidence and management of non-AIDS defining events. Aging. STDs
- HCV and HBV coinfection. Efficacy and safety of new direct-antiviral drugs (DAA) against HCV
- New health-care strategies: telemedicine, shared health-care unit with primary care and OPAT programs

2. In the general infections field:
- Clinical and experimental endocarditis. Cohort studies (ICE, GAMES) (Dr J.M. Miró)
- Infections in solid organ transplant recipients (Dr A. Moreno)
- Non-nosocomial and nosocomial health-care associated infections and community-acquired infections. Evaluation of new antibiotic and antifungal drugs (Dr A. Soriano)

RESEARCH GROUP
AIDS AND HIV INFECTION

GROUP LEADER
Josep Mallolas (HCB)

This group studies the clinical, diagnostic, therapeutic and preventive aspects of HIV infection and HIV-HCV coinfection. 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. Dr. Mallolas is currently the Co-director of the HIVACAT project on research therapeutic and preventive vaccines against HIV infection.

RESEARCH GROUP
ENDOCARDITIS. CARDIOVASCULAR INFECTIONS. EXPERIMENTAL MODEL

GROUP LEADER
Josep M. Miró (HCB)

GROUP Josep M. Miró

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, telavancin, ceftaroline, and others.

RESEARCH GROUP
INFECTIONS IN SOLID-ORGAN TRANSPLANT RECIPIENTS

GROUP LEADER
Asunción Moreno (HCB)

In recent years, this group has studied the clinical and evolutive characteristics of bacteremia, especially MDR, in patients undergoing transplantation of solid organs (kidney, liver, heart and renal-pancreas). We have shown that MBL and TLR condition an increase in the prevalence of bacterial infection and CMV disease.
These studies have been carried out jointly with researchers specialized in Microbiology and Immunology, and with the different Transplant Units (Institutes of Digestive, Renal and Cardiac Diseases). Its components are members of the Spanish Infectious Diseases Research Network (REIPI) and actively participate in multicenter projects funded by the FIS.

RESEARCH GROUP
NOSOCOMIAL INFECTION STUDY GROUP

GROUP LEADER
Alex Soriano (HCB)

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.

GROUP Alex Soriano

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Montes M., Jusdado J., Gaspar G., Esteban H., Bellón J., González-García J., GESIDA HIV/HCV Cohort Study Group. **Eradication of hepatitis C virus and non-liver-related non–acquired immune deficiency syndrome–related events in human immunodeficiency virus/hepatitis C virus coinfection.** *HEPATOLOGY*. 66(2):344-356. I.F.: 13.246

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García F. **Evaluating a Combination of Immune-based Therapies to Achieve a Functional Cure of HIV Infection (HIVACAR).**
Sponsored by: H2020-SC1-2016-RTD. 731626
Duration: 01/01/2017-31/12/2021

Gracía F. **Red Temática de Investigación Cooperativa en Salud - SIDA.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0025/0002
Duration: 01/01/2017-31/12/2021

Gatell J.M. **Papel de las células dendríticas en la protección y control de la infección por el VIH. Avanzando hacia la remisión sin tratamiento antirretroviral o la curación funcional.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01247
Duration: 01/01/2013-30/06/2017

Gatell JM. **NEAT22 – EACS.**
Sponsored by: European Aids Clinical Society Chu Saint Pierre. 16/524
Duration: 14/09/2016-31/12/2020

Gatell JM. **Inmunoterapia frente al VIH con una vacuna terapéutica más interferón para modificar el reservorio viral y eventualmente alcanzar una remisión sin antiretrovirales.**
Sponsored by: Instituto de Salud Carlos III. PI15/00641
Duration: 01/01/2016-31/12/2018

León A. **Evaluating mHealth technology in HIV to improve Empowerment and healthcare utilisation: Research and innovation to Generate Evidence for personalised care.**
Sponsored by: Ministerio De Sanidad, Politica Social E Igualdad. CE_H2020-PHC-2014-1s
Duration: 01/05/2015-30/04/2020

León A. **Joint Action on integrating prevention, testing and linkage to care strategies acros HIV, viral hepatitis, TB and STIs in Europe.**
Sponsored by: EUROPEAN COMISSION CE_HP-JA-2016. 761319
Duration: 01/09/2017-31/08/2020

Martínez EJ. **Seguridad, tolerabilidad y eficacia de dos estrategias de simplificación basadas en dolutegravir en pacientes infectados por VIH con supresión virológica sostenida.**
Sponsored by: Instituto de Salud Carlos III. PI16/01085
Duration: 01/01/2017-31/12/2019

Miro J.M. **Estudio clínico y experimental de la asociación entre la CMI de vancomicina en Staphylococcus aureus sensible a meticilina (SASM) y el pronóstico de la endocarditis infecciona (EI) izquierda causada por dicho microorganismo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI043573
Duration: 01/01/2015- 31/03/2019

Miró JM. **Estudi clínic i experimental de la relació entre la CMI a la vancomicina en Staphylococcus aureus sensibles a la meticil·lina (MSSA) i el pronòstic de la endocarditis infecciosa esquerra per MSSA.**
Sponsored by: Fundació la Marató de TV3. 20152610
Duration: 03/06/2016-02/06/2019

Moreno A. **Impacto de las variaciones genéticas de los TLR 2, 4 y 9 en el riesgo de infección por citomegalovirus postrasplante y su utilidad en la prevención.**
Sponsored by: Instituto de Salud Carlos III. PI12/01743
Duration: 01/01/2013-30/06/2017

Plana M. **Desarrollo de una vacuna terapéutica frente al VIH basada en una nueva formulación de mRNA con nanopartículas.**
Sponsored by: Instituto de Salud Carlos III. PI15/00480
Duration: 01/01/2016-31/12/2018

Plana M. **Design of Human Influenza vaccines using multifunctional micelles harnessing innate immunity.**
Sponsored by: Instituto de Salud Carlos III. AC16/00051
Duration: 01/01/2017-31/12/2019

Soriano A. **Estudio de estabilidad y viabilidad de la microbiota intestinal liofilizada y su utilidad en el tratamiento de la infección por Clostridium difficile.**
Sponsored by: Instituto de Salud Carlos III. PI16/01023
Duration: 01/01/2017-31/12/2019

Soriano A. **Diseño y evaluación de pruebas para el diagnóstico de biopelículas bacterianas sobre biomateriales. Aplicación en infecciones sobre prótesis articulares.**
Sponsored by: Instituto de Salud Carlos III. PI13/01754
Duration: 01/01/2014-31/12/2016

DOCTORAL THESES

Martínez JA, Soriano A: **Factores determinantes de la concentración plasmática de linezolid. Implicaciones terapéuticas.**
PhD student: Laura Morata Ruiz

Miró JM, García de la Mària C: **Enterococcus faecalis infective endocarditis: epidemiological, clinical and therapeutic changes at the turn of the 21st century.**
PhD student: Juan Manuel Pericas Pulido

1.4 Immune receptors of the innate and adaptive system

LOCATION
CEK building floor 1

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

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	30.23	8	4	1
2016	42.52	7	6	1
2017	57.10	11	10	1

TEAM INVOLVED IN
Infect-ERA (SRecognite project)
AGAUR_SGR17

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Pablo Martínez (UB)

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Joan Boix (UB)
Sergi Casadó (IDIBAPS)
Cristina Català (IDIBAPS)
Joan Puñet (UB)
Manuel Sáez (UB)
Ines Tadeu Simoes (IDIBAPS)
María Velasco de Andrés (IDIBAPS)

TECHNICIANS
Noelia Armiger (IDIBAPS)
Adriana Lázaro (UB)

STRATEGIC OBJECTIVES

1. Identification and characterization of functionally relevant genetic variations of immunoreceptors regulating innate and/or adaptive immune responses.
2. Functional characterization of the ligand-receptor interactions responsible for intercellular communication between components from the innate and adaptive immune system.
3. Understanding of host-pathogen interactions mediated by lymphoid and non-lymphoid receptors.
4. Development of novel immunomodulatory strategies in experimental models of autoimmunity, infection and cancer.
5. Characterization of cytomegalovirus (CMV) biology and pathogenesis.

MAIN LINES OF RESEARCH

1. Molecular and functional characterization of the SLAM (Signaling Lymphocytic Activation Molecule) and SAP (SLAM-Associated Protein) leukocyte receptor 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.

TEAM Francisco Lozano

4. Study of the role of the lymphoid scavenger-like receptors CD5 and CD6 as immunomodulators in infection, autoimmunity and cancer.
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 the mechanisms that regulate CMV gene expression and identification of functions encoded by CMV.
7. Study of CMV modulation of the immune response and viral immune evasion strategies

PUBLICATIONS

Originals / I.F.: 57.104

1. Pupuleku A; Costa-García M; Farre D; Hengel H; Angulo A; Muntasell A; Lopez-Botet M. **Elusive role of the CD94/NKG2C NK cell receptor in the response to cytomegalovirus: Novel experimental observations in a reporter cell system.** *FRONTIERS IN IMMUNOLOGY.* 8(OCTOBER):Article 1317. I.F.: 6.429

2. Dantoft W, Martínez-Vicente P, Jafali J, Pérez-Martínez L, Martin K, Kotzamanis K, Craigon M, Auer M, Young N, Walsh P, Marchant A, Angulo A, Forster T, Ghazal P. **Genomic programming of human neonatal dendritic cells in congenital systemic and in vitro cytomegalovirus infection reveal plastic and robust immune pathway biology responses.** *FRONTIERS IN IMMUNOLOGY.* 8(SEPTEMBER):Article 1146. I.F.: 6.429

3. Carrasco, Esther; Escoda-Ferran, Cristina; Climent, Nuria; Miro-Julia, Cristina; Simoes, Ines T.; Martinez-Florensa, Mario; Sarukhan, Adelaida; Carreras, Esther; Lozano, Francisco. **Human CD6 Down-Modulation following T-Cell Activation Compromises Lymphocyte Survival and Proliferative Responses.** *FRONTIERS IN IMMUNOLOGY.* 8(JUN):Article 769. I.F.: 6.429

4. Consuegra-Fernández M., Martínez-Florensa M., Aranda F., de Salort J., Armiger-Borràs N., Lozano T., Casares N., Lasarte J., Engel P., Lozano F. **Relevance of CD6-mediated interactions in the regulation of peripheral T-cell responses and tolerance.** *FRONTIERS IN IMMUNOLOGY.* 8(MAY):Article 594. I.F.: 6.429

5. Consuegra-Fernández M, Julià M, Martínez-Florensa M, Aranda F, Català C, Armiger-Borràs N, Arias MT, Santiago F, Guilabert A, Esteve A, Muñoz C, Ferrándiz C, Carrascosa JM, Pedrosa E, Romaní J, Alsina M, Mascaró-Galy JM, Lozano F. **Genetic and experimental evidence for the involvement of the CD6 lymphocyte receptor in psoriasis.** *CELLULAR AND MOLECULAR IMMUNOLOGY.* . I.F.: 5.897

6. Delgado J., Bielig T., Bonet L., Carnero-Montoro E., Puente X., Colomer D., Bosch E., Campo E., Lozano F. **Impact of the functional CD5 polymorphism A471V on the response of chronic lymphocytic leukaemia to conventional chemotherapy regimens.** *BRITISH JOURNAL OF HAEMATOLOGY.* 177(1):142-156. I.F.: 5.670

7. Simões I., Aranda F., Carreras E., Velasco-de Andrés M., Casadó-Llombart S., Martinez V., Lozano F. **Immunomodulatory effects of soluble CD5 on experimental tumor models.** *ONCOTARGET.* 8(64):108156-108169. I.F.: 5.168

8. Rodríguez N., Morer A., González-Navarro E., Serra-Pages C., Boloc D., Torres T., García-Cerro S., Mas S., Gassó P., Lázaro L. **Inflammatory dysregulation of monocytes in pediatric patients with obsessive-compulsive disorder.** *JOURNAL OF NEUROINFLAMMATION.* 14(1):261. I.F.: 5.102

9. Martínez-Florensa M, Consuegra-Fernández M, Aranda F, Armiger-Borràs N, Di Scala M, Carrasco E, Pachón J, Vila J, González-Aseguinolaza G, Lozano F. **Protective Effects of Human and Mouse Soluble Scavenger-Like CD6 Lymphocyte Receptor in a Lethal Model of Polymicrobial Sepsis.** *ANTIMICROB AGENTS CHEMOTHER.* 61(1):e01391. I.F.: 4.302

10. Bautista-Rodriguez C., Launes C., Jordan I., Andres M., Arias M., Lozano F., Garcia-Garcia J., Muñoz-Almagro C. **Mannose-binding lectin-deficient genotypes as a risk factor of pneumococcal meningitis in infants.** *PLOS ONE.* 12(5):0178377. I.F.: 2.806

11. Perelló M, González-Foruria I, Castillo P, Martínez-Florensa M, Lozano F, Balasch J, Carmona F. **Oral Administration of Pentoxifylline Reduces Endometriosis-Like Lesions in a Nude Mouse Model.** *REPRODUCTIVE SCIENCES.* 24(6):911-918. I.F.: 2.443

Review / I.F.: 20.4

1. Vanpouille-Box C., Lhuillier C., Bezu L., Aranda F., Yamazaki T., Kepp O., Fucikova J., Spisek R., Demaria S., Formenti S., Zitvogel L., Kroemer G., Galluzzi L. **Trial watch: Immune checkpoint blockers for cancer therapy.** *ONCOIMMUNOLOGY.* 6(11):1373237.. I.F.: 7.719

2. Vasquez M, Simões I, Consuegra-Fernández M, Aranda F, Lozano F, Berraondo P. **Exploiting scavenger receptors in cancer immunotherapy: Lessons from CD5 and SR-B1.** *EUROPEAN JOURNAL OF IMMUNOLOGY.* 47(7):1108-1118. I.F.: 4.227

3. Farre D; Martínez-Vicente P; Engel P; Angulo A. **Immunoglobulin superfamily members encoded by viruses and their multiple roles in immune evasion.** *EUROPEAN JOURNAL OF IMMUNOLOGY.* 47(5):780-796. I.F.: 4.227

4. Cossarizza, Andrea; Chang, Hyun-Dong; Radbruch, Andreas; Akdis, Mubeccel; Andrae, Immanuel; Annunziato, Francesco; Bacher, Petra; Barnaba, Vincenzo; Battistini, Luca; Bauer, Wolfgang M.;... ...; Zimmermann, Jakob. **Guidelines for the use of flow cytometry and cell sorting in immunological studies.** *EUROPEAN JOURNAL OF IMMUNOLOGY.* 47(10):1584-1797. I.F.: 4.227

Letters / I.F.: 12.858

1. Consuegra-Fernandez, Marta; Isamat, Marcos; Lozano, Francisco. **Commentary: CD6 as a Potential target for treating multiple Sclerosis.** *FRONTIERS IN IMMUNOLOGY.* 8(SEPTEMBER):1217. I.F.: 6.429

2. Lozano, Francisco; Martinez-Florensa, Mario. **Commentary: The Scavenger Receptor SSc5D Physically Interacts with Bacteria through the SRCR-Containing N-Terminal Domain.** *FRONTIERS IN IMMUNOLOGY.* 8(MAR):Article 366. I.F.: 6.429

GRANTS FOR RESEARCH IN PROGRESS

Angulo A. **Caracterización funcional de nuevas proteínas del citomegalovirus que interfieren en la respuesta inmune del huésped.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2014-55683-R
Duration: 01/01/2015-31/12/2017

Engel P. **SLAM Gene Family Controlled Pathways to SLE.**
Sponsored by: NIH (USA).
2P01AI065687-06A1
Duration 01/08/2012-31/07/2017

Lozano F. **Red Española de Investigación en Patología Infecciosa.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0015/0018
Duration: 01/01/2013-30/04/2017

Lozano F. **Soluble scavenger-like lymphocyte receptors as novel immunomodulatory agents in cancer.**
Sponsored by: Fundació La Marató TV3.
TV3_Cancer_13. 20131930
Duration: 08/05/2014-31/12/2017

Lozano F. **CD5 y CD6 como dianas de inmunomodulación en modelos experimentales de autoinmunidad e infección.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2013-46151-R
Duration: 01/01/2014-30/06/2017

Lozano F. **Proteínas SRCR como receptores reconocedores de microorganismos: un amplio rastreo de interacciones con bacterias patogénicas.**
Sponsored by: Ministerio de Economía y Competitividad. PI044058
Duration: 01/12/2015- 30/11/2018

Lozano F. **Aproximaciones experimentales al estudio de las propiedades inmunomoduladores de receptores linfocitarios tipo scavenger en patología inmunomediada.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2016-80535-R
Duration: 30/12/2016-29/12/2019

DOCTORAL THESES

Lozano F, Martínez V. **Characterization of the in vivo immunomodulatory properties of CD5 and CD6.**
PhD student: Ines Tadeus Simoes

Angulo A. **Homólogos de inmunoreceptores de la familia SLAM codificados por citomegalovirus.**
PhD student: Pablo Martínez-Vicente

1.6 Immunogenetics of the autoinflammatory response

LOCATION
HCB building

KEYWORDS
1. **Autoinflammation**
2. **Immunogenetics**
3. **Inflammasome**
4. **Immunotherapy**
5. **Immunodeficiencies**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	**75.24**	**13**	**9**	**4**
2016	**59.39**	**15**	**8**	**2**
2017	**90.93**	**15**	**10**	**1**

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AGAUR_SGR14

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STRATEGIC OBJECTIVES

In the field of autoinflammatory diseases:
Promotion of basic, clinical and translation research in the physiopathology of autoinflammatory and immunomediated diseases as a model for gaining in-depth knowledge of the regulation of the normal inflammatory response, its dysfunctions, and its effects 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 and developing immunotherapy.

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

TEAM Jordi Yagüe

In the field of immune responses:
- Assessing the role of HLA-DRB3/4/5 loci in the immune response against infection, transplantation and autoimmune response.
- Cell immunotherapy (mainly in cancer): CAR Ts, DCs and TILs

PUBLICATIONS

Originals / I.F.: 90.931

1. Vento-Tormo R, Álvarez-Errico D, Garcia-Gomez A, Hernández-Rodríguez J, Buján S, Basagaña M, Méndez M, Yagüe J, Juan M, Aróstegui JI, Ballestar E. **DNA demethylation of inflammasome-associated genes is enhanced in patients with cryopyrin-associated periodic syndromes.** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY.* 139(1):202-211. I.F.: 13.081

2. Moghaddas F, Llamas R, De Nardo D, Martinez-Banaclocha H, Martinez-Garcia JJ, Mesa-Del-Castillo P, Baker PJ, Gargallo V, Mensa-Vilaro A, Canna S, Wicks IP, Pelegrin P, Arostegui JI, Masters SL. **A novel Pyrin-Associated Autoinflammation with Neutrophilic Dermatosis mutation further defines 14-3-3 binding of pyrin and distinction to Familial Mediterranean Fever.** *ANNALS OF THE RHEUMATIC DISEASES.* 76(12):2085-2094. I.F.: 12.811

3. Sintes, Jordi; Gentile, Maurizio; Zhang, Shuling; Garcia-Carmona, Yolanda; Magri, Giuliana; Cassis, Linda; Segura-Garzon, Daniel; Ciociola, Alessandra; Grasset, Emilie K.; Bascones, Sabrina; Comerma, Laura; Pybus, Marc; Llige, David; Puga, Irene; Gutzeit, Cindy; He, Bing; DuBois, Wendy; Crespo, Marta; Pascual, Julio; Mensa, Anna; Ignacio Arostegui, Juan; Juan, Manel; Yague, Jordi; Serrano, Sergi; Lloreta, Josep; Meffre, Eric; Hahne, Michael; Cunningham-Rundles, Charlotte; Mock, Beverly A.; Cerutti, Andrea. **mTOR intersects antibody-inducing signals from TACI in marginal zone B cells.** *NATURE COMMUNICATIONS.* 8(1):1462. I.F.: 12.124

4. Arostegui JI, Anton J, Calvo I, Robles A, Iglesias E, López-Montesinos B, Banchereau R, Hong S, Joubert Y, Junge G, Pascual V, Yagüe J. **Open-label, Phase II Study to Assess Efficacy and Safety of Canakinumab Treatment in Active Hyperimmunoglobulinemia D with Periodic Fever Syndrome.** *ARTHRITIS AND RHEUMATOLOGY.* 69(8):1679-1688. I.F.: 6.918

5. Rowczenio, Dorota M.; Gomes, Sonia Melo; Arostegui, Juan I.; Mensa-Vilaro, Anna; Omoyinmi, Ebun; Trojer, Hadija; Baginska, Anna; Baroja-Mazo, Alberto; Pelegrin, Pablo; Savic, Sinisa; Lane, Thirusha; Williams, Rene; Brogan, Paul; Lachmann, Helen J.; Hawkins, Philip N.. **Late-Onset Cryopyrin-Associated Periodic Syndromes Caused by Somatic NLRP3 Mosaicism - UK Single Center Experience.** *FRONTIERS IN IMMUNOLOGY.* 8(OCT):1410. I.F.: 6.429

6. Esteve-Sole, Ana; Teixido, Irene; Deya-Martinez, Angela; Yague, Jordi; Plaza-Martin, Ana M.; Juan, Manel; Alsina, Laia. **Characterization of the Highly Prevalent Regulatory CD24(hi)CD38(hi) B-Cell Population in Human Cord Blood.** *FRONTIERS IN IMMUNOLOGY.* 8(MAR):201-67. I.F.: 6.429

7. Esteve-Sole, Ana; Deya-Martinez, Angela; Teixido, Irene; Ricart, Elena; Gompertz, Macarena; Torradeflot, Maria; de Moner, Noemi; Azucena Gonzalez, Europa; Maria Plaza-Martin, Ana; Yague, Jordi; Juan, Manel; Alsina, Laia;. **Immunological Changes in Blood of Newborns Exposed to Anti-TNF-alpha during Pregnancy**. *FRONTIERS IN IMMUNOLOGY.* 8(SEP):1123. I.F.: 6.429

8. Ruiz-Ortiz, Estibaliz; Iglesias, Estibaliz; Soriano, Alessandra; Bujan-Rivas, Segundo; Espanol-Rego, Marta; Castellanos-Moreira, Raul; Tome, Adria; Yague, Jordi; Anton, Jordi; Hernandez-Rodriguez, Jose;. **Disease Phenotype and Outcome Depending on the age at Disease Onset in Patients carrying the R92Q low-Penetrance Variant in TNFRSF1A gene.** *FRONTIERS IN IMMUNOLOGY.* 8:299. I.F.: 6.429

9. Rodríguez-Lobato LG, Fernández de Larrea C, Cibeira MT, Tovar N, Aróstegui JI, Rosiñol L, Díaz T, Lozano E, Elena M, Yagüe J, Bladé J. **Impact of Autologous Stem Cell Transplantation on the Incidence and Outcome of Oligoclonal Bands in Patients with Light-Chain Amyloidosis.** *BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION.* 23(8):1269-1275. I.F.: 4.704

10. Rodríguez-Lobato L; Fernandez De Larrea C; Cibeira M; Tovar N; Isola I; Aróstegui J; Rosinol L; Diaz T; Lozano E; Yague J; Blade J. **Prognostic impact of immunoparesis at diagnosis and after treatment onset in patients with light-chain amyloidosis.** *AMYLOID : THE INTERNATIONAL JOURNAL OF EXPERIMENTAL AND CLINICAL INVESTIGATION : THE OFFICIAL JOURNAL OF THE INTERNATIONAL SOCIETY OF AMYLOIDOSIS.* 24(4):245-252. I.F.: 3.373

11. Lasigliè D, Mensa-Vilaro A, Ferrera D, Caorsi R, Penco F, Santamaria G, Di Duca M, Amico G, Nakagawa K, Antonini F, Tommasini A, Consolini R, Insalaco A, Cattalini M, Obici L, Gallizzi R, Santarelli F, Del Zotto G, Severino M, Rubartelli A, Ravazzolo R, Martini A, Ceccherini I, Nishikomori R, Gattorno M, Arostegui J, Borghini S. **Cryopyrin-associated periodic syndromes in Italian Patients: Evaluation of the rate of somatic NLRP3 mosaicism and phenotypic characterization.** *JOURNAL OF RHEUMATOLOGY.* 44(11):1667-1673. I.F.: 3.150

12. Sentís A; Diekmann F; Llobell A; de Moner N; Espinosa G; Yague J; Campistol J; Mirapeix E; Juan M. **Kinetic analysis of changes in T- and B-lymphocytes after anti-CD20 treatment in renal pathology.** *IMMUNOBIOLOGY.* 222(4):620-630. I.F.: 2.720

13. Bujan-Rivas S, Basagaña M, Sena F, Méndez M, Dordal MT, Gonzalez-Roca E, Ruiz-Ortiz E, Mensa-Vilaró A, Plaza S, Modesto C, Ordi-Ros J, Yagüe J, Martínez-Valle F, Aróstegui JI. **Novel evidences of atypical manifestations in cryopyrin-associated periodic syndromes.** *CLINICAL AND EXPERIMENTAL RHEUMATOLOGY.* 35(6 (Suppl 108)): S27-S31. I.F.: 2.634

14. Camprubí D, Mitjavila F, Arostegui JI, Corbella X. **Efficacy of anakinra in an adult patient with recurrent pericarditis and cardiac tamponade as initial manifestations of tumor necrosis factor receptor-associated periodic syndrome due to the R92Q TNFRSF1A variant**. *INTERNATIONAL JOURNAL OF RHEUMATIC DISEASES.* 20(4):510-514. I.F.: 2.624

15. Martinez-Valdez, Libny; Deya-Martinez, Angela; Giner, Maria T.; Berrueco, Ruben; Esteve-Sole, Ana; Juan, Manel; Plaza-Martin, Ana M.; Alsina, Laia. **Evans Syndrome as First Manifestation of Primary Immunodeficiency in Clinical Practice.** *JOURNAL OF PEDIATRIC HEMATOLOGY/ ONCOLOGY.* 39(7):490-494. I.F.: 1.076

Review / I.F.: 3.493

1. Bastida, Carla; Ruiz, Virginia; Pascal, Mariona; Yague, Jordi; Sanmarti, Raimon; Soy,

Dolors;. **Is there potential for therapeutic drug monitoring of biologic agents in rheumatoid arthritis?** *BRITISH JOURNAL OF CLINICAL PHARMACOLOGY.* 83(5):962-975. I.F.: 3.493

GRANTS FOR RESEARCH IN PROGRESS

Arostegui JI. **A comprehensive clinical and experimental approach to personalized molecular medicine in patient autoinflammatory disorders.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC15/00027
Duration: 01/01/2016-31/12/2018

Arostegui JI. **A comprehensive clinical and experimental approach to personalized molecular medicine in patients with defined and undefined autoinflammatory disorders.**
Sponsored by: Istituto Giannina Gaslini. E-RARE_JTC_2015_07
Duration: 01/05/2016-30/04/2019

Arostegui JI. **Contribución de nuevos mecanismos genéticos a la fisiopatología de las inmunodeficiencias primarias.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2015-68472-C2-1-R
Duration: 01/01/2016-31/12/2018

Arostegui JI. **Estudio multicéntrico nacional para la evaluación de la deficiencia humana de lacasa en la fisiopatología de la artritis idiopática juvenil.**
Sponsored by: Sociedad Española de Reumatología Pediátrica. SERPE-2015-AROSTEGUI
Duration: 05/02/2016-31/12/2018

Juan M. **Mejoras en el protocolo de tratamiento con linfocitos T transducidos con CART19 (receptor antigénico quimérico anti-CD19) en síndromes linfoproliferativos B: de la valoración epigenética a la introducción de genes suicidas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00676
Duration: 01/01/2014-31/12/2017

Juan M. **Acceleradora pel desenvolupament de Teràpies Avançades a Catalunya.**
Sponsored by: Universitat de Barcelona. COMRDI15-1-0013-13
Duration: 01/02/2016-31/01/2019

DOCTORAL THESES

Martín MA, Juan M. **Fenotips dd'immunodeficiència comuna variable (IDCV) en pacients pediàtrics. Correlació genotip-fenotip en l'evolució clínica i el tractament dels pacients.**
PhD student: Mònica Piquer Gibert

1.7 Emergencies: processes and pathologies

LOCATION
HCB building

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

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	**94.44**	**28**	**18**	**8**
2016	**37.46**	**14**	**8**	**5**
2017	**235.95**	**39**	**29**	**8**

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AGAUR_SGR14

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STRATEGIC OBJECTIVES

The study of all processes and pathologies inherent to the emergency setting, with a patient-centred approach and focusing on the acute process leading to emergency consultation. The first few hours of emergency disease conditions are exclusively addressed by the Emergency Department, where clinical research has not classically been considered. This makes this group unique in Catalonia and Spain.

TEAM Òscar Miró

MAIN LINES OF RESEARCH

1. Functional aspects of Hospital Emergency Departments.
2. Clinical aspects of intoxicated patients.
3. Treatment of arrhythmias in the emergency room.
4. Evaluation of chest pain in the Emergency Department.
5. Diffusion of the teaching of cardiopulmonary resuscitation maneuvers among the general population
6. Emergency medical care for problems caused by drug abuse.
7. Acute heart failure
8. Attention to infectious diseases in Emergency Departments.
9. Dynamics of teaching and research in Emergency Medicine.

PUBLICATIONS

Originals / I.F.: 235.953

1. Ortiz, Mercedes; Martin, Alfonso; Arribas, Fernando; Coll-Vinent, Blanca; del Arco, Carmen; Peinado, Rafael; Almendral, Jesus;PROCAMIO Study Investigators. **Randomized comparison of intravenous procainamide vs. intravenous amiodarone for the acute treatment of tolerated wide QRS tachycardia: the PROCAMIO study.** *EUROPEAN HEART JOURNAL.* 38(17):1329-1335. I.F.: 20.212

2. Nestelberger, Thomas; Boeddinghaus, Jasper; Badertscher, Patrick; Twerenbold, Raphael; Wildi, Karin; Breitenbuecher, Dominik; Sabti, Zaid; Puelacher, Christian; Gimenez, Maria Rubini; Kozhuharov, Nikola; Strebel, Ivo; Sazgary, Lorraine; Schneider, Deborah; Jann, Janina; de lavallaz, Jeanne du Fay; Miro, Oscar; Javier Martin-Sanchez, F.; Morawiec, Beata; Kawecki, Damian; Muzyk, Piotr; Keller, Dagmar I.; Geigy, Nicolas; Osswald, Stefan; Reichlin, Tobias; Mueller, Christian; APACE Investigators. **Effect of Definition on Incidence and Prognosis of Type 2 Myocardial Infarction.** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY.* 70(13):1558-1568. I.F.: 19.896

3. Twerenbold, Raphael; Badertscher, Patrick; Boeddinghaus, Jasper; Nestelberger, Thomas; Wildi, Karin; Gimenez, Maria Rubini; Miro, Oscar; Martin-Sanchez, F. Javier; Reichlin, Tobias; Mueller, Christian. **Effect of the FDA Regulatory Approach on the 0/1-h Algorithm for Rapid Diagnosis of MI.** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY.* 70(12):1532-1534. I.F.: 19.896

4. Kaier, Thomas E.; Twerenbold, Raphael; Puelacher, Christian; Marjot, Jack; Imambaccus, Nazia; Boeddinghaus, Jasper; Nestelberger, Thomas; Badertscher, Patrick; Sabti, Zaid; Gimenez, Maria Rubini; Wildi, Karin; Hillinger, Petra; Grimm, Karin; Loeffel, Sarah; Shrestha, Samyut; Widmer, Dayana Flores; Cupa, Janosch; Kozhuharov, Nikola; Miro, Oscar; Javier Martin-Sanchez, F.; Morawiec, Beata; Rentsch, Katharina; Lohrmann, Jens; Kloos, Wanda; Osswald, Stefan; Reichlin, Tobias; Weber, Ekkehard; Marber, Michael; Mueller, Christian. **Direct Comparison of Cardiac Myosin-Binding Protein C With Cardiac Troponins for the Early Diagnosis of Acute Myocardial Infarction**. *CIRCULATION.* 136(16):1495-1508. I.F.: 19.309

5. Boeddinghaus, Jasper; Nestelberger, Thomas; Twerenbold, Raphael; Wildi, Karin; Badertscher, Patrick; Cupa, Janosch; Burge, Tobias; Machler, Patrick; Corbiere, Sydney; Grimm, Karin; Gimenez, Maria Rubini; Puelacher, Christian; Shrestha, Samyut; Widmer, Dayana Flores; Fuhrmann, Jakob; Hillinger, Petra; Sabti, Zaid; Honegger, Ursina; Schaerli, Nicolas; Kozhuharov, Nikola; Rentsch, Katharina; Miro, Oscar; Lopez, Beatriz; Javier Martin-Sanchez, F.; Rodriguez-Adrada, Esther; Morawiec, Beata; Kawecki, Damian; Ganovska, Eva; Parenica, Jiri; Lohrmann, Jens; Kloos, Wanda; Buser, Andreas; Geigy, Nicolas; Keller, Dagmar I.; Osswald, Stefan; Reichlin, Tobias; Mueller, Christian. **Direct Comparison of 4 Very Early Rule-Out Strategies for Acute Myocardial Infarction Using High-Sensitivity Cardiac Troponin I.** *CIRCULATION.* 135(17):1597-1611. I.F.: 19.309

6. Miro, Oscar; Rossello, Xavier; Gil, Victor; Martin-Sanchez, Francisco Javier; Llorens, Pere; Herrero-Puente, Pablo; Jacob, Javier; Bueno, Hector; Pocock, Stuart J.;ICA-SEMES Res Grp. **Predicting 30-Day Mortality for Patients With Acute Heart Failure in the Emergency Department A Cohort Study.** *ANNALS OF INTERNAL MEDICINE.* 167(10):698-705. I.F.: 17.202

7. Herrero-Puente P, Prieto-García B, García-García M, Llorens P, Martín-Sánchez FJ, Jacob J, Mebazaa A, Mueller C, Maisel AS, Gil V, García-Hernandez P, Miró Ò. **The relationship of circulating relaxin-2 concentrations with short-term prognosis in patients with acute heart failure: the RELAHF study.** *EUROPEAN JOURNAL OF HEART FAILURE.* 19(9):1205-1209. I.F.: 6.968

8. Arrigo M., Gayat E., Parenica J., Ishihara S., Zhang J., Choi D., Park J., Alhabib K., Sato N., Miro O., Maggioni A., Zhang Y., Spinar J., Cohen-Solal A., Iwashyna T., Mebazaa A. **Precipitating factors and 90-day outcome of acute heart failure: A report from the intercontinental GREAT registry.** *EUROPEAN JOURNAL OF HEART FAILURE.* 19(2):201-208. I.F.: 6.968

9. Jacob J, Tost J, Miró Ò, Herrero P, Martín-Sánchez FJ, Llorens P, ICA-SEMES Research Group. **Impact of chronic obstructive pulmonary disease on clinical course after an episode of acute heart failure. EAHFE-COPD study.** *INT J CARDIOL.* 227:450-456. I.F.: 6.189

10. Miró Ò, Gil V, Martín-Sánchez FJ, Herrero-Puente P, Jacob J, Mebazaa A, Harjola VP, Ríos J, Hollander JE, Peacock WF, Llorens P, ICA-SEMES Research Group(?). **Morphine Use in the ED and Outcomes of Patients With Acute Heart Failure: A Propensity Score-Matching Analysis Based on the EAHFE Registry.** *CHEST.* 152(4):821-832. I.F.: 6.147

11. Coll-Vinent B, Martín A, Sánchez J, Tamargo J, Suero C, Malagón F, Varona M, Cancio M, Sánchez S, Carbajosa J, Ríos J, Casanovas G, Ràfols C, Del Arco C, EMERG-AF Investigators. **Benefits of Emergency Departments' Contribution to Stroke Prophylaxis in Atrial Fibrillation: The EMERG-AF Study (Emergency Department Stroke Prophylaxis and Guidelines Implementation in Atrial Fibrillation).** *STROKE A JOURNAL OF CEREBRAL CIRCULATION.* 48(5):1344-1352. I.F.: 6.032

12. Badertscher, Patrick; Nestelberger, Thomas; de Lavallaz, Jeanne du Fay; Morawiec, Beata; Kawecki, Damian; Miro, Oscar; Lopez, Beatriz; Martin-Sanchez, F. Javier; Bustamante, Jose; Geigy, Nicolas; Christ, Michael; Di Somma, Salvatore; Peacock, W. Frank; Cullen, Louise; Sarasin, Francois; Flores, Dayana; Tschuck, Michael; Boeddinghaus, Jasper; Twerenbold, Raphael; Wildi, Karin; Sabti, Zaid; Puelacher, Christian; Gimenez, Maria Rubini; Kozhuharov, Nikola; Shrestha, Samyut; Strebel, Ivo; Rentsch, Katharina; Keller, Dagmar I.; Poepping, Imke; Buser, Andreas; Kloos, Wanda; Lohrmann, Jens; Kuehne, Michael; Osswald, Stefan; Reichlin,

Tobias; Mueller, Christian. **Prohormones in the Early Diagnosis of Cardiac Syncope.** *JOURNAL OF THE AMERICAN HEART ASSOCIATION.* 6(12):e006592. I.F.: 4.425

13. Miró Ò., Gil V., Xipell C., Sánchez C., Aguiló S., Martín-Sánchez F., Herrero P., Jacob J., Mebazaa A., Harjola V., Llorens P. **IMPROV-ED study: outcomes after discharge for an episode of acute-decompensated heart failure and comparison between patients discharged from the emergency department and hospital wards**. *CLINICAL RESEARCH IN CARDIOLOGY.* 106(5):369-378. I.F.: 4.760

14. Boeddinghaus, Jasper; Reichlin, Tobias; Nestelberger, Thomas; Twerenbold, Raphael; Meili, Yvette; Wildi, Karin; Hillinger, Petra; Gimenez, Maria Rubini; Cupa, Janosch; Schumacher, Lukas; Schubera, Marie; Badertscher, Patrick; Corbiere, Sydney; Grimm, Karin; Puelacher, Christian; Sabti, Zaid; Widmer, Dayana Flores; Schaerli, Nicolas; Kozhuharov, Nikola; Shrestha, Samyut; Burge, Tobias; Machler, Patrick; Buchi, Michael; Rentsch, Katharina; Miro, Oscar; Lopez, Beatriz; Javier Martin-Sanchez, F.; Rodriguez-Adrada, Esther; Morawiec, Beata; Kawecki, Damian; Ganovska, Eva; Parenica, Jiri; Lohrmann, Jens; Buser, Andreas; Keller, Dagmar I.; Osswald, Stefan; Mueller, Christian. **Early diagnosis of acute myocardial infarction in patients with mild elevations of cardiac troponin.** *CLINICAL RESEARCH IN CARDIOLOGY.* 106(6):457-467. I.F.: 4.760

15. Hillinger, Petra; Twerenbold, Raphael; Wildi, Karin; Rubini Gimenez, Maria; Jaeger, Cedric; Boeddinghaus, Jasper; Nestelberger, Thomas; Grimm, Karin; Reichlin, Tobias; Stallone, Fabio; Puelacher, Christian; Sabti, Zaid; Kozhuharov, Nikola; Honegger, Ursina; Ballarino, Paola; Miro, Oscar; Denhaerynck, Kris; Ekrem, Temizel; Kohler, Claudia; Bingisser, Roland; Osswald, Stefan; Mueller, Christian. **Gender-specific uncertainties in the diagnosis of acute coronary syndrome.** *CLINICAL RESEARCH IN CARDIOLOGY.* 106(1):28-37. I.F.: 4.760

16. Blanco-Hinojo L, Pujol J, Harrison BJ, Macià D, Batalla A, Nogué S, Torrens M, Farré M, Deus J, Martín-Santos R. **Attenuated frontal and sensory inputs to the basal ganglia in cannabis users**. *ADDICTION BIOLOGY.* 22(4):1036-1047. I.F.: 4.603

17. Hernandez S., Moren C., Catalán-García M., Lopez M., Guitart-Mampel M., Coll O., Garcia L., Milisenda J., Justamante A., Gatell J., Cardellach F., Gratacos E., Miro Ò., Garrabou G.. **Mitochondrial toxicity and caspase activation in HIV pregnant women.** *JOURNAL OF CELLULAR AND MOLECULAR MEDICINE.* 21(1):26-34. I.F.: 4.499

18. Hernández S, Catalán-García M, Morén C, García-Otero L, López M, Guitart-Mampel M, Milisenda J, Coll O, Cardellach F, Gratacós E, Miró Ò, Garrabou G. **Placental Mitochondrial Toxicity, Oxidative Stress, Apoptosis And Adverse Perinatal Outcomes In Hiv-Pregnancies Under Antiretroviral Treatment Containing Zidovudine**. *JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES.* 75(4): E113-E119. I.F.: 3.935

19. Miro O; Galicia M; Dargan P; Dines A; Giraudon I; Heyerdahl F; Hovda K; Yates C; Wood D. **Intoxication by gamma hydroxybutyrate and related analogues: Clinical characteristics and comparison between pure intoxication and that combined with other substances of abuse.** *TOXICOLOGY LETTERS.* 277:84-91. I.F.: 3.858

20. Martín-Sánchez FJ, Rodríguez-Adrada E, Vidan MT, Llopis García G, González Del Castillo J, Rizzi MA, Alquezar A, Piñera P, Lázaro Aragues P, Llorens P, Herrero P, Jacob J, Gil V, Fernández C, Bueno H, Miró Ò, Representing the members of the OAK Register Investigators. **Impact of Frailty and Disability on 30-Day Mortality in Older Patients With Acute Heart Failure.** *AMERICAN JOURNAL OF CARDIOLOGY.* 120(7):1151-1157. I.F.: 3.398

21. Miró Ò., Llorens P., Escalada X., Herrero P., Jacob J., Gil V., Xipell C., Sánchez C., Aguiló S., Martín-Sánchez F. **Prehospital emergency care of patients with acute heart failure in Spain: The semica study (Emergency medical response systems for patients with acute heart failure).** *EMERGENCIAS.* 29(4):223-230. I.F.: 3.028

22. Del Arco Galán C., Rodríguez Miranda B., González del Castillo J., Ruiz Grinspan M., Carballo C., Bibiano Guillén C., Artillo S., Miró Ò., Martín-Sánchez F. **Physical structure, human resources, and health care quality indicators in public hospital emergency departments in the autonomous communities of Madrid and Catalonia: A comparative study.** *EMERGENCIAS.* 29(6):373-383. I.F.: 3.028

23. Jacob, Javier; Gene, Emili; Alonso, Gilberto; Rimbau, Pere; Zorrilla, Jose; Casarramona, Francesc; Netto, Cristina; Sanchez, Pere; Hernandez, Ricard; Escalada, Xavier; Miro, Oscar. **Occupational aspects of emergency medicine practice in Catalonia: the OPENCAT opinion survey.** *EMERGENCIAS.* 29(6):403-411. I.F.: 3.028

24. Burbano Santos P., Fernández-Guerrero I., Martín-Sánchez F., Burillo G., Miró Ò. **Analysis of Spanish research collaboration in emergency medicine: 2010-2014.** *EMERGENCIAS.* 29(5):320-326. I.F.: 3.028

25. Fernández-Guerrero I., Martín-Sánchez F., Burillo-Putze G., Miró Ò. **Scientific publication output of Spanish emergency physicians from 2005 to 2014: A comparative study.** *EMERGENCIAS.* 29(5):327-334. I.F.: 3.028

26. Vicente V, Martín A, Lecumberri R, Coll-Vinent B, Suero C, González-Porras J, Marco P, Mateo J, Roldán V, Soulard S, Crespo C, Camats M. **Clinical perspectives on the management of bleeding in patients on oral anticoagulants: The DECOVER Study (DElphi Consensus on oral COagulation and therapy action reVERsa.** *EMERGENCIAS.* 29(1):18-26. I.F.: 3.028

27. López Altimiras X, Gené Tous E, De Giorgi A, Gadea Polo A, Martín Horcajo R, Jiménez Hernández S. **Nontherapeutic international normalized ratio results in hospital emergency patients on vitamin K antagonists: prevalence and associated factors.** *EMERGENCIAS.* 29(2):93-98. I.F.: 3.028

28. Moreno Barriga, Elvira; Pueyo Ferrer, Irene; Sanchez Sanchez, Miguel; Martin Baranera, Montserrat; Masip Utset, Josep. **A new artificial intelligence tool for assessing symptoms in patients seeking emergency department care: the Mediktor application.** *EMERGENCIAS.* 29(6):391-396. I.F.: 3.028

29. Miro O; Carbajosa V; Peacock W; Llorens P; Herrero P; Jacob J; Collins S; Fernandez C; Pastor A; Martín-Sánchez F. **The effect of a short-stay unit on hospital admission and length of stay in acute heart failure: REDUCE-AHF study**. *EUROPEAN JOURNAL OF INTERNAL MEDICINE.* 40:30-36. I.F.: 2.960

30. Martín-Sánchez FJ, Rodríguez-Adrada E, Mueller C, Vidán MT, Christ M, Frank Peacock

W, Rizzi MA, Alquezar A, Piñera P, Aragues PL, Llorens P, Herrero P, Jacob J, Fernández C, Miró Ò. **The effect of frailty on 30-day mortality risk in older patients with acute heart failure attended in the Emergency Department.** *ACADEMIC EMERGENCY MEDICINE.* 24(3):298-307. I.F.: 2.925

31. Herrero-Puente P, Prieto-García B, García-García M, Jacob J, Martín-Sánchez FJ, Pascual-Figal D, Bueno H, Gil V, Llorens P, Vázquez-Alvarez J, Romero-Pareja R, Sanchez-Gonzalez M, Miró Ò. **Predictive capacity of a multimarker strategy to determine short-term mortality in patients attending a hospital emergency department for acute heart failure. BIO-EAHFE study**. *CLIN CHIM ACTA.* 466:22-30. I.F.: 2.873

32. Domínguez-Rodríguez A; Burillo-Putze G; Garcia-Saiz M; Aldea-Perona A; Harmand M; Miro O; Abreu-Gonzalez P; Pinillos-Echeverría M; Rizzi M; Martín-Sánchez F; Suero-Mendez C; Calvo-Rodriguez R; Carballo-Carmona C; Gil V; Herrero P; Bajo A; Salmeron P. **Study Design and Rationale of "A Multicenter, Open-Labeled, Randomized Controlled Trial Comparing MIdazolam Versus MOrphine in Acute Pulmonary Edema": MIMO Trial.** *CARDIOVASCULAR DRUGS AND THERAPY.* 31(2):209-213. I.F.: 2.820

33. Miró, Òscar; Rizzi, Miguel A.; Herrero, Pablo; Jacob, Javier; Martin-Sanchez, Francisco J.; Gil, Victor; Alquezar, Aitor; Escoda, Rosa; Llorens, Pere; ICA-SEMES Res Group. **OBESICA study: relationship between BMI and acute heart failure outcome.** *EUROPEAN JOURNAL OF EMERGENCY MEDICINE.* 24(5):326-332. I.F.: 2.025

34. Miró, Òscar; Busca, Pablo;. **Emergency physician sex and emergency department resource use.** *EUROPEAN JOURNAL OF EMERGENCY MEDICINE.* 24(4):277-283. I.F.: 2.025

35. Miró Ò, González de la Presa B, Herrero-Puente P, Fernández Bonifacio R, Möckel M, Mueller C, Casals G, Sandalinas S, Llorens P, Martín-Sánchez FJ, Jacob J, Bedini JL, Gil V. **The GALA study: relationship between galectin-3 serum levels and short- and long-term outcomes of patients with acute heart failure.** *BIOMARKERS.* 22(8):731-739. I.F.: 2.006

36. Jacob J, Roset A, Miró Ò, Alquézar A, Herrero P, Martín-Sanchez FJ, Möckel M, Müller C, Llorens P, ICA-SEMES Research Group. EAHFE - TROPICA2 study. **Prognostic value of troponin in patients with acute heart failure treated in Spanish hospital emergency departments.** *BIOMARKERS.* 22(3-4):337-344. I.F.: 2.006

37. Miro, Oscar; Burbano, Pablo; Graham, Colin A.; Cone, David C.; Ducharme, James; Brown, Anthony F. T.; Javier Martin-Sanchez, Francisco. **Analysis of h-index and other bibliometric markers of productivity and repercussion of a selected sample of worldwide emergency medicine researchers.** *EMERGENCY MEDICINE JOURNAL.* 34(3):175-181. I.F.: 1.861

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39. Fuenzalida C, Hernández G, Ferro I, Siches C, Ambrós À, Coll-Vinent B. **Long-term benefits of education by emergency care nurses at discharge of patients with atrial fibrillation.** *INTERNATIONAL EMERGENCY NURSING.* 35:7-12. I.F.: 1.298

Review / I.F.: 19.352

1. Price, Susanna; Platz, Elke; Cullen, Louise; Tavazzi, Guido; Christ, Michael; Cowie, Martin R.; Maisel, Alan S.; Masip, Josep; Miro, Oscar; McMurray, John J.; Peacock, W. Frank; Javier Martin-Sanchez, F.; Di Somma, Salvatore; Bueno, Hector; Zeymer, Uwe; Mueller, Christian; European Soc Cardiology Acute Card. **Echocardiography and lung ultrasonography for the assessment and management of acute heart failure.** *NATURE REVIEWS CARDIOLOGY.* 14(7):426-440. I.F.: 14.299

2. Aguirre Tejedo A; Miro O. **Precipitating factors in acute heart failure: A review.** *EMERGENCIAS.* 29(3):185-193. I.F.: 3.028

3. Miró Ò, Levy PD, Möckel M, Pang PS, Lambrinou E, Bueno H, Hollander JE, Harjola VP, Diercks DB, Gray AJ, DiSomma S, Papa AM, Collins SP. **Disposition of emergency department patients diagnosed with acute heart failure: an international emergency medicine perspective.** *EUROPEAN JOURNAL OF EMERGENCY MEDICINE.* 24(1):2-12. I.F.: 2.025

Letters / I.F.: 10.541

1. Trullàs J; Miro O. **About the Specialty Treating Patients With Heart Failure**. *REVISTA ESPAÑOLA DE CARDIOLOGIA.* 70(7):611-611. I.F.: 4.485

2. Miro, Oscar. **Contribution of authors, financing and ethical responsibilities.** *EMERGENCIAS.* 29(1):65-65. I.F.: 3.028

3. Nogué Xarau S, Velasco V, Marambio M, López L. **Stings from jellyfish and other venomous marine life: impact on beach lifeguard services.** *EMERGENCIAS.* 29(6):426-427. I.F.: 3.028

Editorial / I.F.: 10.135

1. Miro, Oscar. **An amazing 10 years.** *EMERGENCIAS.* 29(5):297-300. I.F.: 3.028

2. Miro, Oscar. **Emergencias: holding our own in the top quarter.** *EMERGENCIAS.* 29(4):217-220. I.F.: 3.028

3. Miro, Oscar; Gil, Victor; Peacock, W. Frank. **Morphine in acute heart failure: good in relieving symptoms, bad in improving outcomes.** *JOURNAL OF THORACIC DISEASE.* 9(9):E871-E874. I.F.: 2.365

4. Miro O. **The challenge of infectious diseases in the emergency department: Presentation of 3 cases.** *ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA.* 35(4):205-207. I.F.: 1.714

Consortium publications / I.F.: 116.811

1. Packer, M.; O'Connor, C.; McMurray, J. J. V.; Wittes, J.; Abraham, W. T.; Anker, S. D.; Dickstein, K.; Filippatos, G.; Holcomb, R.; Krum, H.; Maggioni, A. P.; Mebazaa, A.; Peacock, W. F.; Petrie, M. C.; Ponikowski, P.; Ruschitzka, F.; van Veldhuisen, D. J.; Kowarski, L. S.; Schactman, M.; Holzmeister, J.; TRUE-AHF Investigators. **Effect of Ularitide on Cardiovascular Mortality in Acute Heart Failure.** *NEW ENGLAND JOURNAL OF MEDICINE.* 376(20):1956-1964. I.F.: 72.406

2. Freund Y, Lemachatti N, Krastinova E, Van

Laer M, Claessens YE, Avondo A, Occelli C, Feral-Pierssens AL, Truchot J, Ortega M, Carneiro B, Pernet J, Claret PG, Dami F, Bloom B, Riou B, Beaune S. **French Society of Emergency Medicine Collaborators Group. Prognostic Accuracy of Sepsis-3 Criteria for In-Hospital Mortality Among Patients With Suspected Infection Presenting to the Emergency Department.** *JAMA*. 317(3):301-308. I.F.: 44.405

GRANTS FOR RESEARCH IN PROGRESS

Miró O. **Identificació a urgències dels pacients amb insuficiència cardiaca aguda de baix risc i desenvolupament d'una escala per identificar-los i millorar l'evolució dels que són donats d'alta des d'urgències.**
Sponsored by: Fundació la Marató de TV3.
20152510
Duration: 09/03/2016-08/03/2019

Miró O. **Diseño de programas de intervención y escalas de riesgo con marcadores y biológicos de fragilidad para la insuficiencia cardiaca aguda en los servicios de urgencia españoles.**
Sponsored by: Instituto de Salud Carlos III.
PI15/01019
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Miró Ò, Llorens P. **Análisis de factores pronóstico y estratificación del riesgo en pacientes con insuficiencia cardiaca aguda atendidos en los servicios de urgencias.**
PhD student: Víctor Luis Gil Espinosa

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

LOCATION
IIBB-CSIC labs

KEYWORDS
1. **Inflammation**
2. **Fibrosis**
3. **Proteomics**
4. **Macrophages**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	23.47	5	3	1
2016	28.35	6	6	-
2017	18.57	4	4	-

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TECHNICIAN
Oscar Gallardo (IIBB-CSIC)
Laura López (IIBB-CSIC)
Roberto Pinto (IIBB-CSIC)
Ester Sánchez (IIBB-CSIC)
Ignacio Sánchez (IIBB-CSIC)

STRATEGIC OBJECTIVES

1. **Molecular and cellular bases of inflammation:**
Study of inflammatory response in experimental models of acute pancreatitis, lung fibrosis and pancreatic cancer.

2. **Structural and biological mass spectrometry:**
Development of techniques for the analysis of biomolecules by mass spectrometry and more especially for proteomics studies. Application to the characterization of post-translational modifications involved in signal transduction and of therapeutic targets and markers of disease. MALDI-imaging.

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 cell communication in pancreatic cancer.
- Exosomes in inflammatory diseases.

2. **Structural and biological mass spectrometry:**
- Phosphoproteome, acetylome, ubiquitinome and modification crosstalking on the human t-lymphocyte.

TEAM Daniel Closa

- Diagnostic and prognostic markers in cancer and other diseases.
- External scientific-technical services.
- MALDI-Imaging.

PUBLICATIONS

Originals / I.F.: 18.569

1. Casanovas, Albert; Pinto-Llorente, Roberto; Carrascal, Montserrat; Abian, Joaquin;. **Large-Scale Filter-Aided Sample Preparation Method for the Analysis of the Ubiquitinome.** *ANALYTICAL CHEMISTRY.* 89(7):3840-3846. I.F.: 6.320

2. Bonjoch L, Gironella M, Iovanna JL, Closa D. **REG3β modifies cell tumor function by impairing extracellular vesicle uptake.** *SCIENTIFIC REPORTS.* 7(1):3143. I.F.: 4.259

3. Casas V, Rodríguez-Asiain A, Pinto-Llorente R, Vadillo S, Carrascal M, Abian J. **Brachyspira hyodysenteriae and B. pilosicoli Proteins Recognized by Sera of Challenged Pigs.** *FRONTIERS IN MICROBIOLOGY.* 8:723. I.F.: 4.076

4. Vialas V, Colomé-Calls N, Abian J, Aloria K, Alvarez-Llamas G, Antúnez O, Arizmendi JM, Azkargorta M, Barceló-Batllori S, Barderas MG, Blanco F, Casal JI, Casas V, de la Torre C, Chicano-Gálvez E, Elortza F, Espadas G, Estanyol JM, Fernandez-Irigoyen J, Fernandez-Puente P, Fidalgo MJ, Fuentes M, Gay M, Gil C, Hainard A, Hernaez ML, Ibarrola N, Kopylov AT, Lario A, Lopez JA, López-Lucendo M, Marcilla M, Marina-Ramírez A, Marko-Varga G, Martín L, Mora MI, Morato-López E, Muñoz J, Odena MA, de Oliveira E, Orera I, Ortea I, Pasquarello C, Ray KB, Rezeli M, Ruppen I, Sabidó E, Del Pino MMS, Sancho J, Santamaría E, Vazquez J, Vilaseca M, Vivanco F, Walters JJ, Zgoda VG, Corrales FJ, Canals F, Paradela A. **A multicentric study to evaluate the use of relative retention times in targeted proteomics.** *J PROTEOMICS.* 152:138-149. I.F.: 3.914

Review / I.F.: 10.506

1. Iovanna, Juan L.; Closa, Daniel. **Factors released by the tumor far microenvironment are decisive for pancreatic adenocarcinoma development and progression.** *ONCOIMMUNOLOGY.* 6(11):e1358840. I.F.: 7.719

2. Lopez-Rodriguez E; Gay-Jordi G; Mucci A; Lachmann N; Serrano-Mollar A. **Lung surfactant metabolism: early in life, early in disease and target in cell therapy.** *CELL AND TISSUE RESEARCH.* 367(3):721-735. I.F.: 2.787

GRANTS FOR RESEARCH IN PROGRESS

Closa D. **Exosomas como mediadores de la progresión sistémica en la pancreatitis aguda; papel fisiopatológico y potencial como marcadores pronóstico.**
Sponsored by: Instituto de Salud Carlos III (PI16/00060)
Duration 01/1/2017-31/12/2019

Closa D. **Importancia de los microRNAs transportados por exosomas en la progresión de la inflamación sistémica durante la pancreatitis aguda.**
Sponsored by: Asociación Española de Gastroenterología (Beca Gonzalo Miño 2017)
Duration 09/3/2017-09/03/2020

DOCTORAL THESES

Closa D, Pastor M. **Estudi dels exosomes com a mecanisme de comunicació intercel·lular en patologies pancreàtiques.**
PhD student: Laia Bonjoch Gassol

Abián J, Carrascal M. **Proteome characterization of Brachyspira strains. Identification of bacterial antigens.**
PhD student: Vanessa Casas López

1.9 Ocular inflammation: clinical and experimental studies

LOCATION
MATERNITAT building

KEYWORDS
1. **Uveitis**
2. **Inflammation**
3. **Immunology**
4. **Biomarkers**
5. **Biological therapies**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	30.22	12	3	8
2016	38.31	13	6	6
2017	40.96	8	7	-

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STRATEGIC OBJECTIVES

The research of the Ocular Inflammation Group focuses on how the retina responds to injury, inflammation and degeneration. Our main goal is to promote the investigation on ocular inflammatory diseases with special interest in the study of pathological mechanisms, immune response, and development of new therapies.

MAIN LINES OF RESEARCH

1. **Prognostic factors in patients with macular edema associated with non-infectious uveitis:** Assessment of the clinical, biological and imaging factors involved in the pathogenesis of uveitic macular edema and its response to treatment.

2. **New biologic therapies for the treatment of non-infectious uveitis:** Assessment of the efficacy and safety of new biologic therapies including anti-TNF-alpha, anti-IL-1beta, and anti-IL-6 receptor monoclonal antibodies for treating patients with non-infectious uveitis.

TEAM Alfredo Adán

3. **Genetic polymorphisms predisposing to uveitis:** Multicentric study that investigates genetic polymorphisms as potential risk factors for developing uveitis and its complications.

5. **Tuberculosis-related uveitis:** Development of epidemiological, clinical and experimental studies

6. **Macular pathology in diabetic patients:** Development of clinical and experimental studies to investigate the pathogenesis of diabetic macular edema, as well as its response to different therapeutic approaches.

7. **Molecular basis of age-related macular degeneration (AMD):** Study of the contribution of chronic inflammation and in particular, C-reactive protein and complement Factor H to the progression of AMD.

PUBLICATIONS

Originals / I.F.: 40.957

1. Pelegrin, Laura; Hernandez-Rodriguez, Jose; Espinosa, Gerard; Llorenc, Victor; Sainz-de-la-Maza, Maite; Fontenla, Jose R.; Martinez, Jose A.; Cid, Maria C.; Adan, Alfredo. **Characterization of isolated retinal vasculitis. Analysis of a cohort from a single center and literature review.** *AUTOIMMUNITY REVIEWS.* 16(3):237-243. I.F.: 8.961

2. Pazos M., Dyrda A., Biarnés M., Gómez A., Martín C., Mora C., Fatti G., Antón A. **Diagnostic Accuracy of Spectralis SD OCT Automated Macular Layers Segmentation to Discriminate Normal from Early Glaucomatous Eyes.** *OPHTHALMOLOGY.* 124(8):1218-1228. I.F.: 8.204

3. Calvo-Río V., Santos-Gómez M., Calvo I., González-Fernández M., López-Montesinos B., Mesquida M., Adán A., Hernández M., Maíz O., Atanes A., Bravo B., Modesto C., Díaz-Cordovés G., Palmou-Fontana N., Loricera J., González-Vela M., Demetrio-Pablo R., Hernández J., González-Gay M., Blanco R. **Anti–Interleukin-6 Receptor Tocilizumab for Severe Juvenile Idiopathic Arthritis–Associated Uveitis Refractory to Anti–Tumor Necrosis Factor Therapy: A Multicenter Study of Twenty-Five Patients.** *ARTHRITIS AND RHEUMATOLOGY.* 69(3):668-675. I.F.: 6.918

4. Márquez A., Cordero-Coma M., Martín-Villa J., Gorroño-Echebarría M., Blanco R., Valle D., del Rio M., Blanco A., Olea J., Cordero Y., Capella M., Díaz-Llopis M., Ortego-Centeno N., Ruiz-Arruza I., Llorenç V., Adán A., Fonollosa A., Berge J., Atan D., Dick A., De Boer J., Kuiper J., Rothova A., Martín J. **New insights into the genetic component of non-infectious uveitis through an Immunochip strategy.** *JOURNAL OF MEDICAL GENETICS.* 54(1):38-46. I.F.: 5.451

5. Molins, Blanca; Anna Pascual, Mendez; Llorenc, Victor; Zarranz-Ventura, Javier; Mesquida, Marina; Adan, Alfredo; Martorell, Jordi. **C-reactive protein isoforms differentially affect outer blood-retinal barrier integrity and function.** *AMERICAN JOURNAL OF PHYSIOLOGY - CELL PHYSIOLOGY.* 312(3):C244-C253. I.F.: 3.602

6. Cocho, Lidia; Fernandez, Itziar; Calonge, Margarita; Sainz de la Maza, Maite; Rovira, Montserrat; Stern, Michael E.; Garcia-Vazquez, Carmen; Enriquez-de-Salamanca, Amalia. **Prehematopoietic Stem Cell Transplantation Tear Cytokines as Potential Susceptibility Biomarkers for Ocular Chronic Graft-Versus-Host Disease.** *INVESTIGATIVE OPHTHALMOLOGY AND VISUAL SCIENCE.* 58(11):4836-4846. I.F.: 3.303

7. Figueras-Roca M., Molins B., Sala-Puigdollers A., Matas J., Vinagre I., Ríos J., Adán A. **Peripheral blood metabolic and inflammatory factors as biomarkers to ocular findings in diabetic macular edema.** *PLOS ONE.* 12(3):e0173865. I.F.: 2.806

8. Milla, Elena; Gamundi, Maria Jose; Duch, Susana; Rios, Jose; Carballo, Miguel;EMEIGG Study Grp. **Phenotypic Description of the Spanish Multicentre Genetic Glaucoma Group Cohort.** *JOURNAL OF OPHTHALMOLOGY.* 2017:1907454. I.F.: 1.712

Review / I.F.: 13.46

1. Mesquida M, Molins B, Llorenç V, de la Maza MS, Adán A. **Targeting interleukin-6 in autoimmune uveitis.** *AUTOIMMUNITY REVIEWS.* 16(10):1079-1089. I.F.: 8.961

2. Fallon M., Valero O., Pazos M., Antón A. **Diagnostic accuracy of imaging devices in glaucoma: A meta-analysis.** *SURVEY OF OPHTHALMOLOGY.* 62(4):446-461. I.F.: 3.374

3. Mesquida M., Llorens V., Adán A. **New imaging techniques in retinal vasculitis.** *URGENCIAS EN PEDIATRÍA.* 149(6):261-266. I.F.: 1.125

Letters / I.F.: 2.453

1. Mesquida M, Llorenç V, Adán A. In Response to: 'Deuter CM, Zierhut M, Igney-Oertel A, et al. **Tocilizumab in Uveitic Macular Edema Refractory to Previous Immunomodulatory Treatment.** *OCULAR IMMUNOLOGY AND INFLAMMATION.* 25(2):221-222. I.F.: 2.453

GRANTS FOR RESEARCH IN PROGRESS

Adán A. **Prevención, detección precoz y tratamiento de la patología ocular prevalente degenerativa y crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0008/0013
Duration: 01/01/2017-31/12/2021

Adán A. **Prevención, detección precoz y tratamiento de la patología ocular prevalente, degenerativa y crónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0034/0005
Duration: 01/01/2013-30/06/2017

Adán A. **Estudio de factores clínicos, hallazgos de tomografía de coherencia óptica y biomarcadores como factores pronósticos de la agudeza visual en el edema macular secundario a uveítis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00217
Duration: 01/01/2014-30/04/2017

ANNUAL
SCIENTIFIC REPORT
2017

AREA 2

2

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AREA 2

RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

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2.1 Atherosclerosis, coronary disease and heart failure

LOCATION
CELLEX building 2A

KEYWORDS
1. **Acute myocardial infarction**
2. **Percutaneous coronary intervention. Stent. Biodegradable device**
3. **Therapeutic hypothermia**
4. **Stem cell therapy**
5. **Heart failure**
6. **Structural heart disease**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	284.89	40	22	15
2016	336.25	43	27	13
2017	277.20	39	26	11

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STRATEGIC OBJECTIVES

- To identify the pathophysiological mechanisms of accelerated atherosclerosis.
- To evaluate the safety and efficacy of regenerative cell therapy.
- To increase the understanding of genetics, pathophysiology, diagnosis and treatment of heart failure and ischaemic heart disease.
- To evaluate the clinical implications of diagnostic imaging techniques and types of treatment in structural heart disease and heart failure.

TEAM Manel Sabaté

MAIN LINES OF RESEARCH

- To study the regulatory mechanisms and efficacy of stem cell therapy in experimental models and in clinical contexts.
- To perform experimental models of neointimal hyperplasia, endothelialization, vascular inflammation and thrombosis.
- To evaluate the influence of hormonal factors, gender and aging in ischemic heart disease
- To design experimental and clinical studies to evaluate the performance of novel devices and strategies to treat coronary artery disease, including chronic and acute coronary syndromes, cardiogenic shock and cardiac arrest.
- To evaluate neurohormonal activation, fibrotic process, genetic and environmental factors associated with ventricular remodeling in dilated cardiomyopathy.
- To determine the safety, efficacy and efficiency of new transcatheter and minimally invasive devices to treat structural and congenital heart disease and the role of imaging techniques.
- To evaluate new pharmacological and invasive treatments for pulmonary hypertension.

PUBLICATIONS

Originals / I.F.: 277.20

1. Davies, J. E.; Sen, S.; Dehbi, H. -M.; Al-Lamee, R.; Petraco, R.; Nijjer, S. S.; Bhindi, R.; Lehman, S. J.; Walters, D.; Sapontis, J.; Janssens, L.; Vrints, C. J.; Khashaba, A.; Laine, M.; Van Belle, E.; Krackhardt, F.; Bojara, W.; Going, O.; Harle, T.; Indolfi, C.; Niccoli, G.; Ribichini, F.; Tanaka, N.; Yokoi, H.; Takashima, H.; Kikuta, Y.; Erglis, A.; Vinhas, H.; Silva, P. Canas; Baptista, S. B.; Alghamdi, A.; Hellig, F.; Koo, B. -K.; Nam, C. -W.; Shin, E. -S.; Doh, J. -H.; Brugaletta, S.; Alegria-Barrero, E.; Meuwissen, M.; Piek, J. J.; van Royen, N.; Sezer, M.; Di Mario, C.; Gerber, R. T.; Malik, I. S.; Sharp, A. S. P.; Talwar, S.; Tang, K.; Samady, H.; Altman, J.; Seto, A. H.; Singh, J.; Jeremias, A.; Matsuo, H.; Kharbanda, R. K.; Patel, M. R.; Serruys, P.; Escaned, J. **Use of the Instantaneous Wave-free Ratio or Fractional Flow Reserve in PCI.** *NEW ENGLAND JOURNAL OF MEDICINE.* 376(19):1824-1834. I.F.: 72.406

2. Escaned J, Collet C, Ryan N, De Maria GL, Walsh S, Sabate M, Davies J, Lesiak M, Moreno R, Cruz-Gonzalez I, Hoole SP, Ej West N, Piek JJ, Zaman A, Fath-Ordoubadi F, Stables RH, Appleby C, van Mieghem N, van Geuns RJ, Uren N, Zueco J, Buszman P, Iñiguez A, Goicolea J, Hildick-Smith D, Ochala A, Dudek D, Hanratty C, Cavalcante R, Kappetein AP, Taggart DP, van Es GA, Morel MA, de Vries T, Onuma Y, Farooq V, Serruys PW, Banning AP. **Clinical outcomes of state-of-the-art percutaneous coronary revascularization in patients with de novo three vessel disease: 1-year results of the SYNTAX II study.** *EUROPEAN HEART JOURNAL.* 38(42):3124-3134. I.F.: 20.212

3. Ielasi, Alfonso; Campo, Gianluca; Rapetto, Claudio; Varricchio, Attilio; Cortese, Bernardo; Brugaletta, Salvatore; Geraci, Salvatore; Vicinelli, Paolo; di Uccio, Fortunato Scotto; Secco, Gioel Gabrio; Poli, Arnaldo; Nicolini, Elisa; Ishida, Kohki; Latib, Azeem; Tespili, Maurizio. **A Prospective Evaluation of a Pre-Specified Absorb BVS Implantation Strategy in ST-Segment Elevation Myocardial Infarction The BVS STEMI STRATEGY-IT Study.** *JACC: CARDIOVASCULAR INTERVENTIONS.* 10(18):1855-1864. I.F.: 8.841

4. Geraci, Salvatore; Kawamoto, Hiroyoshi; Caramanno, Giuseppe; Ruparelia, Neil; Capodanno, Davide; Brugaletta, Salvatore; Gori, Tommaso; Nef, Holger; Sabate, Manel; Mehilli, Julinda; Lesiak, Maciej; Naber, Christoph; Di Mario, Carlo; Capranzano, Piera; Wiebe, Jens; Araszkiewicz, Aleksander; Pyxaras, Stelios; Mattesini, Alessio; Muenzel, Thomas; Tamburino, Corrado; Colombo, Antonio; Latib, Azeem. **Bioresorbable Everolimus-Eluting Vascular Scaffold for Long Coronary Lesions A Subanalysis of the International, Multicenter GHOST-EU Registry.** *JACC: CARDIOVASCULAR INTERVENTIONS.* 10(6):560-568. I.F.: 8.841

5. Alfonso F., Cuesta J., Pérez-Vizcayno M., García del Blanco B., Rumoroso J., Bosa F., Pérez de Prado A., Masotti M., Moreno R., Cequier A., Gutiérrez H., García Touchard A., López-Mínguez J., Zueco J., Martí V., Velázquez M., Morís C., Bastante T., García-Guimaraes M., Rivero F., Fernández C. **Bioresorbable Vascular Scaffolds for Patients With In-Stent Restenosis. The RIBS VI Study.** *JACC: CARDIOVASCULAR INTERVENTIONS.* 10(18):1841-1851. I.F.: 8.841

6. Ellis, Stephen G.; Steffenino, Giuseppe; Kereiakes, Dean J.; Stone, Gregg W.; van Geuns, R. J.; Abizaid, Alexandre; Nef, Holger; Cortese, Bernardo; Testa, Luca; Menichelli, Maurizio; Tamburino, Corrado; Gori, Tommaso; Kimura, Takeshi; Serruys, Patrick W.; Brugaletta, Salvatore; Sabate, Manel; Gao, Run-Lin. **Clinical, Angiographic, and Procedural Correlates of Acute, Subacute, and Late Absorb Scaffold Thrombosis.** *JACC: CARDIOVASCULAR INTERVENTIONS.* 10(18):1809-1815. I.F.: 8.841

7. Yamaji, Kyohei; Brugaletta, Salvatore; Sabate, Manel; Iniguez, Andres; Jensen, Lisette Okkels; Cequier, Angel; Hofma, Sjoerd H.; Christiansen, Evald Hoj; Suttorp, Maarten; van Es, Gerrit Anne; Sotomi, Yohei; Onuma, Yoshinobu; Serruys, Patrick W.; Windecker, Stephan; Raber, Lorenz. **Effect of Post-Dilatation Following Primary PCIWith Everolimus-Eluting Bioresorbable Scaffold Versus Everolimus-Eluting Metallic Stent Implantation An Angiographic and Optical Coherence Tomography TROFI II Substudy.** *JACC: CARDIOVASCULAR INTERVENTIONS.* 10(18):1867-1877. I.F.: 8.841

8. Brugaletta S, Scalone G, Dantas AP, Ortega-Paz L, Garabito M, Roqué M, Martin V, Masotti M, Freixa X, Sabaté M. **Endothelial function impairment in STEMI patients with out-of-hospital cardiac arrest under therapeutic hypothermia treatment.** *INT J CARDIOL.* 232:70-75. I.F.: 6.189

9. Tarradas, Anna; Pinsach-Abuin, Mel Lina; Mackintosh, Carlos; Llora-Batlle, Oriol; Perez-Serra, Alexandra; Batlle, Montserrat; Perez-Villa, Felix; Zimmer, Thomas; Garcia-Bassets, Ivan; Brugada, Ramon; Beltran-Alvarez, Pedro; Pagans, Sara. **Transcriptional regulation of the sodium channel gene (SCN5A) by GATA4 in human heart.** *JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY.* 102:74-82. I.F.: 5.680

10. Cubedo J, Suades R, Padro T, Martin-Yuste V, Sabate-Tenas M, Cinca J, Sans-Rosello J, Sionis A, Badimon L. **Erythrocyte-heme proteins and STEMI: implications in prognosis.** *THROMBOSIS AND HAEMOSTASIS.* 117(10):1970-1980. I.F.: 5.627

11. García-Ruiz J., Galán-Arriola C., Fernández-Jiménez R., Aguero J., Sánchez-González J., García-Alvarez A., Nuno-Ayala M., Dubé G., Zafirelis Z., López-Martín G., Bernal J., Lara-Pezzi E., Fuster V., Ibáñez B. **Bloodless reperfusion**

with the oxygen carrier HBOC-201 in acute myocardial infarction: a novel platform for cardioprotective probes delivery. *BASIC RESEARCH IN CARDIOLOGY.* 112(2):467. I.F.: 5.306

12. Jiménez-Brítez G, Freixa X, Flores-Umanzor E, San Antonio R, Caixal G, Garcia J, Hernandez-Enriquez M, Andrea R, Regueiro A, Masotti M, Brugaletta S, Martin V, Sabaté M. **Out-of-hospital cardiac arrest and stent thrombosis: Ticagrelor versus clopidogrel in patients with primary percutaneous coronary intervention under mild therapeutic hypothermia.** *RESUSCITATION.* 114:141-145. I.F.: 5.230

13. Ortega-Paz L, Brugaletta S, Giacchi G, Ishida K, Cequier A, Iñiguez A, Serra A, Jiménez-Quevedo P, Mainar V, Campo G, Tespili M, den Heijer P, Valgimigli M, Serruys PW, Sabaté M. **Impact of stent overlapping on long-term clinical outcomes in patients with ST-segment elevation myocardial infarction: insights from the 5-year follow-up of the EXAMINATION trial.** *EUROINTERVENTION.* 13(5):557-563. I.F.: 5.193

14. Schnorbus B, Wiebe J, Capodanno D, Brugaletta S, Geraci S, Mehilli J, Latib A, Lesiak M, Jensen C, Mattesini A, Münzel T, Capranzano P, Di Mario C, Naber C, Araszkiewicz A, Colombo A, Caramanno G, Sabate M, Tamburino C, Nef H, Gori T. **12 months outcomes after Bioresorbable Vascular Scaffold implantation in Patients with Acute Coronary Syndromes. Data from the European Multicentre GHOST-EU Extended Registry.** *EUROINTERVENTION.* 13(9):e1104-e1111. I.F.: 5.193

15. Ortega-Paz L, Capodanno D, Gori T, Nef H, Latib A, Caramanno G, Di Mario C, Naber C, Lesiak M, Capranzano P, Wiebe J, Mehilli J, Araszkiewicz A, Pyxaras S, Mattesini A, Geraci S, Naganuma T, Colombo A, Münzel T, Sabaté M, Tamburino C, Brugaletta S. **Predilation, sizing and post-dilation scoring in patients undergoing everolimus-eluting bioresorbable scaffold implantation for prediction of cardiac adverse events: development and internal validation of the PSP score.** *EUROINTERVENTION.* 12(17):2110-2117. I.F.: 5.193

16. Kereiakes D., Meredith I., Masotti M., Carrié D., Moreno R., Erglis A., Mehta S., Elhadad S., Berland J., Stein B., Airaksinen J., Jobe R., Reitman A., Janssens L., Christen T., Dawkins K., Windecker S. **Safety and efficacy of a bioabsorbable polymer-coated, everolimus-eluting coronary stent in patients with diabetes: The EVOLVE II diabetes substudy.** *EUROINTERVENTION.* 12(16):1987-1994. I.F.: 5.165

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3. Flores-Umanzor EJ, San Antonio R, Pujol-Lopez M, Perea RJ. **An unusual cause of thoracic pain: Cardiac perforation associated with a pacemaker.** *MEDICINA CLINICA.* 149(6):e26. I.F.: 1.125

4. Jiménez-Brítez G., Flores Umanzor E., Martín V., Sabate M. **Acute coronary syndrome in dextrocardia and situs inversus patient**. *MEDICINA CLINICA.* 148(12):e69. I.F.: 1.125

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GRANTS FOR RESEARCH IN PROGRESS

Dantas AP. **Potential prognostic and therapeutic role of exosomal miRNAs derived from circulating cells (Endothelial Progenitor, Platelets and Neutrophils) in**

acute coronary syndrome.
Sponsored by: Instituto de Salud Carlos III.
PI16/00742
Duration: 01/01/2017-31/12/2019

García A. **Tractament agonista adrenèrgic en la hipertensió pulmonar crònica secundària a insuficiència cardíaca: assaig clínic fase 2 aleatoritzat i controlat amb placebo.**
Sponsored by: Fundació la Marató de TV3.
20151730
Duration: 21/07/2016-20/07/2019

Pomar JL. **Aortic Valve Replacement using Individualised Regenerative Allografts: Bridging the Therapeutic Gap.**
Sponsored by: HORIZONS 2020.
Duration: 01/01/2015-31/03/2019

Roqué M. **Cardiovascular net. HERACLES Programme: Research programme on prevention of cardiovascular diseases and study of hypertension mechanisms.**
Sponsored by: Instituto de Salud Carlos III.
RD12/0042/0006
Duration: 01/01/2013-31/12/2017

Roqué M. **Acute myocardical infarction in young patients. Analysis of prothrombotic, inflammatory and epigenetic factors. Effect of miRNA expressión modulation in a porcine model.**
Sponsored by: Instituto de Salud Carlos III.
PI15/00553
Duration: 01/01/2016-31/12/2018

Sabaté, M. **Desarrollo de biosensores sobre tecnología flexible y rígida para la detección de marcadores cardíacos.**
Sponsored by: Ministerio de Economía.
RTC-2015-4184-1
Duration: 01/07/2015-30/06/2018

DOCTORAL THESES

Roque M. Dantas AP. **Mechanisms for sex-associated differences of vascular aging.**
PhD student: Manel Garabito Montoya

2.2 Arrhythmias, resynchronization and cardiac imaging

LOCATION
HCB building
CELLEX building 2A

KEYWORDS
1. **Atrial fibrillation**
2. **Ventricular tachycardia**
3. **Sudden death**
4. **Cardiac imaging**
5. **Resynchronization therapy**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	193.84	38	28	8
2016	275.53	47	31	14
2017	315.23	56	42	8

TEAM INVOLVED IN
RIC
AGAUR_SGR14
AGAUR_ SGR17
CIBERCV

AWARDS
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Institution: HCB
Awardee/s: Gal·la Caixal Vila

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STRATEGIC OBJECTIVES

Our research team focuses on the study of the electrophysiological, mechanical and biochemical remodelling of the heart and vessels through a translational perspective (from bench to bedside), eventually aiming at the prevention, diagnosis and therapy of cardiovascular diseases. This is performed within a national and international collaborative network with research groups and enterprises.

MAIN LINES OF RESEARCH

- **In genetic diseases**, we focus on the genetics and prognosis of inherited arrhythmias, and the efficacy of epicardial ablation for Brugada syndrome.
- **In adaptation and consequences of sport**, we study exercise-induced cardiac remodelling and the deleterious effects of extreme training in clinical and murine models.
- **In atrial fibrillation**, we develop individualized ablation approaches based on imaging techniques. We participate in the Steering Committee of trials assessing new therapeutics for AF.
- **In resynchronization and pacing**, we aim at improving success rate through multipoint pacing and the fusion-optimized method. We test innovative devices such as leadless pacing and subcutaneous defibrillators.
- **In ventricular tachycardia**, we work to predict sudden cardiac death by substrate analysis in magnetic resonance, evaluate remodelling regression after PVC ablation and compare the efficacy of ablation with antiarrhythmic drugs.
- **In remodelling in heart disease,** we study structural and functional remodelling in valve heart disease, and heart failure characteristics.
- **In vascular cell and molecular biology of Marfan syndrome**, we address redox biology, membrane trafficking, cell signalling, and mechanical forces in aneurysm progression.

RESEARCH GROUP
VASCULAR CELL BIOLOGY

GROUP LEADER
Gustavo Egea (UB)

The main objective of this group is to understand which are the molecular bases impaired in the formation and progression of syndromic thoracic aorta aneurysms particularly in Marfan syndrome. In this respect, we are focus on in the contribution of: (1) the oxidative stress, (2) the crosstalk between vascular smooth muscle cells and extracellular matrix in terms of mechano-transduction, (3) the membrane trafficking of TGF-beta and subsequent signaling, (4) the impact of the physical exercise in the progression of the aneurysms, and (5) which are the behavioral alterations associated to Marfan syndrome, and (6) to carry out prove-of-concept pharmacological and genic treatments to prevent the formation of the aortic aneurysm. To all these aims, we use aortic aneurysm samples from of Marfan patients subjected to reparatory surgery and animal (mice) experimental models.

GROUP Gustavo Egea

RESEARCH GROUP
ARRYTHMIAS AND PHYSICAL ACTIVITY

GROUP LEADER
Eduard Guasch (HCB-IDIBAPS)

The *Arrhythmias and Physical Activity group led* by Dr. Eduard Guasch was officially established in 2015 under the IDIBAPS 50/50 program. Main research topics include the study of the etiology, pathophysiology and therapy of cardiac atrial and ventricular arrhythmias through a multifactorial approach involving animal models, ex vivo and in vitro techniques and studies in humans. In this regard, the group has developed a special interest in the study of extreme intensity exercise (regarded as excessive) as an emerging cause of cardiovascular diseases, including arrhythmias such as atrial fibrillation.

GROUP Eduard Guasch

RESEARCH GROUP
ATRIAL FIBRILLATION BIOPATHOLOGY AND THERAPY

GROUP LEADER
Lluis Mont (HCB)

Our group focuses in the study of the etiologic factors of atrial fibrillation to understand its mechanisms and prevent its development. In this regard, we are assessing the association of the sympathetic/parasympathetic balance to analyze the relationship between stature and autonomic balance.
Furthermore, we aim at testing how fibrosis identification in cardiac magnetic resonance can help in therapy personalization and ablation tailoring.
We also participate in multicenter studies testing different therapeutic strategies and novel drugs.
This work is performed within UFA (Unitat de Fibril·lació Auricular), a multidisciplinary unit led by Dr. Mont including clinicians and researchers (https://ufaclinic.cat/ca).

GROUP Lluis Mont

GROUP Marta Sitges

RESEARCH GROUP
CARDIAC IMAGING

GROUP LEADER
Marta Sitges (HCB)

Our group has a pluridisciplinary team of people dedicated to non-invasive cardiac imaging and its application in the knowledge and research into cardiovascular pathophysiology and therapy within the field of cardiac mechanics and remodelling in cardiovascular diseases. Our lines of research include the application of cardiac imaging in the study of cardiac mechanics and function and analysis of cardiac remodelling in order to detect latent cardiac dysfunction. Additionally, our collaboration with bioengineering groups allows for better quantification and identification of patterns of cardiac adaptations to disease and understanding of their underlying physiopathology.

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1. San Antonio R, Flores Umanzor EJ, Sánchez Somonte P, Caldentey G. **Left atrial collapse due to a giant false lumen in type B aortic dissection.** *INTENSIVE CARE MED.* 43(1):133-134. I.F.: 12.015

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GRANTS FOR RESEARCH IN PROGRESS

Arbelo E. **Estudio ANVERSO: análisis continuo y automático de variables electrocardiográficas en relación al riesgo de muerte súbita en pacientes con síndrome de Brugada.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/01203
Duration: 01/01/2017-31/12/2019

Berruezo A. **Caracterización automática del sustrato arrítmico y evaluación de su utilidad para la prevención de la muerte súbita cardíaca y guiado de los procedimientos de arritmias (ADAS).**
Sponsored by: Ministerio de Economía y Competitividad. RTC-2015-3515-1
Duration:01/11/2015-30/06/2018

Berruezo A. **Caracterización del sustrato arritmogénico y evaluación de su utilidad en la predicción de eventos arrítmicos y guiado de los procedimientos de ablación.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00759
Duration: 01/01/2015-31/12/2017

Berruezo A. **ABLAVIEW - Un sistema innovador de ablación por radiofrecuencia guiado por imagen para el tratamiento de la fibrilación auricular.**
Sponsored by: Ministerio de Economia y Competitividad. RTC-2016-5445-1
Duration: 08/03/2016-31/12/2018

Brugada J. **Comparative Effectiveness Research to Assess the Use of Primary ProphylacTic Implantable Cardioverter Defibrillators in EUrope.**
Sponsored by: European Commission. 602299-2
Duration: 01/10/2013-30/09/2018

Brugada J. **Red Cardiovascular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0042/0044
Duration: 01/01/2013-30/06/2017

Egea G. **Apolinker p144, a potential anti-tTGFgf-beta therapeutic tool to fight against aortic aneurysms in marfan syndrome.**
Sponsored by: The National Marfan Foundation. NMARFANF_15_01
Duration: 01/01/2016-31/12/2018

Guasch E. **Caracterización del remodelado a dosis crecientes de ejercicio físico como sustrato para el desarrollo de patología inducida por el ejercicio.**
Sponsored by: Instituto de Salud Carlos III. PI16/00703
Duration: 01/01/2017-31/12/2019

Mont L. **Efectos cardiovasculares del exceso de ejercicio: Caracterización en el modelo animal, traslación al atleta.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01580
Duration: 01/01/2014-31/12/2017

Mont L. **Characterizing Atrial fibrillation by Translating its Causes into Health Modifiers in the Elderly.**
Sponsored by: European Comission. 633196
Duration: 01/05/2015-30/04/2019

Mont JL. **Caracterització no invasiva dels teixits de l'aurícula esquerra per guiar l'ablació de la fibril·lació auricular i per predir els resultats del procediment així com la progressió de la malaltia.**
Sponsored by: Fundació la Marató de TV3. 20152730
Duration: 29/06/2016-28/06/2019

Mont L. **Ablación de fibrilación auricular guiada por resonancia magnética. Estudio randomizado de la eficacia de la identificación y aislamiento de las zonas de fibrosis.**
Sponsored by: Instituto de Salud Carlos III, PI16/00435
Duration: 01/01/2017-31/12/2019

Ortiz JT. **Paper dels macròfags i fibroblastes residents a la remodelació miocàrdica i la regeneració tisular tras l'infart de miocardi: contribució del sistema GAS6-TAM.**
Sponsored by: Fundació la Marató de TV3. 20153030
Duration: 26/04/2016-25/04/2019

Ortiz JT. **Papel del sistema GAS6-TAM en la difeerenciación fibroblástica y el remodelado ventricular tras el infarto de miocardio.**
Sponsored by: Instituto de Salud Carlos III.

PI15/00531
Duration: 01/01/2016-31/12/2018

Sitges M. **Adaptación del ventrículo derecho y circulación arterial pulmonar al entrenamiento físico intensivo: implicaciones en el seguimiento de deportistas.**
Sponsored by: Ministerio de Economía y Competitividad. DEP2013-44923-P
Duration: 01/01/2014-31/12/2017

Sitges M. **Predicció personalitzada i oprecoç de fibrilació auricular en subjectes en risc. PREDICTAF.**
Sponsored by: Fundació la Marató de TV3. 20154030
Duration: 10/05/2016-09/05/2019

Sitges M. **MARIE Skłodowska-CURIE ACTIONS, Innovative Training Networks - European Industrial Doctorates. "PIC – Personalised In-silico Cardiology".**
Sponsored by: Horizon 2020 European Comission Project H2020-MSCA-ITN-2016.
Duration: 01/09/2017-31/08/2021

DOCTORAL THESES

Sitges M. **Characterization of the spectrum of cardiac adaptation to endurance exercise: impact of gender and training load.**
PhD student: Maria Sanz de la Garza

Batlle M. Guasch E. **Estudi de l'exercici físic intens i la síndrome de l'apnea del son com a factors de risc emergents per a patologia cardiovascular. Caracterització en models animals.**
PhD student: Cira Rubies Espinalt

Berruezo A: **Extrasistolia ventricular frecuente en pacientes con disfunción ventricular izquierda. Implicaciones clínicas y beneficio de la ablación mediante radiofrecuencia.**
PhD student: Diego Penela Maceda

Egea G. **Membrane trafficking of TGF-beta and transcriptomic analysis in Marfan syndrome.**
PhD student: Anne-Maria Siegert

Sitges M. **Prevención de muerte súbita en el deporte mediante el cribado pre-participativo.**
PhD student: Gonzalo Grazioli

2.3 Nephro-urological diseases and kidney transplantation

LOCATION
CELLEX building 2B

KEYWORDS
1. **Renal transplantation**
2. **Dialysis**
3. **Transplant immunology**
4. **Posttransplant cancer**
5. **Renal regeneration**
6. **Pancreas transplantation**
7. **Transplant registries**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	208.92	38	18	4
2016	171.98	23	15	4
2017	116.82	19	11	3

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STRATEGIC OBJECTIVES

LENIT performs translational research of renal diseases. Our focus is physiopathology of kidney diseases and optimization of renal replacement therapy (RT) (dialysis or transplantation) as well as pancreas transplantation; that's why we are doing research on RT optimization; but we also focused on regenerative treatment as an alternative establishing a cure and thus avoid the need for these RT.

MAIN LINES OF RESEARCH

In order to achieve these challenges, it are a team with well-balanced collaboration between clinicians and medical researchers, biologists, biochemists, veterinarians and specialist technicians.
This knowledge will enable us to personalize and improve current therapies and to discover new ways of action. Scientific objectives of LENIT are focused on the following areas of research:

1. Immunology of transplantation
2. Cell therapy and renal regeneration
3. Role of immunosuppression and immunosuppressive medications in posttransplantation oncogenesis
4. Advanced therapies in renal transplantation
5. Pancreas Transplantation
6. Renal living donors psychosocial follow-up
7. Glomerular diseases and endothelial disfuncion
8. Identification of new uremic toxins

50/50 PROGRAM

TRANSLATIONAL RESEARCH IN POSTTRASPLANT NEOPLASIA

GROUP LEADER
Ignacio Revuelta (HCB-IDIBAPS)

Alloimmunity and tumor immunity are very complex to address in solid organ transplantation. The effect of the immunosuppressive therapy, needed to avoid organ rejection, in tumor immune escape and oncogenic pathways lead to tumoral progression, angiogenesis and pre-metastatic niche formation. Exosomes released from cancer cells (CaEx) or immune cells (InmEx) are crucial for intercellular communication between primary tumor, microenvironment, host organs and immune cells, and their role in posttransplant neoplasms and organ rejection is unknown. We aim to characterize CaEx and InmEx under different immunosuppressive drugs and the relationship with immune, stromal and pre-metastatic cells. Understanding how CaEx and InmEx work will give us tools for future interventions in organ transplantation.

GROUP Ignacio Revuelta

PUBLICATIONS

Originals / I.F.: 116.825

1. Liao HK, Hatanaka F, Araoka T, Reddy P, Wu MZ, Sui Y, Yamauchi T, Sakurai M, O'Keefe DD, Núñez-Delicado E, Guillen P, Campistol JM, Wu CJ, Lu LF, Esteban CR, Izpisua Belmonte JC. **In Vivo Target Gene Activation via CRISPR/Cas9-Mediated Trans-epigenetic Modulation.** *CELL.* 171(7):1495-1507.e15. I.F.: 30.410

2. Wu, Jun; Platero-Luengo, Aida; Sakurai, Masahiro; Sugawara, Atsushi; Antonia Gil, Maria; Yamauchi, Takayoshi; Suzuki, Keiichiro; Bogliotti, Yanina Soledad; Cuello, Cristina; Valencia, Mariana Morales; Okumura, Daiji; Luo, Jingping; Vilarino, Marcela; Parrilla, Inmaculada; Soto, Delia Alba; Martinez, Cristina A.; Hishida, Tomoaki; Sanchez-Bautista, Sonia; Llanos Martinez-Martinez, M.; Wang, Huili; Nohalez, Alicia; Aizawa, Emi; Martinez-Redondo, Paloma; Ocampo, Alejandro; Reddy, Pradeep; Roca, Jordi; Maga, Elizabeth A.; Esteban, Concepcion Rodriguez; Berggren, W. Travis; Nunez Delicado, Estrella; Lajara, Jeronimo; Guillen, Isabel; Guillen, Pedro; Campistol, Josep M.; Martinez, Emilio A.; Juan Ross, Pablo; Belmonte, Juan Carlos Izpisua. **Interspecies Chimerism with Mammalian Pluripotent Stem Cells.** *CELL.* 168(3):473-486. I.F.: 30.410

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7. Cavero T., Rabasco C., López A., Román E., Ávila A., Sevillano Á., Huerta A., Rojas-Rivera J., Fuentes C., Blasco M., Jarque A., García A., Mendizabal S., Gavela E., Macía M., Quintana L., María Romera A., Borrego J., Arjona E., Espinosa M., Portolés J., Gracia-Iguacel C., González-Parra E., Aljama P., Morales E., Cao M., Rodríguez De Córdoba S., Praga M. **Eculizumab in secondary atypical haemolytic uraemic syndrome.** *NEPHROLOGY, DIALYSIS AND TRANSPLANTATION.* 32(3):466-474. I.F.: 4.470

8. Carmona A, Agüera ML, Luna-Ruiz C, Buendía P, Calleros L, García-Jerez A,

Rodríguez-Puyol M, Arias M, Arias-Guillen M, de Arriba G, Ballarin J, Bernis C, Fernández E, García-Rebollo S, Mancha J, Del Peso G, Pérez E, Poch E, Portolés JM, Rodríguez-Puyol D, Sánchez-Villanueva R, Sarro F, Torres A, Martín-Malo A, Aljama P, Ramírez R, Carracedo J. Markers of endothelial damage in patients with chronic kidney disease on hemodialysis. AMERICAN JOURNAL OF PHYSIOLOGY-RENAL PHYSIOLOGY. 312(4):F673-F681. I.F.: 3.611

9. Sanchez-Escuredo, Ana; Sagasta, Amaia; Revuelta, Ignacio; Rodas, Lida M.; Paredes, David; Musquera, Mireia; Diekmann, Fritz; Campistol, Josep M.; Sole, Manel; Oppenheimer, Federico. **Histopathological evaluation of pretransplant donor biopsies in expanded criteria donors with high kidney donor profile index a retrospective observational cohort study.** *TRANSPLANT INTERNATIONAL.* 30(10):975-986. I.F.: 3.079

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11. Torres, Xavier; Comas, Jordi; Arcos, Emma; Tort, Jaume; Diekmann, Fritz. **Death of recipients after kidney living donation triples donors' risk of dropping out from follow-up: a retrospective study.** *TRANSPLANT INTERNATIONAL.* 30(6):603-610. I.F.: 3.079

12. Sentis, Alexis; Diekmann, Fritz; Llobell, Arturo; de Moner, Noemi; Espinosa, Gerard; Yaguee, Jordi; Maria Campistol, Josep; Mirapeix, Eduard; Juan, Manel. **Kinetic analysis of changes in T- and B-lymphocytes after anti-CD20 treatment in renal pathology.** *IMMUNOBIOLOGY.* 222(4):620-630. I.F.: 2.720

13. Maduell F., Varas J., Ramos R., Martin-Malo A., Pérez-Garcia R., Berdud I., Moreso F., Canaud B., Stuard S., Gauly A., Aljama P., Merello J. **Hemodiafiltration Reduces All-Cause and Cardiovascular Mortality in Incident Hemodialysis Patients: A Propensity-Matched Cohort Study.** *AMERICAN JOURNAL OF NEPHROLOGY.* 46(4):288-297. I.F.: 2.542

14. Cristelli MP, Cofán F, Rico N, Trullàs JC, Manzardo C, Agüero F, Bedini JL, Moreno A, Oppenheimer F, Miro JM, CKD-H. Clinic Investigators. **Estimation of renal function by CKD-EPI versus MDRD in a cohort of HIV-infected patients: a cross-sectional analysis.** *BMC NEPHROLOGY.* 18(1):58. I.F.: 2.289

15. Collado S, Coll E, Nicolau C, Azqueta M, Pons M, Cruzado JM, de la Torre B, Deulofeu R, Mojal S, Pascual J, Cases A. **Serum osteoprotegerin in prevalent hemodialysis patients: associations with mortality, atherosclerosis and cardiac function.** *BMC NEPHROLOGY.* 18(1):290. I.F.: 2.289

16. Cristelli MP, Cofán F, Tedesco-Silva H, Trullàs JC, Santos DWCL, Manzardo C, Agüero F, Moreno A, Oppenheimer F, Diekmann F, Medina-Pestana JO, Miro JM, Sao Paulo-Barcelona Renal Transplant in HIV Investigators. **Regional differences in the management and outcome of kidney transplantation in patients with human immunodeficiency virus infection: A 3-year retrospective cohort study.** *TRANSPLANT INFECTIOUS DISEASE.* 19(4):e12724. I.F.: 1.719

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19. Huguet M., Rodas L., Blasco M., Quintana L., Mercadal J., Ortiz-Pérez J., Rovira I., Poch E. **Clinical impact of regional citrate anticoagulation in continuous renal replacement therapy in critically ill patients.** *INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS.* 40(12):676-682. I.F.: 1.169

Review / I.F.: 25.081

1. Garreta E., Oria R., Tarantino C., Pla-Roca M., Prado P., Fernández-Avilés F., Campistol J., Samitier J., Montserrat N. **Tissue engineering by decellularization and 3D bioprinting.** *MATERIALS TODAY.* 20(4):166-178. I.F.: 21.695

2. Lens S, Rodriguez-Tajes S, Llovet LP, Maduell F, Londoño MC. **Treating Hepatitis C in Patients with Renal Failure.** *DIGESTIVE DISEASES.* 35(4):339-346. I.F.: 2.203

3. Rovira J, Diekmann F, Campistol JM, Ramírez-Bajo MJ. **Therapeutic application of extracellular vesicles in acute and chronic renal injury**. *NEFROLOGÍA.* 37(2):126-137. I.F.: 1.183

Letters / I.F.: 7.223

1. Azorín S., Cibeira M., Solé M., Fernández de Larrea C., Rosiñol L., Rovira M., Campistol J., Bladé J. **Renal outcomes of autologous stem cell transplantation among patients with light-chain amyloidosis: a single centre Spanish experience.** *AMYLOID.* 24(sup1):70-71. I.F.: 3.373

2. Carbajal S., Zamora-Martínez C., Prieto-González S., Quintana L., Espinosa G., Cervera R. **Systemic lupus erythematous exacerbation following cessation of belimumab treatment: comments on the article by Furer et al.** *SCANDINAVIAN JOURNAL OF RHEUMATOLOGY.* 46(3):250-251. I.F.: 2.667

3. Piñeiro GJ, Nicolau C, Gaya A, Buñesch L, Poch E. **Role of kidney MRI to monitoring clearance of hemosiderin deposits in paroxysmal nocturnal hemoglobinuria.** *NEFROLOGIA : PUBLICACION OFICIAL DE LA SOCIEDAD ESPANOLA NEFROLOGIA.* 37(2):225-227. I.F.: 1.183

Case Reports / I.F.: 4.498

1. Azorín SE, Cabib CE, Campistol JM. **Diflunisal compassive use in transthyretin hereditary amyloid polyneuropathy: report of a first Spanish experience.** *AMYLOID : THE INTERNATIONAL JOURNAL OF EXPERIMENTAL AND CLINICAL INVESTIGATION.* 24(sup1):105-106. I.F.: 3.373

2. Alcubilla-Prats, Pau; Sole, Manel; Botey, Albert; Maria Grau, Josep; Garrabou, Gloria; Poch, Esteban. **Kidney involvement in MELAS syndrome: Description of 2 cases.** MEDICINA CLINICA. 148(8):357-361. I.F.: 1.125

GRANTS FOR RESEARCH IN PROGRESS

Campistol JM. **Modulación de la vía Wnt/beta-Catenina, efectos en la progresión de la disfunción crónica del injerto renal.**
Sponsored by: Instituto de Salud Carlos III.
PI13/02052
Duration: 01/01/2014-31/12/2017

Diekmann F. **Extracellular Vesicles and exosomes from adult stem cells in the regeneration of organ injury.**
Sponsored by: European Comission. 612224
Duration: 01/02/2014-31/01/2018

Diekmann F. **Red de Investigación renal Sponsored by: Instituto de Salud Carlos III.**
RD16/0009/0023
Duration: 01/01/2017-31/12/2021

Manyalich M. **The Effect of Differing Kidney Disease Treatment Modalities and Organ Donation and Transplantation Practices on Health Expenditure and Patient.**
Sponsored by: European Comission. 739495
Duration: 01/01/2017-31/12/2019

Revuelta I. **Papel de los exosomas de células inmunes de memoria (InmEx) en la activación del endotelio y desarrollo precoz del rechazo mediado por anticuerpos en el trasplante renal.**
Sponsored by: Instituto de Salud Carlos III.
PI16/00115
Duration: 01/01/2017-31/12/2019

Ricart MJ. **Trasplante de páncreas – monitorización de poblaciones linfocitarias y aplicación de ecografía con contraste y elastografia como preditores de rechazo y sobrevida.**
Sponsored by: Instituto de Salud Carlos III.
PI16/00167
Duration: 01/01/2017-31/12/2019

DOCTORAL THESES

Campistol JM. **FGF23 y vitamina D tras el trasplante renal.**
PhD studient: Xoana Barros Freiria

Oppenheimer F. **Empleo sistemático de biopsias renales pre-implante en donantes de criterios expandidos.**
PhD student: Ana Sánchez Escuredo

2.4 Cardiovascular, nutrition and aging unit

LOCATION
CELLEX building
HCB building

KEYWORDS
1. **Nutrition**
2. **Mediterranean diet**
3. **Cardiovascular disease**
4. **Cardiovascular risk factors**
5. **Cognition**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	138.46	33	18	13
2016	143.83	32	21	8
2017	188.02	41	25	11

TEAM INVOLVED IN
CIBEROBN
AGAUR_SRG17

AWARDS
Premio Juan Vivancos 2017 al Mejor Trabajo Científico
Institution: Societat Catalano-Balear de Medicina Interna (SCBMI)
Awardee/s: Ramon Estruch

Premio Aceite de Oliva 2017 en Investigación, Desarrollo e Innovación
Institution: Interprofesional de Aceite de Oliva
Awardee/s: Ramon Estruch

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Monica Domenech (FCRB)
Dolors Estrada (HCB)
Alfonso Lopez (HCB)
Margarita Navarro (HCB)

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Tania Freitas (IDIBAPS)
Ana M. Ruiz (CIBER)

NURSING STAFF
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Ana Jordan (HCB)
Rosa Soriano (HCB)

COLLABORATORS
Marina Sadurni (IDIBAPS)
Conxa Viñas (CIBER)

STRATEGIC OBJECTIVES

To deep in the knowledge of the effects of the lifestyle (Effect of diet, alcohol and physical exercise) in the different stages of life (adolescence, pregnancy, elderly ...) and its role in the prevention of chronic diseases (hypertension, diabetes, dyslipidemia, cognitive impairment) and cancer.

MAIN LINES OF RESEARCH

1. Protective Effects of Mediteranean Diet on cardiovascular and cerebrovascular prevention (chronic diseases, neurodegenerative diseases and cáncer).
2. Effects of alcohol (beer or wine) compsumption on health
3. Effects of other diet components on healthy: olive oil, nuts, cocoa, fatty-acids, tomatoes....
4. Assesment on cardiovascular risk factors on primary prevention, specially blood pressure management .
5. Hair failure physiopathology
6. Aging
7. Thrombosis

TEAM Ramon Estruch

PUBLICATIONS

Originals / I.F.: 188.028

1. Wang, Dong D.; Toledo, Estefania; Hruby, Adela; Rosner, Bernard A.; Willett, Walter C.; Sun, Qi; Razquin, Cristina; Zheng, Yan; Ruiz-Canela, Miguel; Guasch-Ferre, Marta; Corella, Dolores; Gomez-Gracia, Enrique; Fiol, Miquel; Estruch, Ramon; Ros, Emilio; Lapetra, Jose; Fito, Montserrat; Aros, Fernando; Serra-Majem, Luis; Lee, Chih-Hao; Clish, Clary B.; Liang, Liming; Salas-Salvado, Jordi; Martinez-Gonzalez, Miguel A.; Hu, Frank B. **Plasma Ceramides, Mediterranean Diet, and Incident Cardiovascular Disease in the PREDIMED Trial (Prevencion con Dieta Mediterranea).** *CIRCULATION.* 135(21):2028-2040. I.F.: 19.309

2. Hernáez Á., Castañer O., Elosua R., Pintó X., Estruch R., Salas-Salvadó J., Corella D., Arós F., Serra-Majem L., Fiol M., Ortega-Calvo M., Ros E., Martínez-González M., De La Torre R., López-Sabater M., Fitó M. **Mediterranean Diet Improves High-Density Lipoprotein Function in High-Cardiovascular-Risk Individuals.** *CIRCULATION.* 135(7):633-643. I.F.: 19.309

3. Papadaki A, Martínez-González MÁ, Alonso-Gómez A, Rekondo J, Salas-Salvadó J, Corella D, Ros E, Fitó M, Estruch R, Lapetra J, García-Rodriguez A, Fiol M, Serra-Majem L, Pintó X, Ruiz-Canela M, Bulló M, Serra-Mir M, Sorlí JV, Arós F. **Mediterranean diet and risk of heart failure: results from the PREDIMED randomized controlled trial.** *EUR J HEART FAIL.* 19(9):1179-1185. I.F.: 6.968

4. Toledo E, Wang DD, Ruiz-Canela M, Clish CB, Razquin C, Zheng Y, Guasch-Ferré M, Hruby A, Corella D, Gómez-Gracia E, Fiol M, Estruch R, Ros E, Lapetra J, Fito M, Aros F, Serra-Majem L, Liang L, Salas-Salvadó J, Hu FB, Martínez-González MA. **Plasma lipidomic profiles and cardiovascular events in a randomized intervention trial with the Mediterranean diet**. *AMERICAN JOURNAL OF CLINICAL NUTRITION.* 106(4):973-983. I.F.: 6.926

5. De la Torre R, Corella D, Castañer O, Martínez-González MA, Salas-Salvador J, Vila J, Estruch R, Sorli JV, Arós F, Fiol M, Ros E, Serra-Majem L, Pintó X, Gómez-Gracia E, Lapetra J, Ruiz-Canela M, Basora J, Asensio EM, Covas MI, Fitó M. **Protective effect of homovanillyl alcohol on cardiovascular disease and total mortality: virgin olive oil, wine, and catechol-methylathion.** *AMERICAN JOURNAL OF CLINICAL NUTRITION.* 105(6):1297-1304. I.F.: 6.926

6. Guasch-Ferre, Marta; Becerra-Tomas, Nerea; Ruiz-Canela, Miguel; Corella, Dolores; Schroeder, Helmut; Estruch, Ramon; Ros, Emilio; Aros, Fernando; Gomez-Gracia, Enrique; Fiol, Miquel; Serra-Majem, Lluis; Lapetra, Jose; Basora, Josep; Martin-Calvo, Nerea; Portoles, Olga; Fito, Montserrat; Hu, Frank B.; Forga, Lluis; Salas-Salvado, Jordi. **Total and subtypes of dietary fat intake and risk of type 2 diabetes mellitus in the Prevencion con Dieta Mediterranea (PREDIMED) study.** *AMERICAN JOURNAL OF CLINICAL NUTRITION.* 105(3):723-735. I.F.: 6.926

7. Camacho-Barcia ML, Bulló M, Garcia-Gavilán JF, Ruiz-Canela M, Corella D, Estruch R, Fitó M, García-Layana A, Arós F, Fiol M, Lapetra J, Serra-Majem L, Pintó X, García-Arellano A, Vinyoles E, Sorli JV, Salas-Salvadó J. **Association of Dietary Vitamin K1 Intake With the Incidence of Cataract Surgery in an Adult Mediterranean Population: A Secondary Analysis of a Randomized Clinical Trial.** *JAMA OPHTHALMOLOGY.* 135(6):657-661. I.F.: 5.625

8. Yu, Edward; Ruiz-Canela, Miguel; Hu, Frank B.; Clish, Clary B.; Corella, Dolores; Salas-Salvado, Jordi; Hruby, Adela; Fito, Montserrat; Liang, Liming; Toledo, Estefania; Ros, Emilio; Estruch, Ramon; Gomez-Gracia, Enrique; Lapetra, Jose; Aros, Fernando; Romaguera, Dora; Serra-Majem, Lluis; Guasch-Ferre, Marta; Wang, Dong D.; Martinez-Gonzalez, Miguel A. **Plasma Arginine/Asymmetric Dimethylarginine Ratio and Incidence of Cardiovascular Events: A Case-Cohort Study.** *JOURNAL OF CLINICAL ENDOCRINOLOGY AND METABOLISM.* 102(6):1879-1888. I.F.: 5.455

9. Díez-Espino J, Basterra-Gortari FJ, Salas-Salvadó J, Buil-Cosiales P, Corella D, Schröder H, Estruch R, Ros E, Gómez-Gracia E, Arós F, Fiol M, Lapetra J, Serra-Majem L, Pintó X, Babio N, Quiles L, Fito M, Marti A, Toledo E, PREDIMED Investigators. **Egg consumption and cardiovascular disease according to diabetic status: The PREDIMED study.** *CLINICAL NUTRITION.* 36(4):1015. I.F.: 4.548

10. Almanza-Aguilera E., Urpi-Sarda M., Llorach R., Vázquez-Fresno R., Garcia-Aloy M., Carmona F., Sanchez A., Madrid-Gambin F., Estruch R., Corella D., Andres-Lacueva C. **Microbial metabolites are associated with a high adherence to a Mediterranean dietary pattern using a 1H-NMR-based untargeted metabolomics approach.** *JOURNAL OF NUTRITIONAL BIOCHEMISTRY.* 48:36-43. I.F.: 4.518

11. Rajaram, Sujatha; Valls-Pedret, Cinta; Cofan, Montserrat; Sabate, Joan; Serra-Mir, Merce; Perez-Heras, Ana M.; Arechiga, Adam; Casaroli-Marano, Ricardo P.; Alforja, Socorro; Sala-Vila, Aleix; Domenech, Monica; Roth, Irene; Freitas-Simoes, Tania M.; Calvo, Carlos; Lopez-Illamola, Anna; Haddad, Ella; Bitok, Edward; Kazzi, Natalie; Huey, Lynnley; Fan, Joseph; Ros, Emilio. **The Walnuts and Healthy Aging Study (WAHA): Protocol for a Nutritional Intervention Trial with Walnuts on Brain Aging.** *FRONTIERS IN AGING NEUROSCIENCE.* 8(JAN):333. I.F.: 4.504

12. Guasch-Ferre, Marta; Hu, Frank B.; Ruiz-Canela, Miguel; Bullo, Monica; Toledo, Estefania; Wang, Dong D.; Corella, Dolores; Gomez-Gracia, Enrique; Fiol, Miquel; Estruch, Ramon; Lapetra, Jose; Fito, Montserrat; Aros, Fernando; Serra-Majem, Lluis; Ros, Emilio; Dennis, Courtney; Liang, Liming; Clish, Clary B.; Martinez-Gonzalez, Miguel A.; Salas-Salvado, Jordi. **Plasma Metabolites From Choline Pathway and Risk of Cardiovascular Disease in the PREDIMED (Prevention With Mediterranean Diet) Study.** *JOURNAL OF THE AMERICAN HEART ASSOCIATION.* 6(11):006524. I.F.: 4.425

13. Amor, Antonio J.; Serra-Mir, Merce; Martinez-Gonzalez, Miguel A.; Corella, Dolores; Salas-Salvado, Jordi; Fito, Montserrat; Estruch, Ramon; Serra-Majem, Lluis; Aros, Fernando; Babio, Nancy; Ros, Emilio; Ortega, Emilio; PREDIMED Investigators. **Prediction of Cardiovascular Disease by the Framingham-REGICOR Equation in the High-Risk PREDIMED Cohort: Impact of the Mediterranean Diet Across Different Risk Strata.** *JOURNAL OF THE AMERICAN HEART ASSOCIATION.* 6(3):004803. I.F.: 4.425

14. Storniolo C., Casillas R., Bulló M., Castañer O., Ros E., Sáez G., Toledo E., Estruch R., Ruiz-Gutiérrez V., Fitó M., Martínez-González M., Salas-Salvadó J., Mitjavila M., Moreno J. **A Mediterranean diet supplemented with extra virgin olive oil or nuts improves**

endothelial markers involved in blood pressure control in hypertensive women. *EUROPEAN JOURNAL OF NUTRITION.* 56(1):89-97. I.F.: 4.370

15. Colmán-Martínez M, Martínez-Huélamo M, Valderas-Martínez P, Arranz-Martínez S, Almanza-Aguilera E, Corella D, Estruch R, Lamuela-Raventós RM. **Trans-Lycopene from tomato juice attenuates inflammatory biomarkers in human plasma samples: an intervention trial.** *MOLECULAR NUTRITION AND FOOD RESEARCH.* 61(11):1600993. I.F.: 4.323

16. Quifer-Rada P, Chiva-Blanch G, Jáuregui O, Estruch R, Lamuela-Raventós RM. **A discovery-driven approach to elucidate urinary metabolome changes after a regular and moderate consumption of beer and non-alcoholic beer in subjects at high cardiovascular risk**. *MOLECULAR NUTRITION AND FOOD RESEARCH.* 61(10):1600980. I.F.: 4.323

17. Hernáez Á., Castañer O., Goday A., Ros E., Pintó X., Estruch R., Salas-Salvadó J., Corella D., Arós F., Serra-Majem L., Martínez-González M., Fiol M., Lapetra J., de la Torre R., López-Sabater M., Fitó M. **The Mediterranean Diet decreases LDL atherogenicity in high cardiovascular risk individuals: A randomized controlled trial.** *MOLECULAR NUTRITION AND FOOD RESEARCH.* 61(9):1601015. I.F.: 4.323

18. Pérez-Martí A, Garcia-Guasch M, Tresserra-Rimbau A, Carrilho-Do-Rosário A, Estruch R, Salas-Salvadó J, Martínez-González MÁ, Lamuela-Raventós R, Marrero PF, Haro D, Relat J. **A low-protein diet induces body weight loss and browning of subcutaneous white adipose tissue through enhanced expression of hepatic Fibroblast Growth Factor 21 (FGF21)**. *MOL NUTR FOOD RES.* 61(8):1600725. I.F.: 4.323

19. Madrid-Gambin, Francisco; Llorach, Rafael; Vazquez-Fresno, Rosa; Urpi-Sarda, Mireia; Almanza-Aguilera, Enrique; Garcia-Aloy, Mar; Estruch, Ramon; Corella, Dolores; Andres-Lacueva, Cristina. **Urinary H-1 Nuclear Magnetic Resonance Metabolomic Fingerprinting Reveals Biomarkers of Pulse Consumption Related to Energy-Metabolism Modulation in a Subcohort from the PREDIMED study.** *JOURNAL OF PROTEOME RESEARCH.* 16(4):1483-1491. I.F.: 4.268

20. Hu EA, Martínez-González MA, Salas-Salvadó J, Corella D, Ros E, Fitó M, Garcia-Rodriguez A, Estruch R, Arós F, Fiol M, Lapetra J, Serra-Majem L, Pintó X, Ruiz-Canela M, Razquin C, Bulló M, Sorlí JV, Schröder H, Rebholz CM, Toledo E, PREDIMED Study and SUN Project Investigators. **Potato Consumption Does Not Increase Blood Pressure or Incident Hypertension in 2 Cohorts of Spanish Adults.** *JOURNAL OF NUTRITION.* 147(12):2272-2281. I.F.: 4.145

21. Yu, Edward; Ruiz-Canela, Miguel; Guasch-Ferre, Marta; Zheng, Yan; Toledo, Estefania; Clish, Clary B.; Salas-Salvado, Jordi; Liang, Liming; Wang, Dong D.; Corella, Dolores; Fito, Montse; Gomez-Gracia, Enrique; Lapetra, Jose; Estruch, Ramon; Ros, Emilio; Cofan, Montserrat; Aros, Fernando; Romaguera, Dora; Serra-Majem, Lluis; Sorli, Jose V.; Hu, Frank B.; Martinez-Gonzalez, Miguel A. **Increases in Plasma Tryptophan Are Inversely Associated with Incident Cardiovascular Disease in the Prevencion con Dieta Mediterranea (PREDIMED) Study.** *JOURNAL OF NUTRITION.* 147(3):314-322. I.F.: 4.145

22. Perrone-Filardi P, Coca A, Galderisi M, Paolillo S, Alpendurada F, de Simone G, Donal E, Kahan T, Mancia G, Redon J, Schmieder R, Williams B, Agabiti-Rosei E. **Noninvasive cardiovascular imaging for evaluating subclinical target organ damage in hypertensive patients: a consensus article from the European Association of Cardiovascular Imaging, the European Society of Cardiology Council on Hypertension and the European Society of Hypertension.** *JOURNAL OF HYPERTENSION.* 35(9):1727-1741. I.F.: 4.085

23. Bargallo, Nuria; Gilabert, Rosa; Romero-Mamani, Edwin-Saul; Cofan, Montserrat; Calder, Philip C.; Fito, Montserrat; Corella, Dolores; Salas-Salvado, Jordi; Ruiz-Canela, Miguel; Estruch, Ramon; Ros, Emilio; Sala-Vila, Aleix. **Red Blood Cell Eicosapentaenoic Acid Inversely Relates to MRI-Assessed Carotid Plaque Lipid Core Burden in Elders at High Cardiovascular Risk.** *NUTRIENTS.* 9(9):E1036. I.F.: 3.550

24. Guo X, Tresserra-Rimbau A, Estruch R, Martínez-González MA, Medina-Remón A, Fitó M, Corella D, Salas-Salvadó J, Portillo MP, Moreno JJ, Pi-Sunyer X, Lamuela-Raventós RM. **Polyphenol Levels Are Inversely Correlated with Body Weight and Obesity in an Elderly Population after 5 Years of Follow Up (The Randomised PREDIMED Study).** *NUTRIENTS.* 9(5):E452. I.F.: 3.550

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GRANTS FOR RESEARCH IN PROGRESS

Estruch R. REDIMED-PLUS: **Efecto de una dieta mediterránea hipocalórica y promoción de la actividad física en prevención primaria cardiovascular. Estudio piloto sobre marcadores intermedios.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/02184
Duration: 01/01/2014-31/12/2017

Estruch R. **The Moderate Alcohol and Cardiovascular Health Trial.**
Sponsored by: National Institutes of Health (NIH). 38685
Duration: 30/09/2016-31/07/2021

Estruch R. **Nous predictors de la cardiopatía coronaria: micropartículas endotelials circulants, funcionalitat de les partícules d'HDL i composició en àcids grassos de les membranes cel·lulars.**
Sponsored by: Fundació la Marató de TV3. 20151230
Duration: 29/06/2016-28/06/2019

Estruch R. **Efecto de una pérdida de peso con dieta mediterránea hipocalórica y promoción de la actividad física en la prevención primaria cardiovascular: Estudio PREDIMED-PLUS.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI044504
Duration:01/01/2017-31/12/2019

Estruch R. **Efecto de una pérdida de peso con dieta mediterránea hipocalórica y promoción de la actividad física en prevención primaria cardiovascular: Estudio PREDIMED-PLUS.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00381
Duration: 01/01/2017-31/12/2019

2.5 Respiratory biophysics and bioengineering

LOCATION
UB School of Medicine

WEB
www.ub.edu/biofisica

KEYWORDS
1. **Respiratory mechanics**
2. **Lung bioengineering**
3. **Neuroimaging in refractory epilepsy**
4. **Neuroimaging in Parkinson's disease**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	69.76	16	10	5
2016	51.56	12	9	3
2017	82.69	18	13	4

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CIBERES
CIBER-BBN

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Aida Niñerola (UB)

PRE-DOCTORAL RESEARCHERS
Jair Asir (UB)
Maeba Polo (CIBER)
Miguel Ángel Rodríguez (UB)

STRATEGIC OBJECTIVES

The general objectives 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 scientific approach, promoting industrial transfer of the technological advances derived from the research work.

MAIN LINES OF RESEARCH

1. **Respiratory mechanics.**
   To investigate the viscoelastic properties of the airways and lung tissues. The work focuses on the study of upper airway collapsibility in obstructive apnea-hypopnea and in the monitoring noninvasive mechanical ventilation. We aim to improve noninvasive diagnostic techniques and to optimize the treatments.

2. **Molecular and cellular nanomechanics.**
   To use atomic force microscopy, magnetic microspheres and traction force microscopy to study cell adhesion and mechanics of lung cells. We study the mechanical properties of stem cells and of the way in which mechanical stimuli enhance differentiation. We also work on lung regeneration, focusing on recreating the mechanical pulmonary micro-nano environment to optimize cell differentiation.

3. **Biomedical imaging analysis.**
   Imaging analysis focused on the processing of photon emission tomography (SPECT) and positron emission tomography (PET) images aimed at securing more precise quantification of gammagraphic (scintigraphic) studies.

TEAM Ramon Farré

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.: 82.69

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4. Akbarpour, Mahzad; Khalyfa, Abdelnaby; Qiao, Zhuanghong; Gileles-Hillel, Alex; Almendros, Isaac; Farre, Ramon; Gozal, David;. **Altered CD8(+) T-Cell Lymphocyte Function and TC1 Cell Stemness Contribute to Enhanced Malignant Tumor Properties in Murine Models of Sleep Apnea.** *SLEEP.* 40(2):zsw040. I.F.: 4.923

5. Campillo N., Torres M., Vilaseca A., Nonaka P., Gozal D., Roca-Ferrer J., Picado C., Montserrat J., Farré R., Navajas D., Almendros I. **Role of cyclooxygenase-2 on intermittent hypoxia-induced lung tumor malignancy in a mouse model of sleep apnea.** *SCIENTIFIC REPORTS.* 7:44693. I.F.: 4.259

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7. Khalyfa A., Poroyko V., Qiao Z., Gileles-Hillel A., Akbarpour M., Almendros I., Farré R., Gozal D. **Exosomes and metabolic function in mice exposed to alternating dark-light cycles mimicking night shift work schedules.** *FRONTIERS IN PHYSIOLOGY.* 8(NOV):882. I.F.: 4.134

8. Gozal, David; Gileles-Hillel, Alex; Cortese, Rene; Li, Yan; Almendros, Isaac; Qiao, Zhuanhong; Khalyfa, Ahamed A.; Andrade, Jorge; Khalyfa, Abdelnaby. **Visceral White Adipose Tissue after Chronic Intermittent and Sustained Hypoxia in Mice.** *AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY.* 56(4):477-487. I.F.: 4.100

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14. Vilaseca A., Campillo N., Torres M., Musquera M., Gozal D., Montserrat J., Alcaraz A., Touijer K., Farré R., Almendros I. **Intermittent hypoxia increases kidney tumor vascularization in a murine model of sleep apnea.** *PLOS ONE.* 12(6):e0179444. I.F.: 2.806

15. Urbano J., Da Palma R., De Lima F., Fratini P., Guimaraes L., Uriarte J., Alvarenga L., Miglino M., Vieira R., Prates R., Navajas D., Farrè R., Oliveira L.. **Effects of two different decellularization routes on the mechanical properties of decellularized lungs.** *PLOS ONE.* 12(6):e0178696. I.F.: 2.806

16. Vilaseca A, Nguyen DP, Vertosick EA, Corradi RB, Musquera M, Pérez M, Fossati N, Sjoberg DD, Farré R, Almendros I, Montserrat JM, Benfante NE, Hakimi AA, Skanderup AJ, Russo P, Alcaraz A, Touijer KA. **Obstructive sleep apnea and Fuhrman grade in patients with clear cell renal cell carcinoma treated surgically.** *WORLD J UROL.* 35(1):51-56. I.F.: 2.743

17. Martínez-García MÁ, Riveiro-Falkenbach E, Rodríguez-Peralto JL, Nagore E, Martorell-Calatayud A, Campos-Rodríguez F, Farré R, Hernández Blasco L, Bañuls Roca J, Chiner Vives E, Sánchez-de-la-Torre A, Abad Capa J, Montserrat JM, Almendros I, Pérez-Gil A, Cabriada Nuño V, Cano-Pumarega I, Corral Peñafiel J, Diaz Cambriles T, Mediano O, Dalmau Arias J, Gozal D, Spanish Sleep Network. **A prospective multicenter cohort study of cutaneous melanoma: clinical staging and potential associations with HIF-1α and VEGF expressions.** *MELANOMA RESEARCH.* 27(6):558-564. I.F.: 2.615

18. Isetta V, Torres M, González K, Ruiz C, Dalmases M, Embid C, Navajas D, Farré R, Montserrat JM. **A New mHealth application**

to support treatment of sleep apnoea patients. *JOURNAL OF TELEMEDICINE AND TELECARE.* 23(1):14-18. I.F.: 2.008

Review / I.F.: 6.445

1. Jorba I., Uriarte J., Campillo N., Farré R., Navajas D. **Probing Micromechanical Properties of the Extracellular Matrix of Soft Tissues by Atomic Force Microscopy.** *JOURNAL OF CELLULAR PHYSIOLOGY.* 232(1):19-26. I.F.: 4.080

2. Almendros, Isaac; Crespo, Andrea; Tura-Ceide, Olga; Bonsignore, Maria R. **Clinical physiology and sleep: insights from the European Respiratory Society Congress 2017.** *JOURNAL OF THORACIC DISEASE.* 9(suppl 16):S1532-S1536. I.F.: 2.365

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Editorial / I.F.: 17.648

1. Almendros, Isaac; Garcia-Rio, Francisco;. **Sleep apnoea, insulin resistance and diabetes: the first step is in the fat.** *EUROPEAN RESPIRATORY JOURNAL.* 49(4):1700179. I.F.: 10.569

2. Almendros I., Farre N. **Obstructive sleep apnea and atherosclerosis: Both the gut microbiome and hypercapnia matter.** *AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY.* 57(5):501-503. I.F.: 4.100

3. Martínez-García MÁ, Campos-Rodríguez F, Almendros I. **Sleep Apnea and Tumor Agressivity.** *ARCHIVOS DE BRONCONEUMOLOGIA.* 53(6):300-301. I.F.: 2.979

GRANTS FOR RESEARCH IN PROGRESS

Farré R. **Mecanismos del aumento del crecimiento tumoral y metástasis inducido por hipoxia intermitente en modelo celular/animal de apnea del sueño. Papel del envejecimiento y la menopausia.**
Sponsored by: Instituto Salud Carlos III. FIS: PI14/00004
Duration: 01/01/2015-31/12/2017

Farré R. **Impact of sleep apnea syndrome on persistent atrial fibrillation and effect of intervention with continuous positive airway pressure (CPAP). Role of hypoxia and sleep fragmentation.**
Sponsored: Fundació Marató TV3. 20143231
Duration: 01/10/2015-31/09/2018

DOCTORAL THESES

Almendros I. **Molecular and clinical response of renal cell carcinoma to intermittent hypoxia.**
PhD student: Antonio Vilaseca Cabo

2.6 Applied research in infectious respiratory diseases, critically ill patients and lung cancer

LOCATION
CELLEX building 2B

WEB
www.idibapsrespiratoryresearch.org

KEYWORDS
1. **Respiratory infections**
2. **Mechanical ventilation**
3. **Pneumonia**
4. **COPD, bronchiectasis**
5. **Breathing disturbances in sleep**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	189.70	31	22	6
2016	134.54	32	22	7
2017	160.19	30	20	9

TEAM INVOLVED IN
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Francesco Pagliara (FCRB)
Montserrat Rigol (FCRB)
Monique C Suárez (HCB)
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Minlan Yang (FCRB)

ADMINISTRATIVE STAFF
Elisabeth Sancho (CIBERES)

STRATEGIC OBJECTIVES

1. To study respiratory infections, invasive and noninasive mechanical ventilation, exacerbations of chronic obstructive pulmonary disease (COPD), bronchiectasis
2. Physiopathological and treatment studies in animals and humans with ventilator associated pneumonia and or ARDS
3. Human and animal model research in sleep apnea syndrome. Telemedicine and multcentre studies

TEAM Antoni Torres

MAIN LINES OF RESEARCH

1. Epidemiology, prevention and new treatments of: pneumonia associated with artificial ventilation, community-acquired pneumonia. New treatments. Resistances of microorganisms. Local and systemic inflammatory response.
2. Etiopathogenesis, bronchial infection and inflammation in the patient with chronic obstructive pulmonary disease (COPD).
3. Chronic pulmonary infections: bronchiectasis not associated with cystic fibrosis, immune deficiencies and cystic fibrosis in the adult.
4. Invasive and noninvasive mechanical ventilation: epidemiology, cost-effectiveness and physiopathology. Weaning from mechanical ventilation: role of the inflammatory response and respiratory failure following extubation.
5. Study of the pharmacokinetics of antibiotics and other drugs in the ventilated and non-ventilated patient.
6. Porcine model of acute pulmonary damage due to methicillinresistant P. aeruginosa, S. aureus and S. pneumoniae
7. Chronic sleep apnea models.
8. Multicenter Study to assess the effect of CPAP on cardiovascular diseases in patients with sleep apnea.
9. Telematic control of CPAP treatment in sleep apnea syndrome.

RESEARCH GROUP
BREATHING DISTURBANCES IN SLEEP

GROUP LEADER
Josep M. Montserrat (HCB)

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.
Finally, the envelopment of a visrtual sleep unit is one of the major topic during last year as well as other telemedicine procedures to improve the patient management and the cost effectivenes.

PUBLICATIONS

Originals / I.F.: 160.19

1. Ranzani OT, Prina E, Menéndez R, Ceccato A, Cilloniz C, Méndez R, Gabarrus A, Barbeta E, Bassi GL, Ferrer M, Torres A. **New Sepsis Definition (Sepsis-3) and Community-acquired Pneumonia Mortality A Validation and Clinical Decision-Making Study.** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE.* 196(10):1287-1297. I.F.: 13.204

2. Corral J, Sánchez-Quiroga MÁ, Carmona-Bernal C, Sánchez-Armengol Á, de la Torre AS, Durán-Cantolla J, Egea CJ, Salord N, Monasterio C, Terán J, Alonso-Alvarez ML, Muñoz-Méndez J, Arias EM, Cabello M, Montserrat JM, De la Peña M, Serrano JC, Barbe F, Masa JF, Spanish Sleep Network. **Conventional Polysomnography is Not Necessary for the Management of Most Patients with Suspected Obstructive Sleep Apnea.** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE.* 196(9):1181-1190. I.F.: 13.204

3. Li Bassi G; Panigada M; Ranzani O; Zanella A; Berra L; Cressoni M; Parrini V; Kandil H; Salati G; Selvaggi P; Amatu A; Sanz-Moncosi M; Biagioni E; Tagliaferri F; Furia M; Mercurio G; Costa A; Manca T; Lindau S; Babel J; Cavana M; Chiurazzi C; Martí J; Consonni D; Gattinoni L; Pesenti A; Wiener-Kronish J; Bruschi C; Ballotta A; Salsi P; Livigni S; Iotti G; Fernandez J; Girardis M; Barbagallo M; Moise G; Antonelli M; Caspani M; Vezzani A; Meybohm P. **Randomized, multicenter trial of lateral Trendelenburg versus semirecumbent body position for the prevention of ventilator-associated pneumonia.** *INTENSIVE CARE MEDICINE.* 43(11):1572-1584. I.F.: 12.015

4. Martin-Loeches, Ignacio; Schultz, Marcus J.; Vincent, Jean-Louis; Alvarez-Lerma, Francisco; Bos, Lieuwe D.; Sole-Violan, Jordi; Torres, Antoni; Rodriguez, Alejandro;. **Increased incidence of co-infection in critically ill patients with influenza.** *INTENSIVE CARE MEDICINE.* 43(1):48-58. I.F.: 12.015

5. Sellares J, Ferrer M, Anton A, Loureiro H, Bencosme C, Alonso R, Martinez-Olondris P, Sayas J, Peñacoba P, Torres A. **Discontinuing noninvasive ventilation in severe chronic obstructive pulmonary disease exacerbations: a randomised controlled trial.** *EUROPEAN RESPIRATORY JOURNAL.* 50(1):1601448. I.F.: 10.569

6. Zakharkina, Tetyana; Martin-Loeches, Ignacio; Matamoros, Sebastien; Povoa, Pedro; Torres, Antoni; Kastelijn, Janine B.; Hofstra, Jorrit J.; de Wever, B.; de Jong, Menno; Schultz, Marcus J.; Sterk, Peter J.; Artigas, Antonio; Bos, Lieuwe D. J. **The dynamics of the pulmonary microbiome during mechanical ventilation in the intensive care unit and the association with occurrence of pneumonia.** *THORAX.* 72(9):803-810. I.F.: 8.272

7. Cillóniz C, Torres A, Manzardo C, Gabarrús A, Ambrosioni J, Salazar A, García F, Ceccato A, Mensa J, de la Bella Casa JP, Moreno A, Miró JM. **Community-Acquired Pneumococcal Pneumonia in Virologically Suppressed HIV-Infected Adult Patients: A Matched Case-Control Study.** *CHEST.* 152(2):295-303. I.F.: 6.147

8. Ceccato A, Torres A, Cilloniz C, Amaro R, Gabarrus A, Polverino E, Prina E, Garcia-Vidal C, Muñoz-Conejero E, Mendez C, Cifuentes I, Puig de la Bella Casa J, Menendez R, Niederman MS. **Invasive Disease vs Urinary Antigen-Confirmed Pneumococcal Community-Acquired Pneumonia.** *CHEST.* 151(6):1311-1319. I.F.: 6.147

9. Polverino E, Rosales-Mayor E, Dale GE, Dembowsky K, Torres A. **The role of neutrophil elastase inhibitors in lung diseases.** *CHEST.* 152(2):249-262. I.F.: 6.147

10. Stolz, Daiana; Leeming, Diana Julie; Kristensen, Jacob Hull Edfort; Karsdal, Morten A.; Boersma, Wim; Louis, Renaud; Milenkovic, Branislava; Kostikas, Konstantinos; Blasi, Francesco; Aerts, Joachim; Sand, Jannie M. B.; Wouters, Emiel F. M.; Rohde, Gernot; Prat, Cristina; Torres, Antoni; Welte, Tobias; Roth, Michael; Papakonstantinou, Eleni; Tamm, Michael. **Systemic Biomarkers of Collagen and Elastin Turnover Are Associated With Clinically Relevant Outcomes in COPD.** *CHEST.* 151(1):47-59. I.F.: 6.147

11. Martinez-Nicolas A, Guaita M, Santamaría J, Montserrat JM, Rol MÁ, Madrid JA. **Circadian impairment of distal skin temperature rhythm in patients with sleep disordered breathing: The effect of CPAP.** *SLEEP.* 40(6). I.F.: 4.923

12. Campillo, Noelia; Torres, Marta; Vilaseca, Antoni; Naomi Nonaka, Paula; Gozal, David; Roca-Ferrer, Jordi; Picado, Cesar; Maria

Montserrat, Josep; Farre, Ramon; Navajas, Daniel; Almendros, Isaac. **Role of cyclooxygenase-2 on intermittent hypoxia-induced lung tumor malignancy in a mouse model of sleep apnea.** *SCIENTIFIC REPORTS.* 7:44693. I.F.: 4.259

13. Amaro R; Sellarés J; Polverino E; Cilloniz C; Ferrer M; Fernández-Barat L; Mensa J; Niederman M; Torres A. **Antibiotic therapy prior to hospital admission is associated with reduced septic shock and need for mechanical ventilation in patients with community-acquired pneumonia.** *JOURNAL OF INFECTION.* 74(5):442-449. I.F.: 4.201

14. Fernandez-Barat, Laia; Ferrer, Miquel; De Rosa, Francesca; Gabarrus, Albert; Esperatti, Mariano; Terraneo, Silvia; Rinaudo, Mariano; Li Bassi, Gianluigi; Torres, Antoni. **Intensive care unit-acquired pneumonia due to Pseudomonas aeruginosa with and without multidrug resistance.** *JOURNAL OF INFECTION.* 74(2):142-152. I.F.: 4.201

15. Lucena, C. M.; Rovira, M.; Gabarrus, A.; Filella, X.; Martinez, C.; Domingo, R.; Torres, A.; Agusti, C. **The clinical value of biomarkers in respiratory complications in hematopoietic SCT.** *BONE MARROW TRANSPLANTATION.* 52(3):415-422. I.F.: 3.874

16. Menendez, Rosario; Mendez, Raul; Polverino, Eva; Rosales-Mayor, Edmundo; Amara-Elori, Isabel; Reyes, Soledad; Posadas, Tomas; Fernandez-Barat, Laia; Torres, Antoni. **Factors associated with hospitalization in bronchiectasis exacerbations: A one-year follow-up study.** *RESPIRATORY RESEARCH.* 18(1):176. I.F.: 3.841

17. Almendros, I.; Campillo, N.; Falcones, B.; Montserrat, J.; Gozal, D.; Obeso, A.; Gallego-Martin, T.; Navajas, D.; Farre, R. **Frequency And Magnitude Of Intermittent Hypoxia Modulate Endothelial Wound Healing In A Cell Culture Model Of Sleep Apnea.** *JOURNAL OF APPLIED PHYSIOLOGY.* 123(5):1047-1054. I.F.: 3.351

18. Barceló A, Morell-Garcia D, Salord N, Esquinas C, Pérez G, Pérez A, Monasterio C, Gasa M, Fortuna AM, Montserrat JM, Mayos M. **A randomized controlled trial: branched-chain amino acid levels and glucose metabolism in patients with obesity and sleep apnea.** *JOURNAL OF SLEEP RESEARCH.* 26(6):773-781. I.F.: 3.259

19. Cilloniz C, Ewig S, Gabarrus A, Ferrer M, Puig de la Bella Casa J, Mensa J, Torres A. **Seasonality of pathogens causing community-acquired pneumonia.** *RESPIROLOGY.* 22(4):778-785. I.F.: 3.256

20. Menendez, Rosario; Pablo Espana, Pedro; Perez-Trallero, Emilio; Uranga, Ane; Mendez, Raul; Cilloniz, Catia; Maria Marimon, Jose; Cifuentes, Isabel; Mendez, Cristina; Torres, Antoni. **The burden of PCV13 serotypes in hospitalized pneumococcal pneumonia in Spain using a novel urinary antigen detection test. CAPA study.** *VACCINE.* 35(39):5264-5270. I.F.: 3.235

21. Jorba, Ignasi; Jose Menal, Maria; Torres, Marta; Gozal, David; Pinol-Ripoll, Gerard; Colell, Anna; Montserrat, Josep M.; Navajas, Daniel; Farre, Ramon; Almendros, Isaac. **Ageing and chronic intermittent hypoxia mimicking sleep apnea do not modify local brain tissue stiffness in healthy mice.** *JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS.* 71:106-113. I.F.: 3.110

22. Terán-Santos J, Egea Santaolalla C, Montserrat JM, Masa Jiménez F, Librada Escribano MV, Mirabet E, Valdés Rodríguez E. Sleep Apnea and Driving. **Recommendations for Interpreting Spanish Regulations for Drivers.** *ARCHIVOS DE BRONCONEUMOLOGIA.* 53(6):336-341. I.F.: 2.979

23. Huang, David B.; File, Thomas M., Jr.; Torres, Antoni; Shorr, Andrew F.; Wilcox, Mark H.; Hadvary, Paul; Dryden, Matthew; Corey, G. Ralph. **A Phase II Randomized, Double-Blind, Multicenter Study to Evaluate Efficacy and Safety of Intravenous Iclaprim Versus Vancomycin for the Treatment of Nosocomial Pneumonia Suspected or Confirmed to be Due to Gram-Positive Pathogens.** *CLINICAL THERAPEUTICS.* 39(8):1706-1718. I.F.: 2.947

24. Cilloniz, Catia; Ceccato, Adrian; de la Calle, Cristina; Gabarrus, Albert; Garcia-Vidal, Carolina; Almela, Manel; Soriano, Alex; Antonio Martinez, Jose; Marco, Francesc; Vila, Jordi; Torres, Antoni. **Time to blood culture positivity as a predictor of clinical outcomes and severity in adults with bacteremic pneumococcal pneumonia.** *PLOS ONE.* 12(8):e0182436. I.F.: 2.806

25. Ceccato, Adrian; Cilloniz, Catia; Ranzani, Otavio T.; Menendez, Rosario; Agusti, Carles; Gabarrus, Albert; Ferrer, Miquel; Sibila, Oriol; Niederman, Michael S.; Torres, Antoni. **Treatment with macrolides and glucocorticosteroids in severe communityacquired pneumonia: A post-hoc exploratory analysis of a randomized controlled trial.** *PLOS ONE.* 12(6):e0178022. I.F.: 2.806

26. Rosales-Mayor, Edmundo; Polverino, Eva; Raguer, Laura; Alcaraz, Victoria; Gabarrus, Albert; Ranzani, Otavio; Menendez, Rosario; Torres, Antoni. **Comparison of two prognostic scores (BSI and FACED) in a Spanish cohort of adult patients with bronchiectasis and improvement of the FACED predictive capacity for exacerbations.** *PLOS ONE.* 12(4):e0175171. I.F.: 2.806

27. Vilaseca, Antoni; Campillo, Noelia; Torres, Marta; Musquera, Mireia; Gozal, David; Montserrat, Josep M.; Alcaraz, Antonio; Touijer, Karim A.; Farre, Ramon; Almendros, Isaac. **Intermittent hypoxia increases kidney tumor vascularization in a murine model of sleep apnea.** *PLOS ONE.* 12(6):e0179444. I.F.: 2.806

28. Menendez, Rosario; Mendez, Raul; Polverino, Eva; Rosales-Mayor, Edmundo; Amara-Elori, Isabel; Reyes, Soledad; Miguel Sahuquillo-Arce, Jose; Fernandez-Barat, Laia; Alcaraz, Victoria; Torres, Antoni. **Risk factors for multidrug-resistant pathogens in bronchiectasis exacerbations.** *BMC INFECTIOUS DISEASES.* 17(1):659. I.F.: 2.768

29. Martínez-García MÁ, Riveiro-Falkenbach E, Rodríguez-Peralto JL, Nagore E, Martorell-Calatayud A, Campos-Rodríguez F, Farré R, Hernández Blasco L, Bañuls Roca J, Chiner Vives E, Sánchez-de-la-Torre A, Abad Capa J, Montserrat JM, Almendros I, Pérez-Gil A, Cabriada Nuño V, Cano-Pumarega I, Corral Peñafiel J, Diaz Cambriles T, Mediano O, Dalmau Arias J, Gozal D, Spanish Sleep Network. **A prospective multicenter cohort study of cutaneous melanoma: clinical staging and potential associations with HIF-1α and VEGF expressions.** *MELANOMA RESEARCH.* 27(6):558-564. I.F.: 2.615

30. Cisternas A, Aguilar F, Montserrat JM, Àvila M, Torres M, Iranzo A, Berenguer J, Vilaseca I. **Effects of CPAP in patients with obstructive apnoea: is the presence of allergic rhinitis relevant?** *SLEEP AND BREATHING.* 21(4):893-900. I.F.: 2.288

Review / I.F.: 32.006

1. Kollef, Marin H.; Bassetti, Matteo; Francois, Bruno; Burnham, Jason; Dimopoulos, George; Garnacho-Montero, Jose; Lipman, Jeffrey; Luyt, Charles-Edouard; Nicolau, David P.; Postma, Maarten J.; Torres, Antonio; Welte, Tobias; Wunderink, Richard G. **The intensive care medicine research agenda on multidrug-resistant bacteria, antibiotics, and stewardship.** *INTENSIVE CARE MEDICINE.* 43(9):1187-1197. I.F.: 12.015

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3. Liapikou A, Cillóniz C, Torres A. **Investigational drugs in phase I and phase II clinical trials for the treatment of community-acquired pneumonia.** *EXPERT OPINION ON INVESTIGATIONAL DRUGS.* 26(11):1239-1248. I.F.: 4.030

4. Blasi, Francesco; Akova, Murat; Bonanni, Paolo; Dartois, Nathalie; Sauty, Evelyne; Webber, Chris; Torres, Antoni. **Community-acquired pneumonia in adults: Highlighting missed opportunities for vaccination.** *EUROPEAN JOURNAL OF INTERNAL MEDICINE.* 37:13-18. I.F.: 2.960

5. Lugo V, Villanueva JA, Garmendia O, Montserrat JM. **The role of telemedicine in obstructive sleep apnea management.** *EXPERT REVIEW OF RESPIRATORY MEDICINE.* 11(9):699-709. I.F.: 2.432

Letters / I.F.: 43.317

1. Bermejo-Martin J, Almansa R, Martin-Fernandez M, Menendez R, Torres A. **Immunological profiling to assess disease severity and prognosis in community-acquired pneumonia.** *THE LANCET. RESPIRATORY MEDICINE.* 5(12):E35-E36. I.F.: 19.287

2. Torres A, Martín-Loeches I, Menéndez R. **Research in community-acquired pneumonia: the next steps.** *INTENSIVE CARE MEDICINE.* 43(9):1395-1397. I.F.: 12.015

3. Niederman MS, Martin-Loeches I, Torres A. **The research agenda in VAP/HAP: next steps.** *INTENSIVE CARE MEDICINE.* 43(9):1389-1391. I.F.: 12.015

Consortium Publications / I.F.: 8.874

1. Cano-Pumarega, Irene; Barbe, Ferrn; Esteban, Andres; Martinez-Alonso, Montserrat; Egea, Carlos; Durn-Cantolla, Joaquin;Spanish Sleep Network. **Sleep Apnea and Hypertension Are There Sex Differences? The Vitoria Sleep Cohort.** *CHEST.* 152(4):742-750. I.F.: 6.147

2. Rello J, Diaz E, Mañez R, Sole-Violan J, Valles J, Vidaur L, Zaragoza R, Gattarello S, CAPUCI II Consortium. **Improved survival among ICU-hospitalized patients with community-acquired pneumonia by unidentified organisms: a multicenter case-control study.** *EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES.* 33(1):123-130. I.F.: 2.727

GRANTS FOR RESEARCH IN PROGRESS

Montserrat J.M. **Aplicabilidad y coste eficiencia de un modelo de gestión para el síndrome de apneas durante el sueño basado en el trabajo en red y telemedicina.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00416
Duration: 01/01/2015-30/06/2018

Soler N. **Valor diagnóstico de la Pancreatic Stone Protein (PSP/reg) en la agudización infecciosa de la Enfermedad Pulmonar Obstructiva Crónica (EPOC): relevancia del microbioma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/02238
Duration: 01/01/2014-30/06/2017

Soler N. **Dinámica del microbioma pulmonar en la agudización neumónica y no neumónica de la EPOC y uso como potencial diana terapéutica: estudio discriminativo con TAC torácica de baja radiación.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00803
Duration: 01/01/2017-31/12/2019

Torres A. **Combatting Bacterial Resistance in Europe - Molecules Against Gram Negative Infections. (COMBACTE-MAGNET).**
Sponsored by: European Comission, Innovative Medicines Iniciative (IMI_13)
Duration: 01/01/2015-31/12/2021

Torres A. **Eficacia y caracterización de los efectos de los corticosteroides asociados a antibióticos en un modelo animal de neumonía grave por streptococcus pneumoniae.**
Sponsored by: Instituto de Salud Carlos III. PI15/00506
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Soy D, Martín I. **Optimization of meropenem and piperacillin dosing in critically ill patients with septic shock and acute kidney injury requiring continuous renal replacement therapy: a pharmacokinetic and pharmacodynamic study.**
PhD student: Marta Ulldemolins Gómez

Torres A. **Nuevas consideraciones en el pronóstico de la neumonía adquirida en la comunidad.**
PhD student: Rosanel Amaro Rodríguez

Torres A, Ramírez P. **Seguimiento del paciente sometido a ventilación mecánica; detección de complicaciones infecciosas.**
PhD student: Cristina López Ferraz

2.7 Physiopathological mechanisms of respiratory illnesses

LOCATION
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CELLEX building 2A

WEB
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KEYWORDS
1. **Pulmonary hypertension**
2. **COPD**
3. **Systems medicine**
4. **Endothelium**
5. **Stem cells**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	143.23	23	12	6
2016	141.51	28	19	5
2017	86.75	16	13	-

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TEAM Joan Albert Barberà

STRATEGIC OBJECTIVES

Understanding of the molecular mechanisms involved in the development of pulmonary vascular diseases. Identification of biomarkers and therapeutic targets for pulmonary hypertension. Characterization of extrapulmonary disorders in COPD. Determination of intra-and extrapulmonary manifestations of severe obesity. Role of stem cells in lung injury and repair mechanisms. Personalized medical care for chronic respiratory diseases from a systems medicine strategy.

MAIN LINES OF RESEARCH

- Clinical research in pulmonary hypertension: biomarkers and new therapies
- Endothelial dysfunction and vascular remodeling
- Experimental models of COPD and pulmonary hypertension
- Stem and progenitor cells
- Interaction between airway, lung and systemic inflammation in COPD and severe obesity
- Pathophysiology of pulmonary gas exchange
- Systems medicine

50/50 PROGRAM

TRANSLATIONAL RESEARCH IN PULMONARY VASCULAR DISEASES: CELL PROLIFERATION AND APOPTOTIC MECHANISMS IN PULMONARY ARTERIAL HYPERTENSION

GROUP LEADER
Isabel Blanco (HCB-IDIBAPS)

Pulmonary arterial hypertension (PAH) is a disease of small pulmonary arteries, characterized by gradual obliteration of the arterial lumen due to the enlargement of the vessel wall. It results in a progressive increase of pulmonary vascular resistance (PVR) and, finally, right ventricular failure and death. While vasoconstriction contributes, especially in earlier stages, the obstructive vascular remodelling is the major cause of the elevated PVR and ultimately the right heart failure. There is a need to identify new signaling pathways in the pathogenesis of PAH. We propose going from the bench to the bed side studying potential biomarkers of the disease activity and progression; as well as potential new drugs to reverse the proliferative remodelling phenotype in PAH.

PUBLICATIONS

Originals / I.F.: 86.75

1. Coghlan JG, Galiè N, Barberà JA, Frost AE, Ghofrani HA, Hoeper MM, Kuwana M, McLaughlin VV, Peacock AJ, Simonneau G, Vachiéry JL, Blair C, Gillies H, Miller KL, Harris JHN, Langley J, Rubin LJ, AMBITION investigators. I**nitial combination therapy with ambrisentan and tadalafil in connective tissue disease-associated pulmonary arterial hypertension (CTD-PAH): Subgroup analysis from the AMBITION trial.** *ANNALS OF THE RHEUMATIC DISEASES.* 76(7):1219-1227. I.F.: 12.811

2. Noell, Guillaume; Cosio, Borja G.; Faner, Rosa; Monso, Eduard; Peces-Barba, German; de Diego, Alfredo; Esteban, Cristobal; Gea, Joaquim; Rodriguez-Roisin, Robert; Garcia-Nunez, Marian; Pozo-Rodriguez, Francisco; Kalko, Susana G.; Agusti, Alvar. **Multi-level differential network analysis of COPD exacerbations.** *EUROPEAN RESPIRATORY JOURNAL.* 50(3):1700075. I.F.: 10.569

3. Scioscia G, Blanco I, Arismendi E, Burgos F, Gistau C, Foschino Barbaro MP, Celli B, O'Donnell DE, Agustí A. **Different dyspnoea perception in COPD patients with frequent and infrequent exacerbations.** *THORAX.* 72(2):117-121. I.F.: 8.272

4. Arbillaga-Etxarri A, Gimeno-Santos E, Barberan-Garcia A, Benet M, Borrell E, Dadvand P, Foraster M, Marín A, Monteagudo M, Rodriguez-Roisin R, Vall-Casas P, Vilaró J, Garcia-Aymerich J, Urban Training Study Group. **Socio-environmental correlates of physical activity in patients with chronic obstructive pulmonary disease (COPD).** *THORAX.* 72(9):796-802. I.F.: 8.272

5. Marín de Mas I, Fanchon E, Papp B, Kalko S, Roca J, Cascante M. **Molecular mechanisms underlying COPD-muscle dysfunction unveiled through a systems medicine approach.** *BIOINFORMATICS.* 33(1):95-103. I.F.: 7.307

6. García-Lucio J, Tura-Ceide O, Del Pozo R, Blanco I, Pizarro S, Ferrer E, Díez M, Coll-Bonfill N, Piccari L, Peinado VI, Barberà JA. **Effect of targeted therapy on circulating progenitor cells in precapillary pulmonary hypertension**. *INT J CARDIOL.* 228:238-243. I.F.: 6.189

7. Martinez F., Rabe K., Ferguson G., Fabbri L., Rennard S., Feldman G., Sethi S., Spangenthal S., Gottschlich G., Rodriguez-Roisin R., Arora S., Siler T., Siddiqui S., Darken P., Fischer T., Maes A., Golden M., Orevillo C., Reisner C. **Efficacy and Safety of Glycopyrrolate/ Formoterol Metered Dose Inhaler Formulated Using Co-Suspension Delivery Technology in Patients With COPD.** *CHEST.* 151(2):340-357. I.F.: 6.147

8. Lopez-Ruiz, Elena; Venkateswaran, Seshasailam; Peran, Macarena; Jimenez, Gema; Pernagallo, Salvatore; Diaz-Mochon, Juan J.; Tura-Ceide, Olga; Arrebola, Francisco; Melchor, Juan; Soto, Juan; Rus, Guillermo; Real, Pedro J.; Diaz-Ricart, Maria; Conde-Gonzalez, Antonio; Bradley, Mark; Marchal, Juan A. **Poly (ethylmethacrylate-co-diethylaminoethyl acrylate) coating improves endothelial repopulation, bio-mechanical and anti-thrombogenic properties of decellularized carotid arteries for blood vessel replacement.** *SCIENTIFIC REPORTS.* 7(1):407. I.F.: 4.259

9. Tura-Ceide, Olga; Lobo, Borja; Paul, Tanja; Puig-Pey, Raquel; Coll-Bonfill, Nuria; Garcia-Lucio, Jessica; Smolders, Valerie; Blanco, Isabel; Barbera, Joan A.; Peinado, Victor I. **Cigarette smoke challenges bone marrow mesenchymal stem cell capacities in guinea pig.** *RESPIRATORY RESEARCH.* 18(1):50. I.F.: 3.841

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11. Agustí A., Compte A., Faner R., Garcia-Aymerich J., Noell G., Cosio B., Rodriguez-Roisin R., Celli B., Anto J. **The EASI model: A first integrative computational approximation to the natural history of COPD.** *PLOS ONE.* 12(10):e0185502. I.F.: 2.806

12. López-Meseguer M, Quezada CA, Ramon MA, Lázaro M, Dos L, Lara A, López R, Blanco I, Escribano P, Roman A, REHAP Investigators. **Lung and heart-lung transplantation in pulmonary arterial hypertension.** *PLOS ONE.* 12(11):e0187811. I.F.: 2.806

13. Cano I, Dueñas-Espín I, Hernandez C, de Batlle J, Benavent J, Contel JC, Baltaxe E, Escarrabill J, Fernández JM, Garcia-Aymerich J, Mas MÀ, Miralles F, Moharra M, Piera J, Salas T, Santaeugènia S, Soler N, Torres G, Vargiu E, Vela E, Roca J. **Protocol for regional implementation of community-based collaborative management of complex chronic patients.** *NPJ PRIM CARE RESP M.* 27(1):44. I.F.: 2.793

14. Alberghina N, Sánchez-Montes C, Tuñón C, Maurel J, Araujo IK, Ferrer J, Sendino O, Córdova H, Vaquero EC, González-Suárez B, Martínez-Palli G, Ginès À, Fernández-Esparrach G. **Endoscopic ultrasonography can avoid unnecessary laparotomies in patients with pancreatic adenocarcinoma and undetected peritoneal carcinomatosis.** *PANCREATOLOGY.* 17(5):858-864. I.F.: 2.580

15. McLaughlin, Vallerie V.; Jansa, Pavel; Nielsen-Kudsk, Jens E.; Halank, Michael; Simonneau, Gerald; Gruenig, Ekkehard; Ulrich, Silvia; Rosenkranz, Stephan; Gomez Sanchez, Miguel A.; Pulido, Tomas; Pepke-Zaba, Joanna; Albert Barbera, Joan; Hoeper, Marius M.; Vachiery, Jean-Luc; Lang, Irene; Carvalho, Francine; Meier, Christian; Mueller, Katharina; Nikkho, Sylvia; D'Armini, Andrea M. **Riociguat in patients with chronic thromboembolic pulmonary hypertension: results from an early access study**. *BMC PULMONARY MEDICINE.* 17(1):216. I.F.: 2.435

16. Rodríguez DA, Kortianou EA, Alison JA, Casas A, Giavedoni S, Barberan-Garcia A, Arbillaga A, Vilaró J, Gimeno-Santos E, Gimeno-Santos E, Vogiatzis I, Vogiatzis I, Rabinovich R, Roca J. **Heart Rate Recovery After 6-min Walking Test Predicts Acute Exacerbation in COPD.** *LUNG.* 195(4):463-467. I.F.: 1.915

Review / I.F.: 32.179

1. Rodriguez-Roisin R, Han MK, Vestbo J, Wedzicha JA, Woodruff PG, Martinez FJ. **Chronic Respiratory Symptoms with Normal Spirometry. A Reliable Clinical Entity?** *AM J RESPIR CRIT CARE MED.* 195(1):17-22. I.F.: 13.204

2. Kovacs G, Herve P, Barbera JA, Chaouat A, Chemla D, Condliffe R, Garcia G, Grünig E, Howard L, Humbert M, Lau E, Laveneziana P, Lewis GD, Naeije R, Peacock A, Rosenkranz S, Saggar R, Ulrich S, Vizza D, Vonk Noordegraaf A, Olschewski H. **An official European Respiratory Society statement: pulmonary haemodynamics during exercise**. *EUROPEAN RESPIRATORY JOURNAL.* 50(5). I.F.: 10.569

3. Gomez-Cabrero, David; Marabita, Francesco; Tarazona, Sonia; Cano, Isaac; Roca, Josep; Conesa, Ana; Sabatier, Philippe; Tegner, Jesper. **Guidelines for Developing Successful Short Advanced Courses in Systems Medicine and Systems Biology.** *CELL SYSTEMS.* 5(3):168-175. I.F.: 8.406

Editorial / I.F.: 10.569

1. Rodriguez-Roisin R, Rabe KF, Vestbo J, Vogelmeier C, Agustí A, all previous and current members of the Science Committee and the Board of Directors of GOLD (goldcopd.org/committees/). **Global Initiative for Chronic Obstructive Lung Disease (GOLD) 20th Anniversary: a brief history of time.** *EUROPEAN RESPIRATORY JOURNAL.* 50(1):1700671. I.F.: 10.569

Clinical Guidelines / I.F.: 51.146

1. Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agustí A. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report. GOLD Executive Summary.** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE.* 195(5):557-582. I.F.: 13.204

2. Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agusti A. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.** *EUR RESPIR J.* 49(3):1700214. I.F.: 10.569

3. Graham BL, Brusasco V, Burgos F, Cooper BG, Jensen R, Kendrick A, MacIntyre NR, Thompson BR, Wanger J. **Executive Summary: 2017 ERS/ATS standards for single-breath carbon monoxide uptake in the lung.** *EUR RESPIR J.* 49(1):16E0016. I.F.: 10.569

4. Graham BL, Brusasco V, Burgos F, Cooper BG, Jensen R, Kendrick A, MacIntyre NR, Thompson BR, Wanger J. **2017 ERS/ATS standards for single-breath carbon monoxide uptake in the lung.** *EUR RESPIR J.* 49(1):1600016. I.F.: 10.569

5. Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agusti A. **Global Strategy for the Diagnosis, Management and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.** *RESPIROLOGY.* 22(3):575-601. I.F.: 3.256

6. Vogelmeier CF, Criner GJ, Martínez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodríguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agustí A. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.** *ARCHIVOS DE BRONCONEUMOLOGIA.* 53(3):128-149. I.F.: 2.979

Consortium Publications / I.F.: 7.05

1. Sakr, Yasser; Birri, Paolo Nahuel Rubatto; Kotfis, Katarzyna; Nanchal, Rahul; Shah, Bhagyesh; Kluge, Stefan; Schroeder, Mary E.; Marshall, John C.; Vincent, Jean-Louis; Intensive Care Over Nations. **Higher Fluid Balance Increases the Risk of Death From Sepsis: Results From a Large International Audit.** *CRITICAL CARE MEDICINE.* 45(3):386-394. I.F.: 7.050

GRANTS FOR RESEARCH IN PROGRESS

Barberà JA. **Plataformas de apoyo a la Investigación en Ciencias y Tecnologías de la Salud. Red de Biobanco.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PT13/0010/0011
Duration: 01/01/2014-30/06/2018

Barberà JA. **Gestión en red de pacientes con Enfermedades Raras: la Hipertensión Pulmonar como caso de uso (GERAR).**
Sponsored by: MINECO (RETOS), Ref RTC-2015-4137-1
Duration: 01/09/2015-31/08/2018

Barberà JA. **Proliferación celular en la hipertensión pulmonar: detección y mecanismos de regulación epigenética.**
Sponsored by: Instituto de Salud Carlos III. PI15/00582
Duration: 01/01/2016-31/12/2018

Blanco I. **Estudio del papel de la survivina en la patogénesis de la hipertensión arterial pulmonar y su empleo como potencial diana terapéutica.**
Sponsored by Instituto de Salud Carlos III (ISCIII). PI14/00782
Duration: 01/01/2015-31/12/2017

Martinez G. **Efectividad de una intervención de entrenamiento físico personalizado (prehabilitación) en pacientes de alto riesgo quirúrgico sobre la incidencia de complicaciones postoperatorias: ensayo controlado aleatorizado.**
Sponsored by Instituto de Salud Carlos III (ISCIII). PI13/00425
Duration: 01/01/2014-31/12/2016

Roca J. **Sustainable intEgrated care modeLs for multi-morbidity: delivery, FInancing and performance.**
Sponsored by: European Commission H2020_PHC-2014
Duration: 01/09/2015-30/08/2018

Roca J. **Personalised Connected Care for Complex Chronic Patients.**
Sponsored by: European Commission H2020_PHC-2015
Duration: 01/04/2016-30/09/2019

Roca J. **KONFIDO - Secure and Trusted Paradigm for Interoperable eHealth Services.**
Sponsored by: European Commission H2020_DS-2016
Duration: 01/11/2016-31/10/2019

Roca J. **Atenció personalitzada del malalt crònic en un marc de salut digital.**
Sponsored by: Fundació Eurecat. COMRDI15-1-0016-08
Duration: 15/10/2016-15/10/2019

Roca J. **Plataforma de innovación en telemedicina y e-salud: TIC para los retos de I+i en servicios de salud. PITES-TIiSS.**
Sponsored by: Instituto de Salud Carlos III. PI15/00576
Duration: 01/01/2016-31/12/2018

Roca J. **Advancing Care Coordination and Telehealth deployment at Scale.**
Sponsored by: European Commission Health Program-2015.
Duration: 04/03/2016-03/03/2019

DOCTORAL THESES

Barberà JA, Peinado V. **Remodelat vascular a les malalties pulmonars: perfil d'expressió gènica i biomarcadors.**
PhD student: Jéssica García Lucio

Roca J, Blanco I. **Deployment of novel integrated care services to promote healthy lifestyle: physical activity as a use case.**
PhD student: Anael Barberán Garcia

2.8 Clinical and experimental respiratory immunoallergy

LOCATION
CELLEX building 2B

WEB
www.idibaps.org/research/605/clinical-and-experimental-respiratory-immunoallergy-irce

KEYWORDS
1. **Chronic rhinosinusitis and nasal polyps**
2. **Aspirin sensitive asthma**
3. **Drug & food allergy**
4. **Urticaria and mast cells**
5. **Endoscopic & skull base surgery**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	82.40	24	13	6
2016	151.13	26	14	5
2017	152.51	35	22	9

TEAM INVOLVED IN
AGAUR_SGR14
AGAUR_SGR17
CIBER_CIBERES
RETIC_RIRAAF
RETIC_ARADYAL

AWARDS
Best poster Asthma Section
Institution: European Academy of Allergoly and Clinical Immunology
Awardee/s: De la cruz CA, Guillen-Vera D, Revilla Y, Alonso S, Morales R, Pérez M, Diaz R, Melero C, Fernández C, Bobolea I

Best communication in Asthma
Institution: Sociedad Española de Patología Respiratoria – SEPAR
Awardee/s: Bobolea I

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TEAM. Joquim Mullol

STRATEGIC OBJECTIVES

1. To investigate mechanisms regulating inflammatory response and remodelling in asthma, rhinitis, rhinosinusitis/polyposis.
2. To investigate mechanisms underlying food and drug allergies.
3. To investigate mechanisms involved in anaphylaxis and mast cell physiology.
4. To investigate mechanisms of smell loss: sinonasal inflammation, Traumatic Brain Injury, Parkinson Disease, iatrogenic, idiopathic.

MAIN LINES OF RESEARCH

1. **Inflammation of the Upper and Lower respiratory mucosa.**
   Mechanisms involved in sinonasal and bronchial development, inflammation, and remodelling.

2. **Sense of smell in health and disease.**
   Mechanisms involved in olfactory dysfunctions (rhinitis, rhinosinusitis, septal perforation) and neurogenesis of sinonasal diseases, Traumatic Brain Injury, and neurodegenerative (Parkinson) diseases.

3. **Food and drug allergy.**
   Genetic, immunological, and biochemical mechanisms of respiratory, food, and drug allergy.

4. **Glucocorticoid resistance.**
   Mechanisms and biomarkers involved in glucocorticoid resistance of respiratory and non-respiratory diseases.

5. **Aspirin and Non-Steroidal Antiinflammatory Drug (NSAID) intolerance.**
   Mechanisms of allergy and cofactors, regulation of cyclooxygenase, leukotriene and prostaglandins (PGE2) and their receptors.

6. **Pathophysiology of eosinophils, mast cells, and basophils.**
   Anaphylactic reactions (mastocytosis, adapter molecules in the signaling of IgE). Antiinflammatory drugs in eosinophils and epithelial cells (corticosteroids,MP-AzeFlu), and mast cell and basophils (omalizumab).

4. **Skull Base tumours.**
   Impact of skull base tumours in quality of life and olfaction. Different surgical approaches.

RESEARCH GROUP

SINONASAL INFLAMMATORY AND OLFACTORY RESEARCH GROUP (INGENIO)

GROUP LEADER
Joaquim Mullol (IDIBAPS)

1. Upper airway diseases (rhinitis, rhinosinusitis, nasal polyps): A) regulation of mucins and MUC genes; and B) impact on quality of life.

2. Olfactory disorders and their mechanisms of action: A) validation of new adult (BOT-8) and children (pBOT-6) olfactometries; and B) mechanisms of smell loss and its recovery in sinonasal diseases, traumatic brain injury, and neurodegenerative diseases.

3. Human in vitro model of eosinophilic inflammation to test / compare medication antiinflammatory effects: corticosteroids, antihistamines, antileukotrienes, MP-AzeFlu.

4. Stem/progenitor respiratory epithelial / neuroepithelial cell differentiation and regenerative medicine in ALI culture model.

PUBLICATIONS

Originals / I.F.: 152.506

1. Faber MA; Van Gasse AL; Decuyper II; Uyttebroek A; Sabato V; Hagendorens MM; Bridts CH; De Clerck LS; Fernandez-Rivas M; Pascal M; Díaz-Perales A; Ebo DG. **IgE-reactivity profiles to nonspecific lipid transfer proteins in a northwestern European country.** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY.* 139(2):679-682.e5. I.F.: 13.081

2. Munoz-Cano R, Torrego A, Bartra J, Sanchez-Lopez J, Palomino R, Picado C, Valero A. **Follow-up of patients with uncontrolled asthma: clinical features of asthma patients according to the level of control achieved (the COAS study).** *EUR RESPIR J.* 49(3):1501885. I.F.: 10.569

3. Scioscia G, Blanco I, Arismendi E, Burgos F, Gistau C, Foschino Barbaro MP, Celli B, O'Donnell DE, Agustí A. **Different dyspnoea perception in COPD patients with frequent and infrequent exacerbations.** *THORAX.* 72(2):117-121. I.F.: 8.272

4. Bousquet J., Bewick M., Arnavielhe S., Mathieu-Dupas E., Murray R., Bedbrook A., Caimmi D., Vandenplas O., Hellings P., Bachert C., ..., Devillier P. **Work productivity in rhinitis using cell phones: The MASK pilot study.** *ALLERGY.* 72(10):1475-1484. I.F.: 7.361

5. Valero A, Quirce S, Dávila I, Delgado J, Domínguez-Ortega J. **Allergic respiratory disease: Different allergens, different symptoms.** *ALLERGY.* 72(9):1306-1316. I.F.: 7.361

6. Colás C, Brosa M, Antón E, Montoro J, Navarro A, Dordal MT, Dávila I, Fernández-Parra B, Ibáñez MDP, Lluch-Bernal M, Matheu V, Rondón C, Sánchez MC, Valero A, Rhinoconjunctivitis Committee of the Spanish Society of Allergy and Clinical Immunology. **Estimate of the total costs of allergic rhinitis in specialized care based on real-world data: the FERIN Study.** *ALLERGY.* 72(6):959-966. I.F.: 7.361

7. Serrano-Pariente J, Plaza V, Soriano JB, Mayos M, López-Viña A, Picado C, Vigil L, CPASMA Trial Group. **Asthma outcomes improve with continuous positive airway pressure for obstructive sleep apnoea.** *ALLERGY.* 72(2017):802-812. I.F.: 7.361

8. Plaschke C, Bertino G, McCaul J, Grau J, de Bree R, Sersa G, Occhini A, Groselj A, Langdon C, Heuveling D, Cemazar M, Strojan P, Leemans C, Benazzo M, De Terlizzi F, Wessel I, Gehl J. E**uropean Research on Electrochemotherapy in Head and Neck Cancer (EURECA) project: Results from the treatment of mucosal cancers.** *EUROPEAN JOURNAL OF CANCER.* 87:172-181. I.F.: 6.029

9. Caimmi D, Baiz N, Tanno LK, Demoly P, Arnavielhe S, Murray R, Bedbrook A, Bergmann KC, De Vries G, Fokkens WJ, Fonseca J, Haahtela T, Keil T, Kuna P, Mullol J, Papadopoulos N, Passalacqua G, Samolinski B, Tomazic PV, Valiulis A, van Eerd M, Wickman M, Annesi-Maesano I, Bousquet J, MASK Study Group. **Validation of the MASK-rhinitis visual analogue scale on smartphone screens to assess allergic rhinitis control.** *CLINICAL AND EXPERIMENTAL ALLERGY.* 47(12):1526-1533. I.F.: 5.264

10. Martínez-Barriocanal Á, Arcas-García A, Magallon-Lorenz M, Ejarque-Ortíz A, Negro-Demontel ML, Comas-Casellas E, Schwartz S, Malhotra S, Montalban X, Peluffo H, Martín M, Comabella M, Sayós J. **Effect of Specific Mutations in Cd300 Complexes Formation; Potential Implication of Cd300f in Multiple Sclerosis.** *SCIENTIFIC REPORTS.* 7(1):13544. I.F.: 4.259

11. Serrano-Candelas E, Martínez-Aranguren R, Vega O, Gastaminza G, Bartra J, Audicana MT, Núñez-Córdoba JM, Algorta J, Valero A, Martin M, Ferrer M. **Omalizumab efficacy in cases of chronic spontaneous urticaria is not explained by the inhibition of sera activity in effector cells.** *SCIENTIFIC REPORTS.* 7(1):8985. I.F.: 4.259

12. Campillo, Noelia; Torres, Marta; Vilaseca, Antoni; Naomi Nonaka, Paula; Gozal, David; Roca-Ferrer, Jordi; Picado, Cesar; Maria Montserrat, Josep; Farre, Ramon; Navajas, Daniel; Almendros, Isaac. **Role of cyclooxygenase-2 on intermittent hypoxia-induced lung tumor malignancy in a mouse model of sleep apnea.** *SCIENTIFIC REPORTS.* 7:44693. I.F.: 4.259

13. Di Somma A, Cavallo L, De Notaris M, Solari D, Topczewski T, Bernal-Sprekelsen M, Enseñat J, Prats-Galino A, Cappabianca P. **Endoscopic endonasal medial-to-lateral and transorbital lateral-to-medial optic nerve decompression: An anatomical study with surgical implications.** *JOURNAL OF NEUROSURGERY.* 127(1):199-208. I.F.: 4.059

14. Ruggeri A, Enseñat J, Prats-Galino A, Lopez-Rueda A, Berenguer J, Cappelletti M, De Notaris M, D'Avella E. **Endoscopic endonasal control of the paraclival internal carotid artery by Fogarty balloon catheter inflation: An anatomical study.** *JOURNAL OF NEUROSURGERY.* 126(3):872-879. I.F.: 4.059

15. Dallan, Iacopo; Di Somma, Alberto; Prats-Galino, Alberto; Solari, Domenico; Alobid, Isam; Turri-Zanoni, Mario; Fiacchini, Giacomo; Castelnuovo, Paolo; Catapano, Giuseppe; de Notaris, Matteo. **Endoscopic transorbital route to the cavernous sinus through the meningo-orbital band: a descriptive anatomical study.** *JOURNAL OF NEUROSURGERY.* 127(3):622-629. I.F.: 4.059

16. Gomà A, de Lluis R, Roca-Ferrer J, Lafuente J, Picado C. **Respiratory, ocular and skin health in recreational and competitive swimmers: Beneficial effect of a new method to reduce chlorine oxidant derivatives.** *ENVIRON RES.* 152:315-321. I.F.: 3.835

17. Valls-Mateus M, Marino-Sanchez F, Ruiz-Echevarría K, Cardenas-Escalante P, Jiménez-Feijoo R, Blasco-Lozano J, Giner-Muñoz MT, Haag O, Alobid I, Plaza Martin AM, Mullol J. **Nasal obstructive disorders impair health-related quality of life in adolescents with persistent allergic rhinitis: a real-life study**. *PEDIATRIC ALLERGY AND IMMUNOLOGY.* 28(5):438-445. I.F.: 3.775

18. Mariño-Sánchez FS, Valls-Mateus M, Ruiz-Echevarría K, Alobid I, Cardenas-Escalante P, Jiménez-Feijoo R, Lozano-Blasco J, Giner-Muñoz MT, Rodríguez-Jorge J, Haag O, Plaza-Martin AM, Mullol J. **Nasal obstructive disorders induce medical treatment failure in paediatric persistent allergic rhinitis (The NODPAR Study).** *PEDIATR ALLERGY IMMUNOL.* 28(2):176-184. I.F.: 3.775

19. Vilaseca I, Valls-Mateus M, Nogués A, Lehrer E, López-Chacón M, Avilés-Jurado FX, Blanch JL, Bernal-Sprekelsen M. **Usefulness of office examination with narrow band imaging for the diagnosis of head and neck squamous cell carcinoma and follow-up of premalignant lesions.** *HEAD AND NECK.* 39(9):1854-1863. I.F.: 3.376

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Alobid I. **El impacto de la inflamación sobre el sentido del olfato en pacientes con poliposis nasal: el rol de los eosinófilos sobre la neurogenesis del neuroepitelio olfatorio.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00262
Duration: 01/01/2016-31/12/2018

Bartra J. **Red de Investigación de Reacciones Adversas a Alérgenos y Fármacos.**
Sponsored by: Instituto de Salud Carlos III. RD12/0013/0012
Duration:01/01/2013-30/03/2017

Bartra J. **Asma, reacciones adversas y alérgicas (ARADYAL).**
Sponsored by: Instituto de Salud Carlos III. RD16/0006/0007
Duration: 01/01/2017-31/12/2021

Bobolea I. **Identificación de biomarcadores no invasivos asociados a los distintos fenotipos y endotipos de asma descritos. Utilidad clínica y valor pronóstico de la periostina, en vistas al tratamiento personalizado.**
Sponsored by: Instituto de Salud Carlos III. PI14/00711
Duration: 06/06/2017-31/12/2019

Mullol J. **Función reguladora de los microRNA sobre los genes diana involucrados en la diferenciación epitelial de la mucosa nasosinusal en la poliposis nasal.**
Sponsored by: Instituto de Salud Carlos III. PI15/00046
Duration: 01/01/2016-31/12/2018

Muñoz-Cano R. **Estudios de los mecanismos patogénicos en la anafilaxia inducida por alimentos y exacerbada oir antiinflamatorios no esteroideos (AINEs).**
Sponsored by: Instituto de Salud Carlos III. PI16/00696
Duration: 01/01/2017-31/12/2019

Pascal M, Bartra J (Co-IPs). **Síndrome LTP: identificación y caracterización clínica de los epítopos inmunodominantes B y T y su presentación antigénica HLA.**
Sponsored by: Instituto de Salud Carlos III. PI16/00344
Duration: 01/01/2017-31/12/2019

Pujols L. **Identificación de biomarcadores asociados a la resistencia a los corticoides en la rinosinusitis crónica con pólipos nasales.**
Sponsored by: Instituto de Salud Carlos III. PI13/01228
Duration: 01/01/2014-31/12/2017

Pujols L. **Caracterización funcional de biomarcadores asociados a la insensibilidad al tratamiento con corticoides intranasales en la rinosinusitis crónica con pólipos nasales.**
Sponsored by: Instituto de Salud Carlos III. PI16/00935
Duration: 01/01/2017-31/12/2019

DOCTORAL THESES

Alobid I, Enseñat J. **Hallazgos clínicos y radiológicos tras la cirugía endoscópica de la base de cráneo.**
PhD student: Elena Rioja Peñaranda

2.9 Inflammation and repair in respiratory illnesses

LOCATION
CELLEX building 2A

KEYWORDS
1. **COPD**
2. **Emphysema**
3. **Inflammation**
4. **Networks**
5. **Systems biology**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	165.96	20	12	5
2016	111.89	18	11	4
2017	93.59	15	12	2

TEAM INVOLVED IN
CIBERES

AWARDS
Stars Among Us: Brilliant Science of Alvar Agustí
Institution: ATS NEWS
Awardee/s: Dr. Alvar Agustí Garcia-Navarro

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COLLABORATORS
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Laureano Molins (HCB)

STRATEGIC OBJECTIVES

The objective of the group is to investigate the biological processed underling the clinical heterogeneity and complexity of chronic obstructive pulmonary disease (COPD) and lung cancer. To investigate the clinical functional correlation and the diagnostic, prognostic and therapeutic value the group uses systems network methods.

MAIN LINES OF RESEARCH

1. Mechanism of abnormal repair in COPD related to the inflammation present in COPD patients.
2. Mechanisms of oncogenesis in COPD.
3. Application systems biology to COPD to understand its natural history.

PUBLICATIONS

Originals / I.F.: 93.589

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2. Noell, Guillaume; Cosio, Borja G.; Faner, Rosa; Monso, Eduard; Peces-Barba, German; de Diego, Alfredo; Esteban, Cristobal; Gea,

TEAM Alvar Agustí

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7. Huleihel, Luai; Sellares, Jacobo; Cardenes, Nayra; Alvarez, Diana; Faner, Rosa; Sakamoto, Koji; Yu, Guoying; Kapetanaki, Maria G.; Kaminski, Naftali; Rojas, Mauricio. **Modified mesenchymal stem cells using miRNA transduction alter lung injury in a bleomycin model.** *AMERICAN JOURNAL OF PHYSIOLOGY - LUNG CELLULAR AND MOLECULAR PHYSIOLOGY.* 313(1):L92-L103. I.F.: 4.281

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12. Celli B., Blasi F., Gaga M., Singh D., Vogelmeier C., Pegoraro V., Caputo N., Agusti A. **Perception of symptoms and quality of life - comparison of patients' and physicians' views in the COPD MIRROR study.** *INTERNATIONAL JOURNAL OF COPD.* 12:2189-2196. I.F.: 3.157

13. Agustí A., Fernández-Villar A., Capelastegui A., García-Losa M., Velasco B., Sánchez G. **Validity Study of Catalan, Galician and Basque Language Versions of the COPD Assessment Test and Equivalence With the Spanish Version.** *ARCHIVOS DE BRONCONEUMOLOGIA.* 53(6):311-317. I.F.: 2.979

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15. Leeming D., Byrjalsen I., Sand J., Bihlet A., Lange P., Thal-Singer R., Miller B., Karsdal M., Vestbo J., Ivanov Y., Kostov K., Bourbeau J., Fitzgerald M., Hernández P., Killian K., Levy R., Maltais F., O'Donnell D., Krepelka J., Wouters E., Quinn D., Bakke P., Kosnik M., Agusti A., ……, Krepelka J. **Biomarkers of collagen turnover are related to annual change in FEV1 in patients with chronic obstructive pulmonary disease within the ECLIPSE study.** *BMC PULMONARY MEDICINE.* 17:164. I.F.: 2.435

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1. Agusti, Alvar; Celli, Bartolome; Faner, Rosa. **What does endotyping mean for treatment in chronic obstructive pulmonary disease?** *LANCET.* 390(10098):980-987. I.F.: 47.831

2. Faner R, Sibila O, Agustí A, Bernasconi E, Chalmers JD, Huffnagle GB, Manichanh C, Molyneaux PL, Paredes R, Pérez Brocal V, Ponomarenko J, Sethi S, Dorca J, Monsó E. **The microbiome in respiratory medicine: current challenges and future perspectives.** *EUROPEAN RESPIRATORY JOURNAL.* 49(4):1602086. I.F.: 10.569

3. Budinger GRS, Kohanski RA, Gan W, Kobor MS, Amaral LA, Armanios M, Kelsey KT, Pardo A, Tuder R, Macian F, Chandel N, Vaughan D,

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Letters / I.F.: 40.425

1. Agustí A, Dekhuijzen PR. **Maximal bronchodilation: a therapeutic target in COPD?** *THE LANCET. RESPIRATORY MEDICINE.* 5(7):540-542. I.F.: 19.287

2. Kerkhof M, Sonnappa S, Postma DS, Brusselle G, Agustí A, Anzueto A, Jones R, Papi A, Pavord I, Pizzichini E, Popov T, Roche N, Ryan D, Thomas M, Vogelmeier C, Chisholm A, Freeman D, Bafadhel M, Hillyer EV, Price DB. **Blood eosinophil count and exacerbation risk in patients with COPD.** *EUROPEAN RESPIRATORY JOURNAL.* 50(1):1700761. I.F.: 10.569

3. Agustí A, Bafadhel M, Beasley R, Bel EH, Faner R, Gibson PG, Louis R, McDonald VM, Sterk PJ, Thomas M, Vogelmeier C, Pavord ID, on behalf of all participants in the seminar. **Precision medicine in airway diseases: moving to clinical practice.** *EUROPEAN RESPIRATORY JOURNAL.* 50(4):1701655. I.F.: 10.569

Editorial / I.F.: 31.707

1. Faner R., Agustí A. **COPD: Algorithms and clinical management.** *EUROPEAN RESPIRATORY JOURNAL.* 50(5):1701733. I.F.: 10.569

2. Agustí A. **Predicting the future from the past.** *EUR RESPIR J.* 49(1):1601854 . I.F.: 10.569

3. Rodriguez-Roisin R, Rabe KF, Vestbo J, Vogelmeier C, Agustí A, all previous and current members of the Science Committee and the Board of Directors of GOLD (goldcopd.org/committees/). **Global Initiative for Chronic Obstructive Lung Disease (GOLD) 20th Anniversary: a brief history of time.** *EUROPEAN RESPIRATORY JOURNAL.* 50(1):1700671 I.F.: 10.569

Clinical Guidelines / I.F.: 30.008

1. Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agustí A. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report. GOLD Executive Summary.** *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE.* 195(5):557-582. I.F.: 13.204

2. Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agusti A. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.** *EUR RESPIR J.* 49(3):1700214. I.F.: 10.569

3. Vogelmeier CF, Criner GJ, Martinez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodriguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agusti A. **Global Strategy for the Diagnosis, Management and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.** *RESPIROLOGY.* 22(3):575-601. I.F.: 3.256

4. Vogelmeier CF, Criner GJ, Martínez FJ, Anzueto A, Barnes PJ, Bourbeau J, Celli BR, Chen R, Decramer M, Fabbri LM, Frith P, Halpin DM, López Varela MV, Nishimura M, Roche N, Rodríguez-Roisin R, Sin DD, Singh D, Stockley R, Vestbo J, Wedzicha JA, Agustí A. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary.** *ARCHIVOS DE BRONCONEUMOLOGIA.* 53(3):128-149. I.F.: 2.979

GRANTS FOR RESEARCH IN PROGRESS

Agustí A. **Análisis multinivel en red de las similitudes y diferencias moleculares entre enfisema y cáncer de pulmón en pacientes con enfermedad pulmonar obstructiva crónica: papel de la respuesta inmune y de las células madre mesenquimales pulmonares.**
Sponsored by: Instituto de Salud Carlos III.
PI15/00799
Duration: 01/01/2016-31/12/2018

Sellares J. **Asociación de la deficiencia de la vía de la MBL (Mannose-binging lectin) y los serotipos de neumococo en la enfermedad invasiva neumocócica.**
Sponsored by: Instituto de Salud Carlos III.
PI13/01227
Duration: 01/01/2014-30/06/2017

DOCTORAL THESES

García-Navarro A, Faner R. **Characterization of the pulmonary and systemic immune response in relation with lung stem cells in patients with COPD.**
PhD student: Tamara Cruz Santa Cruz

2.10 Genetics and urologic tumors

LOCATION
CELLEX building 2B

KEYWORDS
1. **Bladder cancer**
2. **Prostate cancer**
3. **Upper tract urothelial carcinoma**
4. **Kidney cancer**
5. **Biomarkers for diagnosis, prognosis and treatment response**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	33.55	12	5	1
2016	28.18	10	4	2
2017	64.02	12	6	2

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AGAUR_SGR14
AGAUR_SGR17

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Caroline Sieverink (Radboud University Nijmegen Medical Center, The Netherlands)

STRATEGIC OBJECTIVES

The group is focused on the translational research in urological oncology, aimed at generating knowledge that provides a direct benefit to patients.

1. Develop non-invasive tools for the diagnosis and prognosis of bladder, upper urinary tract and prostate cancer.
2. Identify biomarkers to predict the response to chemotherapy in bladder cancer.
3. Determine molecular prognostic factors in bladder, upper urinary tract, kidney and prostate cancer.

MAIN LINES OF RESEARCH

1. **Non-invasive diagnosis and prognosis of bladder tumors.**
- Development of a gene/miRNA expression signatures in urine samples.
- Identification of DNA aneuploidies in urine samples by FISH.
- Determination of methylation profiles of urine samples.

2. **Predictive biomarkers of prognosis and response to treatments.**
- Markers of disseminated cells from bladder tumours in lymph nodes and peripheral blood.
- Markers of response to neoadjuvant chemotherapy in bladder cancer patients.
- Prognostic markers in bladder, kidney and upper urinary tract tumors.

3. **Non-invasive diagnosis and prognosis of prostate tumours.**
- Development of a gene/miRNA expression signature in post-prostatic massage urine samples.
- Prognostic biomrakers for prostate cancer.

PUBLICATIONS

Originals / I.F.: 64.024

1. Azzouzi AR, Vincendeau S, Barret E, Cicco A, Kleinclauss F, van der Poel HG, Stief CG, Rassweiler J, Salomon G, Solsona E, Alcaraz A, Tammela TT, Rosario DJ, Gomez-Veiga F, Ahlgren G, Benzaghou F, Gaillac B, Amzal B, Debruyne FM, Fromont G, Gratzke C, Emberton M, PCM301 Study Group. **Padeliporfin vascular-targeted photodynamic therapy**

versus active surveillance in men with low-risk prostate cancer (CLIN1001 PCM301): an open-label, phase 3, randomised controlled trial. *LANCET ONCOLOGY.* 18(2):181-191. I.F.: 33.900

2. Izquierdo L, Montalbo R, Ingelmo-Torres M, Mallofré C, Ramírez-Backhaus M, Rubio J, Van der Heijden AG, Schaafsma E, Lopez-Beltran A, Blanca A, Lawrentschuk N, Alcaraz A, Mengual L. **Prognostic microRNAs in upper tract urothelial carcinoma: multicenter and international validation study.** *ONCOTARGET.* 8(31):51522-51529. I.F.: 5.168

3. Ingelmo-Torres M, Lozano JJ, Izquierdo L, Carrion A, Costa M, Gómez L, Ribal MJ, Alcaraz A, Mengual L. **Urinary cell microRNA-based prognostic classifier for non-muscle invasive bladder cancer.** *ONCOTARGET.* 8(11):18238-18247. I.F.: 5.168

4. Sanchez-Escuredo, Ana; Sagasta, Amaia; Revuelta, Ignacio; Rodas, Lida M.; Paredes, David; Musquera, Mireia; Diekmann, Fritz; Campistol, Josep M.; Sole, Manel; Oppenheimer, Federico. **Histopathological evaluation of pretransplant donor biopsies in expanded criteria donors with high kidney donor profile index a retrospective observational cohort study.** *TRANSPLANT INTERNATIONAL.* 30(10):975-986. I.F.: 3.079

5. Vilaseca, Antoni; Campillo, Noelia; Torres, Marta; Musquera, Mireia; Gozal, David; Montserrat, Josep M.; Alcaraz, Antonio; Touijer, Karim A.; Farre, Ramon; Almendros, Isaac. **Intermittent hypoxia increases kidney tumor vascularization in a murine model of sleep apnea.** *PLOS ONE.* 12(6):e0179444. I.F.: 2.806

6. Wagener, Nina; Edelmann, Dominic; Benner, Axel; Zigeuner, Richard; Borgmann, Hendrik; Wolff, Ingmar; Krabbe, Laura M.; Musquera, Mireia; Dell'Oglio, Paolo; Capitanio, Umberto; Klatte, Tobias; Cindolo, Luca; May, Matthias; Brookman-May, Sabine D.;EAU YAU Kidney Canc Grp. **Outcome of papillary versus clear cell renal cell carcinoma varies significantly in non-metastatic disease.** *PLOS ONE.* 12(9):e0184173. I.F.: 2.806

7. Vilaseca A, Nguyen DP, Vertosick EA, Corradi RB, Musquera M, Pérez M, Fossati N, Sjoberg DD, Farré R, Almendros I, Montserrat JM, Benfante NE, Hakimi AA, Skanderup AJ, Russo P, Alcaraz A, Touijer KA. **Obstructive sleep apnea and Fuhrman grade in patients with clear cell renal cell carcinoma treated surgically.** *WORLD J UROL.* 35(1):51-56. I.F.: 2.743

8. Borgmann H, Musquera M, Haferkamp A, Vilaseca A, Klatte T, Shariat SF, Scavuzzo A, Jimenez Rios MA, Wolff I, Capitanio U, Dell'Oglio P, Krabbe LM, Herrmann E, Ecke T, Vergho D, Huck N, Wagener N, Pahernik S, Zastrow S, Wirth M, Surcel C, Mirvald C, Prochazkova K, Hutterer G, Zigeuner R, Cindolo L, Hora M, Stief CG, May M, Brookman-May SD. **Prognostic significance of Fuhrman grade and age for cancer-specific and overall survival in patients with papillary renal cell carcinoma: results of an international multi-institutional study on 2189 patients.** *WORLD JOURNAL OF UROLOGY.* 35(12):1891-1897. I.F.: 2.743

9. Beardo P., Truan Cacho D., Izquierdo L., Alcover-Garcia J., Alcaraz A., Extramiana J., Mallofré C. **Cancer-Specific Survival Stratification Derived from Tumor Expression of Tissue Inhibitor of Metallo-proteinase-2 in Non-Metastatic Renal Cell Carcinoma.** *PATHOLOGY ONCOLOGY RESEARCH.* I.F.: 1.736

10. May M., Surcel C., Capitanio U., Dell'Oglio P., Klatte T., Shariat S., Ecke T., Wolff I., Vergho D., Wagener N., Huck N., Pahernik S., Zastrow S., Wirth M., Borgmann H., Haferkamp A., Musquera M., Krabbe L., Herrmann E., Scavuzzo A., Mirvald C., Hutterer G., Zigeuner R., Stief C., Waidelich R., Cindolo L., Kalusova K., Brookman-May S., Riedmiller H., Jimenez Rios M., Vilaseca A. **Prognostic and discriminative power of the 7th TNM classification for patients with surgically treated papillary renal cell carcinoma: results of a multi-institutional validation study (CORONA subtype project).** *SCANDINAVIAN JOURNAL OF UROLOGY.* 51(4):269-276. I.F.: 1.513

11. Gómez-Rivas J., Rodríguez-Socarrás M., Tortolero-Blanco L., Garcia-Sanz M., Alvarez-Maestro M., Ribal M., Cózar-Olmo M. **Influence of social networks on congresses of urological societies and associations: Results of the 81th National Congress of the Spanish Urological Association.** *ACTAS UROLOGICAS ESPANOLAS.* 41(3):181-187. I.F.: 1.181

12. Gómez-Veiga F, Rodríguez-Antolín A, Miñana B, Hernández C, Suárez JF, Fernández-Gómez JM, Unda M, Burgos J, Alcaraz A, Rodríguez P, Medina R, Castiñeiras J, Moreno C, Pedrosa E, Cózar JM, GESCAP. Diagnosis and treatment for clinically localized prostate cancer. **Adherence to the European Association of Urology clinical guidelines in a nationwide population-based study - GESCAP group.** *ACTAS UROLOGICAS ESPANOLAS.* 41(6):359-367. I.F.: 1.181

Review / I.F.: 5.62

1. Veskimäe E., Neuzillet Y., Rouanne M., MacLennan S., Lam T., Yuan Y., Compérat E., Cowan N., Gakis G., van der Heijden A., Ribal M., Witjes J., Lebrét T. **Systematic review of the oncological and functional outcomes of pelvic organ-preserving radical cystectomy (RC) compared with standard RC in women who undergo curative surgery and orthotopic neobladder substitution for bladder cancer.** *BJU INTERNATIONAL.* 120(1):12-24. I.F.: 4.439

2. Gomez-Veiga, F.; Alcaraz-Asensio, A.; Burgos-Revilla, J.; Cozar-Olmo, J. M. **Developments in urologic oncology "OncoForum": The best of 2016.** *ACTAS UROLOGICAS ESPANOLAS.* 41(9):543-551. I.F.: 1.181

Letters / I.F.: 4.439

1. Loeb S., Roupret M., Van Oort I., N'dow J., van Gurp M., Bloemberg J., Darraugh J., Ribal M. **Novel use of Twitter to disseminate and evaluate adherence to clinical guidelines by the European Association of Urology.** *BJU INTERNATIONAL.* 119(6):820-822. I.F.: 4.439

Editorial / I.F.: 16.265

1. Alcaraz A., Peri L., Izquierdo L., Musquera M. **Is Robotic Kidney Transplant the Near Future?** *EUROPEAN UROLOGY.* 72(2):218-219. I.F.: 16.265

Clinical Guidelines / I.F.: 16.265

1. Alfred Witjes J., Lebret T., Compérat E., Cowan N., De Santis M., Bruins H., Hernández V., Espinós E., Dunn J., Rouanne M., Neuzillet Y., Veskimäe E., van der Heijden A., Gakis G., Ribal M. **Updated 2016 EAU Guidelines on Muscle-invasive and Metastatic Bladder Cancer.** *EUROPEAN UROLOGY.* 71(3):462-475. I.F.: 16.265

GRANTS FOR RESEARCH IN PROGRESS

Alcaraz A. **Validación Clínica Robot Quirúrgico.**
Sponsored by: Ministerio de Economía y Competitividad. RTC-2015-3926-1
Duration: 01/03/2015- 30/06/2018

Mengual L. **Caracterización de los perfiles de expresión génica del tumor vesical no músculo invasivo de bajo riesgo en orinas. Desarrollo de un modelo diagnóstico no invasivo para el cáncer vesical.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00284
Duration: 01/01/2014-30/06/2017

DOCTORAL THESES

Musquera M, Almendros I. **Molecular and clinical response of renal cell carcinoma to intermittent hypoxia.**
PhD student: Antoni Vilaseca Cabo

Alcaraz J, Lloreta J. **Análisis de la expresión de las moléculas relacionadas con el complejo principal de histocompatibilidad de clase I Gen A (MICA) y de NKG2D como respuesta al estrés celular en el cáncer urotelial de vejiga.**
PhD student: Enrique Antonio Rijo Mora

Alcaraz J, Luque Mª. **El uso de la TAC abdominal para el diagnóstico de los estadios tempranos del desarrollo de la enfermedad litiásica.**
PhD student: Alexandru Ciudin

ANNUAL
SCIENTIFIC REPORT
2017

AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

3

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AREA 3

LIVER, DIGESTIVE SYSTEM AND METABOLISM

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3.1 Gynecological endocrinology and human reproduction

LOCATION
HCB building

KEYWORDS
1. **Human papillomavirus**
2. **Endometrial cancer**
3. **Assisted reproductive technologies**
4. **Recurrent miscarriage**
5. **Gynecological laparoscopy**
6. **Endometriosis**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	51.33	17	10	4
2016	30.28	10	5	1
2017	68.24	19	10	5

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Aureli Torné (HCB)

STRATEGIC OBJECTIVES

The global aim of this research group for the coming years is to advance in the knowledge of different aspects relating to the physiopathology of human reproduction: from endocrinological considerations to the most important benign and malignant pathological processes of the female reproductive system, as well as the investigation and treatment of human reproduction failure.

MAIN LINES OF RESEARCH

1. **Reproductive failure markers.**
   To find new markers of hemostasis alterations in early and advanced pregnancy in patients with or without antiphospholipid syndrome and in endometriosis patients. To assess the usefulness of immunohistochemical and proteomic parameters in the human endometrium as markers of endometrial receptiveness.

2. **Ovarian dysfunction and stimulation/ hyperstimulation.**
   Investigation of the possibilities of ultrasound, hormonal, endocrinemetabolic and genetic markers in relation to the prediction of ovarian response. To assess the role of the ovarian follicular cells in the pathogenesis of ovarian hyperstimulation syndrome in order to improve the results of assisted reproduction techniques.

3. **Optimization of the surgical management of diseases of the reproductive apparatus**
   To analyze the role of the surgical variables allowing improvement of the results and reduction of the morbidity in the surgical treatment of benign and malignant gynaecological disorders. To define the prognostic value of human papillomavirus detection and viral typing as progression markers of precancerous lesions of the cervix, vagina and vulva.

PUBLICATIONS

Originals / I.F.: 68.24

1. Paredes P, Vidal-Sicart S, Campos F, Tapias A, Sánchez N, Martínez S, Carballo L, Pahisa J, Torné A, Ordi J, Carmona F, Lomeña F. **Role of ICG-(99m)Tc-nanocolloid for sentinel lymph node detection in cervical cancer: a pilot study**. *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR* IMAGING. 44(11):1853-1861. I.F.: 7.277

2. Rakislova N., Clavero O., Alemany L., Saco A., Quirós B., Lloveras B., Alejo M., Pawlita M., Quint W., del Pino M., de Sanjose S., Ordi J. **Histological characteristics of HPV-associated and -independent squamous cell carcinomas of the vulva: A study of 1,594 cases.** *INTERNATIONAL JOURNAL OF CANCER.* 141(12):2517-2527. I.F.: 6.513

3. Sanchez-Cid, Lourdes; Pons, Monica; Jose Lozano, Juan; Rubio, Nuria; Guerra-Rebollo, Marta; Soriano, Aroa; Paris-Coderch, Laia; Segura, Miquel F.; Fueyo, Raquel; Arguimbau, Judit; Zodda, Erika; Bermudo, Raquel; Alonso, Immaculada; Caparros, Xavier; Cascante, Marta; Rafii, Arash; Kang, Yibin; Martiez-Balbas, Marian; Weiss, Stephen J.; Blanco, Jeronimo; Munoz, Montserrat; Fernandez, Pedro L.; Thomson, Timothy M. **MicroRNA-200, associated with metastatic breast cancer, promotes traits of mammary luminal progenitor cells.** *ONCOTARGET.* 8(48):83384-83406. I.F.: 5.168

4. Fernandez-Martinez A., Pascual T., Perrone G., Morales S., de la Haba J., González-Rivera M., Galván P., Zalfa F., Amato M., Gonzalez L., Prats M., Rojo F., Manso L., Paré L., Alonso I., Albanell J., Vivancos A., González A., Matito J., González S., Fernandez P., Adamo B., Muñoz M., Viladot M., Font C., Aya F., Vidal M., Caballero R.,

Carrasco E., Altomare V., Tonini G., Prat A., Martin M. **Limitations in predicting PAM50 intrinsic subtype and risk of relapse score with Ki67 in estrogen receptor-positive HER2- negative breast cancer.** *ONCOTARGET*. 8(13):21930-21937. I.F.: 5.168

5. Munmany M, Marimon L, Cardona M, Nonell R, Juiz M, Astudillo R, Ordi J, Torné A, Del Pino M. **Small lesion size measured by colposcopy may predict absence of cervical intraepithelial neoplasia in a large loop excision of the transformation zone specimen**. *BJOG: AN INTERNATIONAL JOURNAL OF OBSTETRICS AND GYNAECOLOGY*. 124(3):495-502. I.F.: 5.051

6. Leeman A, Del Pino M, Molijn A, Rodriguez A, Torné A, de Koning M, Ordi J, van Kemenade F, Jenkins D, Quint W. **HPV testing in first-void urine provides sensitivity for CIN2+ detection comparable with a smear taken by a clinician or a brush-based self-sample: cross-sectional data from a triage population.** *BJOG: AN INTERNATIONAL JOURNAL OF OBSTETRICS AND GYNAECOLOGY*. 124(9):1356-1363. I.F.: 5.051

7. Munrós J, Martínez-Zamora MA, Tàssies D, Coloma JL, Torrente MA, Reverter JC, Carmona F, Balasch J. **Total circulating microparticle levels are increased in patients with deep infiltrating endometriosis.** *HUM REPROD*. 32(2):325-331. I.F.: 5.020

8. Almanza-Aguilera, Enrique; Urpi-Sarda, Mireia; Llorach, Rafael; Vazquez-Fresno, Rosa; Garcia-Aloy, Mar; Carmona, Francesc; Sanchez, Alex; Madrid-Gambin, Francisco; Estruch, Ramon; Corella, Dolores; Andres-Lacueva, Cristina. **Microbial metabolites are associated with a high adherence to a Mediterranean dietary pattern using a 1H-NMR-based untargeted metabolomics approach.** *JOURNAL OF NUTRITIONAL BIOCHEMISTRY*. 48:36-43. I.F.: 4.518

9. González-Foruria I, Santulli P, Chouzenoux S, Carmona F, Chapron C, Batteux F. **Dysregulation of the ADAM17/Notch signalling pathways in endometriosis: from oxidative stress to fibrosis.** *MOLECULAR HUMAN REPRODUCTION*. 23(7):488-499. I.F.: 3.585

10. Saco A, Diaz A, Hernandez M, Martinez D, Montironi C, Castillo P, Rakislova N, Del Pino M, Martinez A, Ordi J. **Validation of whole-slide imaging in the primary diagnosis of liver biopsies in a University Hospital**. *DIGESTIVE AND LIVER DISEASE*. 49(11):1240-1246. I.F.: 3.061

11. Ros, Cristina; Jose Martinez-Serrano, Maria; Rius, Mariona; Abrao, Mauricio Simoes; Munros, Jordina; Angeles Martinez-Zamora, Ma; Gracia, Meritxell; Carmona, Francisco. **Bowel Preparation Improves the Accuracy of Transvaginal Ultrasound in the Diagnosis of Rectosigmoid Deep Infiltrating Endometriosis: A Prospective Study.** *JOURNAL OF MINIMALLY INVASIVE GYNECOLOGY*. 24(7):1145-1151. I.F.: 3.061

12. Perelló M, González-Foruria I, Castillo P, Martínez-Florensa M, Lozano F, Balasch J, Carmona F. **Oral Administration of Pentoxifylline Reduces Endometriosis-Like Lesions in a Nude Mouse Model.** *REPRODUCTIVE SCIENCES*. 24(6):911-918. I.F.: 2.443

13. Palacios, S.; Cancelo, M. J.; Castelo Branco, C.; Llaneza, P.; Molero, F.; Sanchez Borrego, R. **Vulvar and vaginal atrophy as viewed by the Spanish REVIVE participants: symptoms, management and treatment perceptions.** *CLIMACTERIC*. 20(1):55-61. I.F.: 2.271

14. Duro-Gómez J., Garrido-Oyarzún M., Rodríguez-Marín A., de la Torre González A., Arjona-Berral J., Castelo-Branco C. **Efficacy and safety of misoprostol, dinoprostone and Cook's balloon for labour induction in women with foetal growth restriction at term.** *ARCHIVES OF GYNECOLOGY AND OBSTETRICS*. 296(4):777-781. I.F.: 2.090

15. Duro-Gómez J, Garrido-Oyarzún MF, Rodríguez-Marín AB, de la Torre González AJ, Arjona-Berral JE, Castelo-Branco C. **What can we do to reduce the associated costs in induction of labour of intrauterine growth restriction foetuses at term? A cost-analysis study.** *ARCHIVES OF GYNECOLOGY AND OBSTETRICS*. 296(3):483-488. I.F.: 2.090

16. Del Pino M, Alonso I, Rodriguez-Trujillo A, Bernal S, Geraets D, Guimerà N, Torne A, Ordi J. **Comparison of the analytical and clinical performance of five tests for the detection of human papillomavirus genital infection.** *JOURNAL OF VIROLOGICAL METHODS*. 248:238-243. I.F.: 1.693

17. Perello, Maria; Martinez-Zamora, Maria A.; Torres, Ximena; Munros, Jordina; Llecha, Silvia; De Iazzari, Elisa; Balasch, Juan; Carmona, Francisco. **Markers of deep infiltrating endometriosis in patients with ovarian endometrioma: a predictive model.** *EUROPEAN JOURNAL OF OBSTETRICS, GYNECOLOGY AND REPRODUCTIVE BIOLOGY*. 209:55-60. I.F.: 1.666

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Review / I.F.: 6.419

1. Vannuccini, Silvia; Tosti, Claudia; Carmona, Francisco; Huang, S. Joseph; Chapron, Charles; Guo, Sun-Wei; Petraglia, Felice. **Pathogenesis of adenomyosis: an update on molecular mechanisms.** *REPRODUCTIVE BIOMEDICINE ONLINE*. 35(5):592-601. I.F.: 3.249

2. Oyarzún M., Castelo-Branco C. **Local hormone therapy for genitourinary syndrome of menopause in breast cancer patients: is it safe?** *GYNECOLOGICAL ENDOCRINOLOGY*. 33(6):418-420. I.F.: 1.585

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GRANTS FOR RESEARCH IN PROGRESS

Torné A. **Estudi multicèntric sobre el procés assistencial del càncer d'ovari a l'atenció primària de Catalunya: avaluació de dues intervencions per reduir el retard diagnòstic.**
Sponsored by: Generalitat de Catalunya (PERIS). SLT002/16/00200
Duration: 27/03/2017-31/12/2019

DOCTORAL THESES

Carmona F, Martínez Zamora MA. **Nous marcadors clínics i tractament immunològic de l´endometriosi.**
PhD student: Maria Francesca Perelló Serra

Fàbregues F, Vassena R. **Individualized training in ART.**
PhD student: Amelia Rodriguez Aranda

3.2 Fetal and perinatal medicine

LOCATION
Maternitat building

WEB
www.medicinafetalbarcelona.org

KEYWORDS
1. **Prenatal diseases**
2. **Intrauterine growth restriction**
3. **Fetal programming**
4. **Fetal brain damage**
5. **Prematurity**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	112.21	30	29	1
2016	149.32	44	33	5
2017	182.64	51	28	18

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STRATEGIC OBJECTIVES

Our main objectives are to develop new imaging and molecular tools for early diagnosis and monitoring prenatal diseases, to provide new clinical solutions for improving fetal growth, to develop and validate new technological solutions for fetal surgery and to consolidate animal models for better characterizing fetal programming.

MAIN LINES OF RESEARCH

1. **Prematurity:** This line focuses on patients at risk of preterm labor, investigating non-invasive diagnostic tools such as quantitative ultrasound textures analysis and biomarkers for intraamniotic inflammation and infection.

2. **Placental Disease.** We aim to identify suboptimal fetal growth before birth providing new diagnosis tools for the correct classification of small babies at highest perinatal risk and optimal timing to delivery.

3. **Fetal Brain Development.** We aim to develop quantitative imaging biomarkers for early diagnosis of neurodevelopmental disorders of prenatal origin based on ultrasound and magnetic resonance.

4. **Fetal Programming.** We focus on the long-term impact of prenatal conditions such as fetal growth restriction, preeclampsia, assisted reproductive technologies, perinatal infections or congenital heart disease, providing a better phenotypic characterization and testing preventive strategies for fetal growth restriction.

5. **Fetal Therapy and Surgery.** This research line aims to characterize neuroprotective therapies that could mitigate the neurodevelopmental impairment related to fetal growth restriction and to develop new technological solutions for fetal surgery.

PUBLICATIONS

Originals / I.F.: 181.59

1. Sarvari SI, Rodriguez-Lopez M, Nuñez-Garcia M, Sitges M, Sepulveda-Martinez A, Camara O, Butakoff C, Gratacos E, Bijnens B, Crispi F. **Persistence of Cardiac Remodeling in Preadolescents With Fetal Growth Restriction.** *CIRC CARDIOVASC IMAGING.* 10(1):e005270. I.F.: 6.803

2. Padilla, Nelly; Fransson, Peter; Donaire, Antonio; Figueras, Francesc; Arranz, Angela; Sanz-Cortes, Magdalena; Tenorio, Violeta; Bargallo, Nuria; Junque, Carme; Lagercrantz, Hugo; Aden, Ulrika; Gratacos, Eduard. **Intrinsic Functional Connectivity in Preterm Infants with Fetal Growth Restriction Evaluated at 12 Months Corrected Age.** *CEREBRAL CORTEX.* 27(10):4750-4758. I.F.: 6.559

3. Gonzalez-Tendero A, Zhang C, Balicevic V, Cárdenes R, Loncaric S, Butakoff C, Paun B, Bonnin A, Garcia-Cañadilla P, Muñoz-Moreno E, Gratacós E, Crispi F, Bijnens B. **Whole heart detailed and quantitative anatomy, myofibre structure and vasculature from X-ray phase-contrast synchrotron radiation-based micro computed tomography.** *EUROPEAN HEART JOURNAL-CARDIOVASCULAR IMAGING.* 18(7):732-741. I.F.: 5.990

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9. Rodríguez-López M, Cruz-Lemini M, Valenzuela-Alcaraz B, Garcia-Otero L, Sitges M, Bijnens B, Gratacós E, Crispi F. **Descriptive analysis of the different phenotypes of cardiac remodeling in fetal growth restriction.** *ULTRASOUND IN*

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22. Hernández S, Catalán-García M, Morén C, García-Otero L, López M, Guitart-Mampel M, Milisenda J, Coll O, Cardellach F, Gratacós E, Miró Ò, Garrabou G. **Placental Mitochondrial Toxicity, Oxidative Stress, Apoptosis And Adverse Perinatal Outcomes In Hiv-Pregnancies Under Antiretroviral Treatment Containing Zidovudine.** *JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES.* 75(4):E113-E119. I.F.: 3.935

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25. Garcia-Canadilla P., Rodriguez J., Palazzi M., Gonzalez-Tendero A., Schönleitner P., Balicevic V., Loncaric S., Luiken J., Ceresa M., Camara O., Antoons G., Crispi F., Gratacos E., Bijnens B. **A two dimensional electromechanical model of a cardiomyocyte to assess Intra-cellular regional mechanical heterogeneities.** *PLOS ONE.* 12(8):e0182915. I.F.: 2.806

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34. Baños N, Perez-Moreno A, Migliorelli F, Triginer L, Cobo T, Bonet-Carne E, Gratacos E, Palacio M. **Quantitative Analysis of the Cervical Texture by Ultrasound and Correlation with Gestational Age.** *FETAL DIAGNOSIS AND THERAPY.* 41(4). I.F.: 2.699

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38. Caradeux J., Murillo C., Julià C., Escura S., Ferrero S., Cobo T., Gratacós E., Palacio M. **Follow-Up of Asymptomatic High-Risk Patients with Normal Cervical Length to Predict Recurrence of Preterm Birth.** *FETAL DIAGNOSIS AND THERAPY.* I.F.: 2.699

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Review / I.F.: 17.204

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2. Bennasar M, Eixarch E, Martinez JM, Gratacós E. **Selective intrauterine growth restriction in monochorionic diamniotic twin pregnancies.** *SEMINARS IN FETAL AND NEONATAL MEDICINE.* 22(6):376-382. I.F.: 3.330

3. Figueras F, Gratacos E. **An integrated approach to fetal growth restriction.** *BEST PRACT RES CLIN OBSTET GYNAECOL.* 38:48-58. I.F.: 2.755

4. Sabra, Sally; Gratacos, Eduard; Gomez Roig, Maria Dolores. **Smoking-Induced Changes in the Maternal Immune, Endocrine, and Metabolic Pathways and Their Impact on Fetal Growth: A Topical Review.** *FETAL DIAGNOSIS AND THERAPY.* 41(4):241-250. I.F.: 2.699

5. Sehgal, A.; Crispi, F.; Skilton, M. R.; de Boode, W-P. **Clinician performed ultrasound in fetal growth restriction: fetal, neonatal and pediatric aspects.** *JOURNAL OF PERINATOLOGY.* 37(12):1251-1258. I.F.: 2.313

6. Polettini, Jossimara; Cobo, Teresa; Kacerovsky, Marian; Vinturache, Angela E.; Laudanski, Piotr; Peelen, Myrthe J. C. S.; Helmer, Hanns; Lamont, Ronald F.; Takeda, Jun; Lapointe, Jerome; Torloni, Maria Regina; Zhong, Nanbert; Menon, Ramkumar. **Biomarkers of spontaneous preterm birth: a systematic review of studies using multiplex analysis.** *JOURNAL OF PERINATAL MEDICINE.* 45(1):71-84. I.F.: 1.577

GRANTS FOR RESEARCH IN PROGRESS

Borrell A. **Pérdida gestacional precoz: causas genéticas y riesgo de recurrencia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00588
Duration: 01/01/2015-31/12/2018

Cobo T. **Validación de biomarcadores proteómicos y metabolómicos de inflamación intraamniótica en el parto prematuro en muestras cervico-vaginales y desarrollo de algoritmos clínicos predictores.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00344
Duration: 01/01/2016-31/12/2018

Crispi F. **Impacto de la restricción de crecimiento intrauterino en la dinámica del remodelado cardiovascular en las diferentes etapas de la vida.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00226
Duration: 01/01/2015-31/12/2018

Eixarch E. **Desarrollo de biomarcadores basados en conectividad cerebral para el diagnóstico precoz de las alteraciones del neurodesarrollo de origen prenatal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).PI13/01018
Duration: 01/01/2014-31/12/2017

Eixarch E. **Desarrollo de herramientas predictivas para la identificación precoz de las alteraciones del neurodesarrollo de origen prenatal basadas en el estudio del desarrollo cortical fetal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00861
Duration: 01/01/2017-31/12/2019

Figueras F. **Papel del factor de crecimineto placentario en el manejo de la preeclampsia no severa: estudio aleatorizado. Estudio MAP.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00903
Duration: 01/01/2016-31/12/2018

Gratacós E. **EVERREST - Does vascular endothelial growth factor gene therapy safely improve outcome in severe early-onset fetal growth restriction?**
Sponsored by: European Commission (FP7). 305823
Duration: 01/01/2013-31/12/2018

Gratacós E. **Preventing the neurological and cardiovascular consequences of fetal growth restriction.**
Sponsored by: Obra Social Fundació La Caixa. CP041691
Duration: 01/01/2015 - 31/12/2018

Gratacós E. **Identificación de moduladores y dianas terapéuticas en el remodelado y enfermedad cardiovascular del adulto asociada a retraso de crecimiento intrauterino.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00130
Duration: 01/01/2016-31/12/2018

Garcia Algar O. **Red de salud materno infantil y del desarrollo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0026/0003
Duration: 04/01/2017-31/12/2017

Garcia Algar O. **Efectos clínicos de la exposición prenatal al alcohol: seguimiento de una cohort.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01135
Duration: 08/02/2017-31/12/2017

Garcia Algar O. **Red de Salud Materno-Infantil y del desarrollo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0022/0002
Duration:04/01/2017-31/12/2021

Garcia Algar O. **Alteraciones epigenéticas generadas por exposición prenatal al alcohol en pacientes con SAF (síndrome alcohol fetal). Antioxidante epigalocatequina (EGCG) como herramienta terapéutica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00566
Duration: 17/03/2017-31/12/2019

Gomez del Rincon O. **Evaluación pronóstica de las cardiopatías congénitas desde la etapa prenatal mediante ecocardiografía avanzada y biomarcadores plasmáticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00263
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Gratacós E, Figueras F. **Development of combined screening test for the prediction of preeclampsia and intrauterine growth restriction in the first trimester of pregnancy.**
PhD student: Francesca Crovetto

Gratacós E, Figueras F. **Brain effects of fetal growth restriction and their prevention in an animal model.**
PhD student: Miriam Illa Armengol

Borrell A. **Valor de la translucencia nucal y ductus venoso, en la detección de malformaciones, translocaciones disbalanceadas y enfermedades monogénicas en la ecografía de las 11-14 semanas.**
PhD student: Marta Arigita Lastra

Crispi F, Gratacós E. **Dynamics of cardiovascular remodeling in relation to fetal growth restriction across life course.**
PhD student: Mérida Rodriguez López

Botet F, Gratacós E. **Evaluación de un programa de intervención prenatal para embarazadas con fetos pequeños para la edad gestacional.**
PhD student: Angela Arranz Betegón

Palacio M, Gratacós E. **Cervical consistency index and quantitative cervical texture analysis by ultrasound to predict spontaneous preterm birth.**
PhD student: Núria Baños López

Vikhareva O, Figueras F. **Scarred Uterus: Subsequent pregnancy and delivery.**
PhD student: Anton Baranov

3.3 Viral, toxic and metabolic hepatopathies

LOCATION
CEK building floor 4

KEYWORDS
1. **Hepatitis C virus**
2. **Direct-acting antivirals (DAA)**
3. **Hepatitis B virus**
4. **Antiviral immune responses**
5. **Wilson's Disease**
6. **DILI**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	186.06	23	15	7
2016	135.49	22	18	2
2017	175.86	25	20	3

TEAM INVOLVED IN
CIBEREHD
AGAUR_SGR14

AWARDS
Emili Letang fi de residència
Institution: HCB
Awardee/s: Sergio Rodríguez-Tajes

Beca per a la Iniciació a Recerca
Institution: Societat Catalana de Digestologia
Awardee/s: Sergio Rodríguez-Tajes

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Maria Carlota Londoño (HCB)
Zoe Mariño (HCB)
Sofía Pérez del Pulgar (CIBER)

POST-DOCTORAL RESEARCHERS
Georgios Koutsoudakis (FCRB)

PRE-DOCTORAL RESEARCHERS
Martin Bonacci (CIBER)
Mireia García (IDIBAPS)
Elena Perpiñán (CIBER)
Sergio Rodríguez (HCB)

TECHNICIANS
Patricia González (CIBER)
Thais Leonel (FCRB)

NURSING STAFF
Concepció Bartres (HCB)

COLLABORATORS
Marta Montero (CIBER)

STRATEGIC OBJECTIVES

- Influence of virological and immunological factors on the natural history and treatment response in chronic hepatitis B and C.
- Characterization of the life cycle of HBV and HCV using cell culture models.
- Efficacy of new antiviral regimens against HCV and its impact on the natural history of the disease.

MAIN LINES OF RESEARCH

- Natural history of chronic HBV infection in inactive carriers and patients in the "gray zone".
- Molecular mechanisms and clinical significance of cccDNA persistence in HBV infection, with particular emphasis on its role in the recurrence of the infection after treatment interruption.
- Validation of non-invasive diagnostic methods of liver fibrosis in HBV-infected patients.
- Cell culture of HBV using a microfluidic bioreactor that simulates the hepatic microenvironment.

TEAM Xavier Forns

- Influence of viral and host factors in the natural history and response to treatment in chronic hepatitis B.
- Dynamics of resistance-associated variants during therapy with direct-acting antivirals by massive sequencing.
- Study of the innate and adaptive immune responses in patients with chronic hepatitis C receiving direct-acting antivirals.
- Impact of HCV elimination on the natural history of the disease and on hepatocellular carcinoma.
- Natural history of chronic hepatitis C: development of predictive models of risk of progression to cirrhosis.
- Clinical and virological analysis of population outbreaks of hepatitis A in Barcelona.
- Interplay between HBV, HDV and host factors: impact on liver disease progression

PUBLICATIONS

Originals / I.F.: 175.856

1. Forns X, Lee SS, Valdes J, Lens S, Ghalib R, Aguilar H, Felizarta F, Hassanein T, Hinrichsen H, Rincon D, Morillas R, Zeuzem S, Horsmans Y, Nelson DR, Yu Y, Krishnan P, Lin CW, Kort JJ, Mensa FJ. **Glecaprevir plus pibrentasvir for chronic hepatitis C virus genotype 1, 2, 4, 5, or 6 infection in adults with compensated cirrhosis (EXPEDITION-1): a single-arm, open-label, multicentre phase 3 trial**. *LANCET INFECTIOUS DISEASES, THE.* 17(10):1062-1068. I.F.: 19.864

2. Lens S, Alvarado-Tapias E, Mariño Z, Londoño MC, LLop E, Martinez J, Fortea JI, Ibañez L, Ariza X, Baiges A, Gallego A, Bañares R, Puente A, Albillos A, Calleja JL, Torras X, Hernández-Gea V, Bosch J, Villanueva C, Forns X, García-Pagán JC. **Effects of All-oral Anti-viral Therapy on HVPG and Systemic Hemodynamics in Patients with Hepatitis C Virus-associated Cirrhosis.** *GASTROENTEROLOGY.* 153(5):1273-1283. I.F.: 18.392

3. Fernández Carrillo C, Lens S, Llop E, Pascasio JM, Crespo J, Arenas J, Fernández I, Baliellas C, Carrión JA, de la Mata M, Buti M, Castells L, Albillos A, Romero M, Turnes J, Pons C, Moreno-Planas JM, Moreno-Palomares JJ, Fernández-Rodriguez C, García-Samaniego J, Prieto M, Fernández Bermejo M, Salmerón J, Badia E, Salcedo M, Herrero JI, Granados R, Blé M, Mariño Z, Calleja JL. **Treatment of hepatitis C virus infection in patients with cirrhosis and predictive value of model for end-stage liver disease: Analysis of data from the Hepa-C registry.** *HEPATOLOGY.* 65(6):1810-1822. I.F.: 13.246

4. Pascasio JM, Vinaixa C, Ferrer MT, Colmenero J, Rubin A, Castells L, Manzano ML, Lorente S, Testillano M, Xiol X, Molina E, González-Diéguez L, Otón E, Pascual S, Santos B, Herrero JI, Salcedo M, Montero JL, Sánchez-Antolín G, Narváez I, Nogueras F, Giráldez Á, Prieto M, Forns X, Londoño MC. **Clinical outcomes of patients undergoing antiviral therapy while awaiting liver transplantation.** *JOURNAL OF HEPATOLOGY.* 67(6):1168-1176. I.F.: 12.486

5. Calleja JL, Crespo J, Rincón D, Ruiz-Antorán B, Fernandez I, Perelló C, Gea F, Lens S, García-Samaniego J, Sacristán B, García-Eliz M, Llerena S, Pascasio JM, Turnes J, Torras X, Morillas RM, Llaneras J, Serra MA, Diago M, Rodriguez CF, Ampuero J, Jorquera F, Simon MA, Arenas J, Navascues CA, Bañares R, Muñoz R, Albillos A, Mariño Z, NULL Spanish Group for the Study of the Use of Direct-acting Drugs Hepatitis C Collaborating Group. **Effectiveness, safety and clinical outcomes of direct-acting antiviral therapy in HCV genotype 1 infection: Results from a Spanish real-world cohort.** *JOURNAL OF HEPATOLOGY.* 66(6):1138-1148-1148. I.F.: 12.486

6. Fernandez, Inmaculada; Munoz-Gomez, Raquel; Pascasio, Juan M.; Baliellas, Carme; Polanco, Natalia; Esforzado, Nuria; Arias, Ana; Prieto, Martin; Castells, Lluis; Cuervas-Mons, Valentin; Hernandez, Olga; Crespo, Javier; Calleja, Jose L.; Forns, Xavier; Londono, Maria-Carlota. **Efficacy and tolerability of interferon-free antiviral therapy in kidney transplant recipients with chronic hepatitis C.** *J HEPATOL.* 66(4):718-723. I.F.: 12.486

7. Lens S, Fernández I, Rodríguez-Tajes S, Hontangas V, Vergara M, Forné M, Calleja JL, Diago M, Llaneras J, Llerena S, Torras X, Sacristán B, Roget M, Fernández-Rodríguez CM, Navascués MC, Fuentes J, Sánchez-Ruano JJ, Simón MÁ, Sáez-Royuela F, Baliellas C, Morillas R, Forns X, Spanish Group for the Study of the Use of Direct-acting Drugs Hepatitis C Collaborating Group. **Interferon-Free Therapy in Elderly Patients With Advanced Liver Disease.** *AMERICAN JOURNAL OF GASTROENTEROLOGY.* 112(9):1400-1409. I.F.: 9.566

8. Bonacci M, Lens S, Londoño MC, Mariño Z, Cid MC, Ramos-Casals M, Sánchez-Tapias JM, Forns X, Hernández-Rodríguez J. **Virologic, Clinical, and Immune Response Outcomes of Patients With Hepatitis C Virus-Associated Cryoglobulinemia Treated With Direct-Acting Antivirals.** *CLINICAL GASTROENTEROLOGY AND HEPATOLOGY.* 15(4):575-583. I.F.: 7.398

9. Crespo J., Calleja J., Fernández I., Sacristan B., Ruiz-Antorán B., Ampuero J., Hernández-Conde M., García-Samaniego J., Gea F., Buti M., Cabezas J., Lens S., Morillas R., Salcines J., Pascasio J., Turnes J., Sáez-Royuela F., Arenas J., Rincón D., Prieto M., Jorquera F., Sanchez Ruano J., Navascués C., Molina E., Moya A., Moreno-Planas J., Montoliu S., Serra M., Andrade R., Fernandez C., Fernández Bermejo M., Simon M., Bonet L., de la Vega J., Diago M., Fernández J., Sanchez Antolin G. **Real-World Effectiveness and Safety of Oral Combination Antiviral Therapy for Hepatitis C Virus Genotype 4 Infection.** *CLINICAL GASTROENTEROLOGY AND HEPATOLOGY.* 15(6):945-949.e1. I.F.: 7.398

10. Londoño MC, Lens S, Mariño Z, Bonacci M, Ariza X, Broquetas T, Pla A, Bartres C, Adriani MV, Rodríguez-Tajes S, Costa J, Carrión JA, Pérez-Del-Pulgar S, Forns X. **Hepatitis B reactivation in patients with chronic hepatitis C undergoing anti-viral therapy with an interferon-free regimen.** *ALIMENTARY PHARMACOLOGY AND THERAPEUTICS.* 45(8):1156-1161. I.F.: 7.286

11. Buti, M.; Calleja, J. L.; Lens, S.; Diago, M.; Ortega, E.; Crespo, J.; Planas, R.; Romero-Gomez, M.; Rodriguez, F. G.; Pascasio, J. M.; Fevery, B.; Kurland, D.; Corbett, C.; Kalmeijer, R.; Jessner, W. **Simeprevir in combination with sofosbuvir in treatment-naïve and -experienced patients with hepatitis C virus genotype 4 infection: a Phase III, open-label, single-arm study (PLUTO).** *ALIMENT PHARMACOL THER.* 45(3):468-475. I.F.: 7.286

12. Koutsoudakis G, Paris de León A, Herrera C, Dorner M, Pérez-Vilaró G, Lyonnais S, Grijalvo S, Eritja R, Meyerhans A, Mirambeau G, Díez J. **Oligonucleotide-Lipid Conjugates Forming G-Quadruplex Structures Are Potent and Pangenotypic Hepatitis C Virus Entry Inhibitors In Vitro and Ex Vivo.** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY.* 61(5):e02354-16. I.F.: 4.302

13. Cano A, Mariño Z, Millet O, Martínez-Arranz I, Navasa M, Falcón-Pérez JM, Pérez-Cormenzana M, Caballería J, Embade N, Forns X, Bosch J, Castro A, Mato JM. **A Metabolomics Signature Linked To Liver Fibrosis In The Serum Of Transplanted Hepatitis C Patients.** *SCIENTIFIC REPORTS.* 7(1):10497. I.F.: 4.259

14. Afdhal N, Everson GT, Calleja JL, McCaughan GW, Bosch J, Brainard DM, McHutchison JG, De-Oertel S, An D, Charlton M, Reddy KR, Asselah T, Gane E, Curry MP, Forns X. **Effect of viral suppression on hepatic venous pressure gradient in hepatitis C with cirrhosis and portal hypertension.** *JOURNAL OF VIRAL HEPATITIS.* 24(10):823-831. I.F.: 4.122

15. Alonso S., Riveiro-Barciela M., Fernandez I., Rincón D., Real Y., Llerena S., Gea F., Olveira A., Fernandez-Carrillo C., Polo B., Carrión J., Gómez A., Devesa M., Baliellas C., Castro, Ampuero J., Granados R., Pascasio J., Rubín A., Salmeron J., Badia E., Planas J., Lens S., Turnes J., Montero J., Buti M., Esteban R., Fernández-Rodríguez C. **Effectiveness and safety of sofosbuvir-based regimens plus an NS5A inhibitor for patients with HCV genotype 3 infection and cirrhosis.** Results of a multicenter real-life cohort. *JOURNAL OF VIRAL HEPATITIS.* 24(4):304-311. I.F.: 4.122

16. Perelló C., Carrión J., Ruiz-Antorán B., Crespo J., Turnes J., Llaneras J., Lens S., Delgado M., García-Samaniego J., García-Paredes F., Fernández I., Morillas R., Rincón D., Porres J., Prieto M., Lázaro Ríos M., Fernández-Rodríguez C., Hermo J., Rodríguez M., Herrero J., Ruiz P., Fernández J., Macías M., Pascasio J., Moreno J., Serra M., Arenas J., Real Y., Jorquera F., Calleja J., Sáez Rayuela F., Simón M., González J., Muñoz E., González M., Jiménez M., Moran S., Vergara-Gómez M., Jiménez F., García R., Perelló C., Carrión J., Ruiz-Antorán B., Crespo J., Turnes J., Llaneras J., Lens S., Delgado M., García-Samaniego J., García-Paredes F., Fernández I., Morillas R., Rincón D., Porres J., Prieto M., Lázaro Ríos M., Fernández-Rodríguez C., Hermo J., Rodríguez M., Herrero J., Ruiz P., Fernández J., Macías M., Pascasio J., Moreno J., Serra M., Arenas J., Real Y., Jorquera F., Calleja J., Sáez Rayuela F., Simón M., González J., Muñoz E. **Effectiveness and safety of ombitasvir, paritaprevir, ritonavir ± dasabuvir ± ribavirin: An early access programme for Spanish patients with genotype 1/4 chronic hepatitis C virus infection.** *JOURNAL OF VIRAL HEPATITIS.* 24(3):226-237. I.F.: 4.122

17. Mariño Z, Pascasio-Acevedo JM, Gallego A, Diago M, Baliellas C, Morillas R, Prieto M, Moreno JM, Sánchez-Antolín G, Vergara M, Forné M, Fernández I, Castro MA, Pascual S, Gómez A, Castells L, Montero JL, Crespo J, Calleja JL, García-Samaniego J, Carrión JA, Arencibia AC, Blasco A, López-Núñez C, Sánchez-Ruano JJ, Gea-Rodríguez F, Giráldez Á, Cabezas J, Hontangas V, Torras X, Castellote J, Romero-Gómez M, Turnes J, de Artaza T, Narváez I, Cuervas-Mons V, Forns X. **High efficacy of Sofosbuvir plus Simeprevir in a large cohort of Spanish cirrhotic patients infected with genotypes 1 and 4.** *LIVER INTERNATIONAL.* 37(12):1823-1832. I.F.: 4.116

18. Fernández Carrillo C, Crespo G, de la Revilla J, Castells L, Buti M, Montero JL, Fábrega E, Fernández I, Serrano-Millán C, Hernández V, Calleja JL, Londoño MC. **Successful Continuation of HCV Treatment After Liver Transplantation.** *TRANSPLANTATION.* 101(5):1009-1012. I.F.: 3.678

19. Dlouhy I, Torrente MÁ, Lens S, Rovira J, Magnano L, Giné E, Delgado J, Balagué O, Martínez A, Campo E, Forns X, Sánchez-Tapias JM, López-Guillermo A. **Clinico-biological characteristics and outcome of hepatitis C virus-positive patients with diffuse large B-cell lymphoma treated with immunochemotherapy.** *ANNALS OF HEMATOLOGY.* 96(3):405-410. I.F.: 3.083

20. Salcedo M, Prieto M, Castells L, Pascasio JM, Montero Alvarez JL, Fernández I, Sánchez-Antolín G, González-Diéguez L, García-Gonzalez M, Otero A, Lorente S, Espinosa MD, Testillano M, González A, Castellote J, Casafont F, Londoño MC, Pons JA, Molina Pérez E, Cuervas-Mons V, Pascual S, Herrero JI, Narváez I, Vinaixa C, Llaneras J, Sousa JM, Bañares R. **Efficacy and safety of daclatasvir-based antiviral therapy in HCV recurrence after liver transplantation. Role of cirrhosis and genotype 3. A multi-centre cohort study**. *TRANSPLANT INTERNATIONAL.* 30(10):1041-1050. I.F.: 3.079

21. Caro-Pérez N; Martínez-Rebollar M; Gregori J; Quer J; González P; Gambato M; García-González N; González-Candelas F; Costa J; Esteban J; Mallolas J; Forns X; Laguno M; Perez-Del-Pulgar S. **Phylogenetic analysis of an epidemic outbreak of acute hepatitis C in HIV-infected patients by ultra-deep pyrosequencing**. *JOURNAL OF CLINICAL VIROLOGY.* 92:42-47. I.F.: 3.051

22. Riveiro-Barciela, Mar; Tabernero, David; Calleja, Jose L.; Lens, Sabela; Manzano, Maria L.; Gea Rodriguez, Francisco; Crespo, Javier; Piqueras, Belen; Pascasio, Juan M.; Comas, Carmen; Gutierrez, Maria L.; Aguirre, Alberto; Suarez, Emilio; Garcia-Samaniego, Javier; Rivero, Miguel; Acero, Doroteo; Fernandez-Bermejo, Miguel; Moreno, Diego; Sanchez-Pobre, Pilar; de Cuenca, Beatriz; Moreno-Palomares, J. J.; Esteban, Rafael; Buti, Maria. **Effectiveness and Safety of Entecavir or Tenofovir in a Spanish Cohort of Chronic Hepatitis B Patients: Validation of the Page-B Score to Predict Hepatocellular Carcinoma.** *DIG DIS SCI.* 62(3):784-793. I.F.: 2.875

23. Garriga C., Manzanares-Laya S., García De Olalla P., Gorrindo P., Lens S., Solà R., Martínez-Rebollar M., Laguno M., Navarro J., Torras X., Gurguí M., Barberá M., Quer J., Masdeu E., Simón P., Ros M., De Andrés A., Caylà J. **Evolution of acute hepatitis C virus infection in a large European city: Trends and new patterns.** *PLOS ONE.* 12(11):e0187893. I.F.: 2.806

24. Coto-Llerena M, Koutsoudakis G, Boix L, López-Oliva JM, Caro-Pérez N, Fernández-Carrillo C, González P, Gastaminza P, Bruix J, Forns X, Pérez-Del-Pulgar S. **Permissiveness of human hepatocellular carcinoma cell lines for hepatitis C virus entry and replication.** *VIRUS RESEARCH.* 240:35-46. I.F.: 2.628

25. Forns X; Berenguer M; Herzer K; Sterneck M; Donato M; Andreone P; Fagiuoli S; Cieciura T; Durlik M; Calleja J; Marino Z; Shukla U; Verbinnen T; Lenz O; Ouwerkerk-Mahadevan S; Peeters M; Janssen K; Kalmeijer R; Jessner W. **Efficacy, safety, and pharmacokinetics of simeprevir, daclatasvir, and ribavirin in patients with recurrent hepatitis C virus genotype 1b infection after orthotopic liver transplantation: The Phase II SATURN study.** *TRANSPLANT INFECTIOUS DISEASE.* 19(3). I.F.: 1.719

Review / I.F.: 7.275

1. Reig M, Boix L, Mariño Z, Torres F, Forns X, Bruix J. **Liver Cancer Emergence Associated with Antiviral Treatment: An Immune Surveillance Failure?** *SEMINARS IN LIVER DISEASE.* 37(2):109-118. I.F.: 5.500

2. Lens S, Rodriguez-Tajes S, Llovet LP, Maduell F, Londoño MC. **Treating Hepatitis C in Patients with Renal Failure.** *DIGESTIVE DISEASES.* 35(4):339-346. I.F.: 1.775

Letters / I.F.: 40.396

1. Forns X, Mensa F. **Proton-pump inhibitors and glecaprevir plus pibrentasvir in HCV infection – Authors' reply.** *LANCET INFECTIOUS DISEASES, THE.* 17(12):1240. I.F.: 19.864

2. Forns, Xavier;Liver Unit. **Juan Rodes, MD, Ph.D. (1938-2017): Excellence and Leadership OBITUARY.** *HEPATOLOGY.* 65(6):2137-2138. I.F.: 13.246

3. Londoño MC, Carrión JA, Forns X. **Letter: hepatitis B reactivation in patients with chronic hepatitis C during direct-acting antiviral therapy-authors' reply.** *ALIMENTARY PHARMACOLOGY AND THERAPEUTICS.* 45(12):1559-1560. I.F.: 7.286

Editorial / I.F.: 24.557

1. Koutsoudakis G, Pérez-Del-Pulgar S, Forns X. **Occult Hepatitis C Virus Infection: Are We Digging Too Deep?** *GASTROENTEROLOGY.* 152(3):472-474. I.F.: 18.392

2. Fishman JA, Forns X. **HCV-positive Donor Organs in Solid Organ Transplantation: Mind the Gap!** *AMERICAN JOURNAL OF TRANSPLANTATION.* 17(11):2755-2756. I.F.: 6.165

Case Reports / I.F.: 1.678

1. Senin, Alicia; Broquetas, Teresa; Lens, Sabela; Canete, Nuria; Londono, Maria-Carlota; Ferraro, Mariana; Forns, Xavier; Salar, Antonio; Carrion, Jose A. **Aplastic Anemia and Severe Myelosuppression with Boceprevir or Simeprevir-Containing Hepatitis C Virus Treatment.** *ANNALS OF HEPATOLOGY.* 16(2):312-317. I.F.: 1.678

Clinical Guidelines / I.F.: 12.486

1. European Ass Study Liver. **EASL Recommendations on Treatment of Hepatitis C 2016.** *JOURNAL OF HEPATOLOGY.* 66(1):153-194. I.F.: 12.486

GRANTS FOR RESEARCH IN PROGRESS

Forns X. **Human monoclonal antibody therapy to prevent hepatitis C virus reinfection of liver transplants: advancing lead monoclonal antibodies into clinical trial.**
Sponsored by: European Commission (FP7). 305600
Duration: 01/01/2013-31/12/2017

Forns X. **Estudio de los factores virológicos e inmunológicos relacionados con la recurrencia de la infección por los virus de la hepatitis C y B tras la interrupción del tratamiento antiviral.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00151
Duration: 01/01/2016-31/12/2018

Londoño MC. **Lesiones inflamatorias en el injerto tras la erradicación del virus de la hepatitis C con antivirales directos en receptores de trasplante hepático.**
Sponsored by: CIBER de Enfermedades Hepáticas y Digestivas
Duration: 01/02/2017-31/01/2019

Pérez del Pulgar S. **Factores virológicos e inmunológicos relacionados con el tratamiento antiviral y la recurrencia de la hepatitis C después del trasplante hepático.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00155
Duration: 01/01/2014-31/03/2017

Pérez del Pulgar S. **Estudio de la persistencia del cccDNA durante la infección por el VHB in vivo, e in vitro mediante un bioreactor que simula el microambiente hepático.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00111
Duration: 01/01/2017-31/12/2019

Forns X. **Virological and immunological factors associated with hepatitis C and hepatitis B virus infection recurrence after treatment discontinuation.**
Sponsored by: Gilead. GLD15/00274
Duration: 07/03/2016-06/03/2018

DOCTORAL THESES

Pérez del Pulgar S, Diez J. **Nuevos factores del hospedador en la fisiopatología y la respuesta al tratamiento antiviral de la infección por el virus de la hepatitis C.**
PhD student: Carlos Fernández Carrillo

Pérez del Pulgar S, Londoño MC. **Factores virológicos, inmunológicos y epidemiológicos relacionados con la hepatitis C y su tratamiento.**
PhD student: Noelia Caro Pérez

3.4 Mechanisms of liver disease and complications of cirrhosis

LOCATION
CEK building floor 3

KEYWORDS
1. **Cirrhosis**
2. **Non-alcoholic steatohepatitis**
3. **Liver stem cells**
4. **Kidney failure**
5. **Chronic liver diseases**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	171.20	23	19	3
2016	182.19	25	21	2
2017	140.22	23	17	2

TEAM INVOLVED IN
CIBEREHD
AGAUR_SGR14
AGAUR_SGR17

AWARDS
International Albus Award
Institution: Grifols
Awardee/s: Joan Clària

ICREA Academia
Institution: Institut Catalana de Recerca i Estudis Avançats
Awardee/s: Pere Ginès

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Jordi Ribera (CIBER)
Elsa Solà (HCB)

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José Alcaraz-Quiles (HCB)
Delia Blaya (IDIBAPS)
Silvia Carvajal (FCRB)
Mireia Casulleras (FCRB)
Bernat Cordoba (IDIBAPS)
Marta Duran-Güell (FCRB)
Roger Flores-Costa (FCRB)
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STRATEGIC OBJECTIVES

To investigate new therapeutic and diagnostic strategies in the most common complications present in chronic liver diseases. The basic and translational studies investigate the mechanisms implicated in disease progression of chronic liver diseases as well as the role of progenitor cells in liver regeneration and tissue repair. To assess the role of bioactive lipid mediators on the onset and resolution of systemic and tissue inflammatory responses in chronic liver disease.

MAIN LINES OF RESEARCH

1. To explore new therapeutic targets useful in the treatment of endothelial dysfunction, vascular remodeling, hepatic fibrosis and the characteristic hemodynamic disturbances of chronic liver diseases.
2. To search for molecular strategies to stimulate a functional liver regeneration.
3. To identify novel serum biomarkers of liver disease progression and complications of cirrhosis.

4. To investigate molecular pathways of acute-on-chronic liver failure development (ACLF) and identify new biomarkers of ACLF.
5. To investigate the role of liver cell plasticity and progenitor cells in liver disease.
6. Mechanisms of liver inflammation, with particular emphasis on the role of lipid mediators generated from both omega-6 and omega-3 polyunsaturated fatty acids.
7. Mechanisms of resolution of inflammation in adipose tissue and its relationship with obesity-associated complications, particularly non-alcoholic steatohepatitis.
8. To study the role of systemic inflammation in Acute-on-Chronic Liver Failure.
9. To explore the potential of iPSC-derived liver cells for disease modeling.

RESEARCH GROUP
INFLAMMATION AND LIVER DISEASE

GROUP LEADER
Joan Clària (HCB)

Our research group conducts both basic and experimental studies to translate them to patients afflicted with chronic liver disease. Our main focus is on the study of inflammatory mediators, especially lipid mediators generated from polyunsaturated fatty acids of both omega-6 and omega-3 series and their role in the progression of an uncontrolled inflammatory response. Special attention is given to the recently-characterized pro-resolving lipid mediators that control the timely resolution of inflammation and the return of tissues and cells to homeostasis.

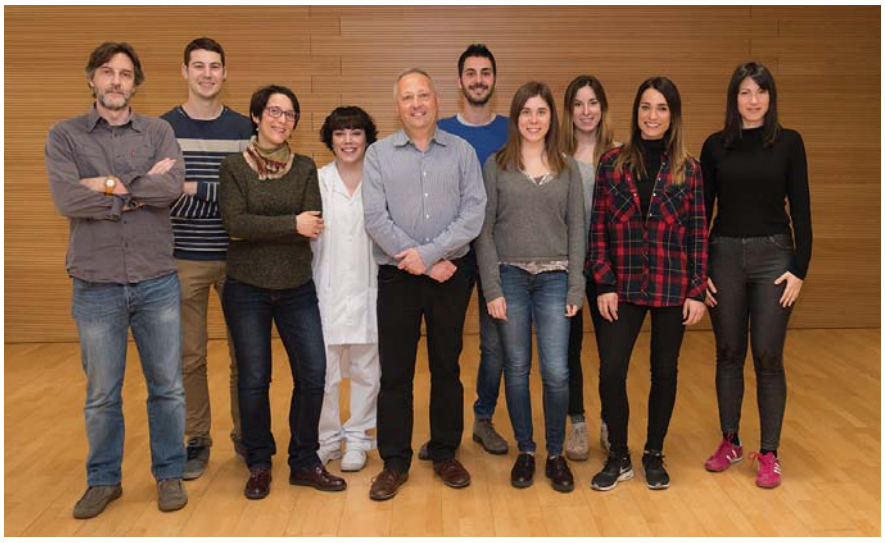
RESEARCH GROUP
CHRONIC LIVER DISEASES: MOLECULAR MECHANISMS AND CLINICAL CONSEQUENCES

GROUP LEADER
Pere Ginès (HCB)

Our group focuses on the study of chronicliver diseases and progression to advance disease via clinical and basic-translational studies.

Main areas: Role of urine biomarkers in diagnosis and treatment of renal dysfunction in cirrhosis. Inflammatory biomarkers and disease progression.
Intestinal microbiome in patients with different stages of liver cirrhosis, particularly in ACLF.
Efficacy and safety of rifaximin and simvastatin as a treatment for prevention of ACLF. Analysis of liver samples at varying stages of disease to assess molecular networks relevant to disease progression and possible influence of extrahepatic factors.
Identifying points of intervention in cirrhosis using cell cultures and experimental models of cirrhosis.
Role and mechanisms of liver progenitor cells during liver regeneration in end-stage liver diseases.

GROUP Pere Ginès



GROUP Joan Clària

RESEARCH GROUP
TRANSLATIONAL RESEARCH IN NEW THERAPEUTIC AND DIAGNOSTIC STRATEGIES IN LIVER DISEASES

GROUP LEADER
Wladimiro Jiménez (HCB)

Our group have an extensive research experience on the pathophysiological and molecular bases of the most common complications present in patients with chronic liver disease. The projects have a profound translational character, with special interest in identifying new therapeutic tools to stop or reverse the progression of the fibroproliferative events. We also intend that the knowledge generated in these studies result in substantial improvements in the biochemical diagnosis of patients, which also constitutes a substantial part of our activity. This would represent an improvement from the point of view of comfort, diagnosis, monitoring and treatment of patients with liver disease.

GROUP Wladimiro Jiménez

RESEARCH GROUP
LIVER PLASTICITY AND TISSUE REPAIR

GROUP LEADER
Pau Sancho-Bru (IDIBAPS)

Liver regeneration and tissue repair are complex and well-orchestrated processes that become deregulated in chronic liver disease. By using human samples, animal models as well as primary and stem cell-based in vitro approaches we aim at identifying those factors leading to deficient liver regeneration and tissue repair and to develop means to enhance liver function in chronic liver disease. Our group is particularly interested in understanding cell plasticity and inflammatory responses in chronic liver injury, as well as exploring the potential of iPSC-derived liver cells for the generation of multicellular in vitro models of liver disease.

GROUP Pau Sánchez-Bru

PUBLICATIONS

Originals / I.F.: 140.223

1. Alcaraz-Quiles J, Titos E, Casulleras M, Pavesi M, López-Vicario C, Rius B, Lopategi A, de Gottardi A, Graziadei I, Gronbaek H, Ginès P, Bernardi M, Arroyo V, Clària J. **Polymorphisms in the IL-1 gene cluster influence systemic inflammation in patients at risk for acute-on-chronic liver failure.** *HEPATOLOGY.* 65(1):202-216. I.F.: 13.246

2. Perea L, Coll M, Sanjurjo L, Blaya D, Taghdouini AE, Rodrigo-Torres D, Altamirano J, Graupera I, Aguilar-Bravo B, Llopis M, Vallverdú J, Caballeria J, van Grunsven LA, Sarrias MR, Ginès P, Sancho-Bru P. **Pentraxin-3 Modulates LPS-induced Inflammatory Response and Attenuates**

Liver Injury. *HEPATOLOGY.* 66(3):953-968. I.F.: 13.246

3. Bissonnette J, Altamirano J, Devue C, Roux O, Payancé A, Lebrec D, Bedossa P, Valla D, Durand F, Ait-Oufella H, Sancho-Bru P, Caballeria J, Ginès P, Boulanger CM, Bataller R, Rautou PE. **A Prospective study of the utility of plasma biomarkers to diagnose alcoholic hepatitis.** *HEPATOLOGY.* 66(2):555-563. I.F.: 13.246

4. Altamirano J, López-Pelayo H, Michelena J, Jones PD, Ortega L, Ginès P, Caballería J, Gual A, Bataller R, Lligoña A. **Alcohol abstinence in patients surviving an episode of alcoholic hepatitis: Prediction and impact on long-term survival.** *HEPATOLOGY.* 66(6):1842-1853. I.F.: 13.246

5. Marin V, Poulsen K, Odena G, McMullen MR, Altamirano J, Sancho-Bru P, Tiribelli C, Caballeria J, Rosso N, Bataller R, Nagy LE. **Hepatocyte-derived macrophage migration inhibitory factor mediates alcohol-induced liver injury in mice and patients.** *JOURNAL OF HEPATOLOGY.* 67(5):1018-1025. I.F.: 12.486

6. Puthumana J, Ariza X, Belcher JM, Graupera I, Ginès P, Parikh CR. **Urine Interleukin 18 and Lipocalin 2 are Biomarkers of Acute Tubular Necrosis in Patients With Cirrhosis: A Systematic Review and Meta-Analysis.** *CLINICAL GASTROENTEROLOGY AND HEPATOLOGY.* 15(7):1003-1013. I.F.: 7.398

7. Huelin P., Piano S., Solà E., Stanco M., Solé C., Moreira R., Pose E., Fasolato S., Fabrellas N., de Prada G., Pilutti C., Graupera I., Ariza X., Romano A., Elia C., Cárdenas A., Fernández J., Angeli P., Ginès P. **Validation of a Staging System for Acute Kidney Injury in Patients With Cirrhosis and Association With Acute-on-Chronic Liver Failure.** *CLINICAL GASTROENTEROLOGY AND HEPATOLOGY.* 15(3):438-445. I.F.: 7.398

8. Pose E., Solà E., Piano S., Gola E., Graupera I., Guevara M., Cárdenas A., Angeli P., Ginès P. **Limited Efficacy of Tolvaptan in Patients with Cirrhosis and Severe Hyponatremia: Real-Life Experience.** *AMERICAN JOURNAL OF MEDICINE.* 130(3):372-375. I.F.: 5.550

9. Rius B, Duran-Güell M, Flores-Costa R, López-Vicario C, Lopategi A, Alcaraz-Quiles J, Casulleras M, Lozano JJ, Titos E, Clària J. **The specialized pro-resolving lipid mediator maresin 1 protects hepatocytes from lipotoxic and hypoxia-induced endoplasmic reticulum stress.** *FASEB JOURNAL.* 31(12):5384-5398. I.F.: 5.498

10. Kerbert, Annarein J. C.; Verspaget, Hein W.; Navarro, Alex Amoros; Jalan, Rajiv; Sola, Elsa; Benten, Daniel; Durand, Francois; Gines, Pere; van der Reijden, Johan J.; van Hoek, Bart; Coenraad, Minneke J.; EASL-CLIF Consortium. **Copeptin in acute decompensation of liver cirrhosis: relationship with acute-on-chronic liver failure and short-term survival.** *CRITICAL CARE.* 21(1):321. I.F.: 5.358

11. Penela D, Acosta J, Andreu D, Ortiz-Perez JT, Bosch X, Perea RJ, de Caralt TM, Fernández-Armenta J, Soto-Iglesias D, Prat-Gonzalez S, Borràs R, Mont L, Hervas V, Morales-Ruiz M, Jiménez W, Mira A, Donnelly J, Ekinci O, Lasalvia L, Berruezo A. **Identification of the Potentially Arrhythmogenic Substrate in the Acute Phase of ST-elevation Myocardial Infarction.** *HEART RHYTHM.* 14(4):592-598. I.F.: 4.866

12. Sánchez E., Nieto J., Vidal S., Santiago A., Martinez X., Sancho F., Sancho-Bru P., Mirelis B., Corominola H., Juárez C., Manichanh C., Guarner C., Soriano G. **Fermented milk containing Lactobacillus paracasei subsp. paracasei CNCM I-1518 reduces bacterial translocation in rats treated with carbon tetrachloride.** *SCIENTIFIC REPORTS.* 7:45712. I.F.: 4.259

13. Lopez-Vicario, Cristina; Rius, Bibiana; Alcaraz-Quiles, Jose; Gonzalez-Periz, Ana; Isabel Martinez-Puchol, Ana; Casulleras, Mireia; Duran-Guell, Marta; Ibarzabal, Ainitze; Corcelles, Ricard; Laguna-Fernandez, Andres; Back, Magnus; Titos, Esther; Claria, Joan. **Association of a variant in the gene encoding for ERV1/ChemR23 with reduced inflammation in visceral adipose tissue from morbidly obese individuals.** *SCIENTIFIC REPORTS.* 7(1):15724. I.F.: 4.259

14. Graupera I, Coll M, Pose E, Elia C, Piano S, Solà E, Blaya D, Huelin P, Solé C, Moreira R, de Prada G, Fabrellas N, Juanola A, Morales-Ruiz M, Sancho-Bru P, Villanueva C, Ginès P. **Adipocyte Fatty-Acid Binding Protein is Overexpressed in Cirrhosis and Correlates with Clinical Outcomes.** *SCIENTIFIC REPORTS.* 7(1):1829. I.F.: 4.259

15. Fernandez, Javier; Acevedo, Juan; Prado, Veronica; Mercado, Mario; Castro, Miriam; Pavesi, Marco; Arteaga, Mireya; Sastre, Lydia; Juanola, Adria; Gines, Pere; Arroyo, Vicente. **Clinical course and short-term mortality of cirrhotic patients with infections other than spontaneous bacterial peritonitis.** *LIVER INTERNATIONAL.* 37(3):385-395. I.F.: 4.116

16. Solà E, Sanchez-Cabús S, Rodriguez E, Elia C, Cela R, Moreira R, Pose E, Sánchez-Delgado J, Cañete N, Morales-Ruiz M, Campos F, Balust J, Guevara M, García-Valdecasas JC, Ginès P. **Effects of alfapump™ system on kidney and circulatory function in patients with cirrhosis and refractory ascites.** *LIVER TRANSPLANTATION.* 23(5):583-593. I.F.: 3.910

17. Ribera J, Pauta M, Melgar-Lesmes P, Córdoba B, Bosch A, Calvo M, Rodrigo-Torres D, Sancho-Bru P, Mira A, Jiménez W, Morales-Ruiz M. **A small population of liver endothelial cells undergoes endothelial to mesenchymal transition in response to chronic liver injury.** *AMERICAN JOURNAL OF PHYSIOLOGY - GASTROINTESTINAL AND LIVER PHYSIOLOGY.* 313(5):G492-G504. I.F.: 3.468

18. Soto M; Sampietro-Colom L; Lasalvia L; Mira A; Jimenez W; Navasa M. **Cost-effectiveness of enhanced liver fibrosis test to assess liver fibrosis in chronic hepatitis C virus and alcoholic liver disease patients.** *WORLD JOURNAL OF GASTROENTEROLOGY.* 23(17):3163-3173. I.F.: 3.365

19. Aranda, Gloria; Lopez, Cristina; Fernandez-Ruiz, Rebeca; Esteban, Yaiza; Garcia-Eguren, Guillermo; Mora, Mireia; Halperin, Irene; Casals, Gregori; Ensenat, Joaquim; Hanzu, Felicia A. **Circulatory Immune Cells in Cushing Syndrome: Bystanders or Active Contributors to Atherometabolic Injury? A Study of Adhesion and Activation of Cell Surface Markers.** *INTERNATIONAL JOURNAL OF ENDOCRINOLOGY.* 2017:2912763 I.F.: 2.510

20. Sans-Roselló J, Casals G, Rossello X, González de la Presa B, Vila M, Duran-Cambra A, Morales-Ruiz M, Ferrero-Gregori A, Jiménez W, Sionis A. **Prognostic value of plasma apelin concentrations at admission in patients with ST-segment elevation**

acute myocardial infarction. *CLIN BIOCHEM.* 50(6):279-284. I.F.: 2.434

21. Reyes A, Marti J, Marfà S, Jiménez W, Reichenbach V, Pelegrina A, Fondevila C, Garcia Valdecasas JC, Fuster J. **Prognostic prediction by liver tissue proteomic profiling in patients with colorectal liver metastases.** *FUTURE ONCOLOGY.* 13(10):875-882. I.F.: 2.131

22. Miró Ò, González de la Presa B, Herrero-Puente P, Fernández Bonifacio R, Möckel M, Mueller C, Casals G, Sandalinas S, Llorens P, Martín-Sánchez FJ, Jacob J, Bedini JL, Gil V. **The GALA study: relationship between galectin-3 serum levels and short- and long-term outcomes of patients with acute heart failure.** *BIOMARKERS.* 22(8):731-739. I.F.: 2.006

23. Kerbert AJ, Schaapman JJ, van der Reijden JJ, Amorós Navarro À, McCormick A, van Hoek B, Arroyo V, Ginès P, Jalan R, Vargas V, Stauber R, Verspaget HW, Coenraad MJ, CANONIC Study Investigators of the EASL-CLIF Consortium. **Impact of genetic variation in the vasopressin 1a receptor on the development of organ failure in patients admitted for acute decompensation of liver cirrhosis.** *EUR J GASTROENTEROL HEPATOL.* 29(5):535-538. I.F.: 1.968

Review / I.F.: 38.465

1. Hernaez R., Solà E., Moreau R., Ginès P. **Acute-on-chronic liver failure: An update.** *GUT.* 66(3):541-552. I.F.: 16.658

2. Casals E, Gusta MF, Piella J, Casals G, Jiménez W, Puntes V. **Intrinsic and Extrinsic Properties Affecting Innate Immune Responses to Nanoparticles: The Case of Cerium Oxide.** *FRONTIERS IN IMMUNOLOGY.* 8:970. I.F.: 6.429

3. Claria J; López-Vicario C; Rius B; Titos E. **Pro-resolving actions of SPM in adipose tissue biology.** *MOLECULAR ASPECTS OF MEDICINE.* 58:83-92. I.F.: 5.686

4. Morales-Ruiz, Manuel; Santel, Ansgar; Ribera, Jordi; Jimenez, Wladimiro. **The Role of Akt in Chronic Liver Disease and Liver Regeneration.** *SEMINARS IN LIVER DISEASE.* 37(1):11-16. I.F.: 5.500

5. Almeida J., Solà-Valls N., Pose E., Blanco Y., Sepúlveda M., Llufriu S., Gines P., Saiz A. **Liver injury and glatiramer acetate, an uncommon association: Case report and literature review.** *THERAPEUTIC ADVANCES IN NEUROLOGICAL DISORDERS.* 10(11):367-372. I.F.: 4.192

Letters / I.F.: 18.733

1. Sola, Elsa; Kerbert, Annarein; Coenraad, Minneke; Gines, Pere. **Reply to: Are we still searching for the fifth element of MELD?** *JOURNAL OF HEPATOLOGY.* 66(1):247-248. I.F.: 12.486

2. Fernandez, Javier; Acevedo, Juan; Arroyo, Vicente. **Response to the clinical course and short-term mortality of cirrhotic patients with non-spontaneous bacterial peritonitis infections.** *LIVER INTERNATIONAL.* 37(4):623. I.F.: 4.116

3. Reyes A, Marti J, Marfa S, Jimenez W, Reichenbach V, Pelegrina A, Fondevila C, Valdecasas JC, Fuster J. **Letter in reply: Prognostic prediction by liver tissue proteomic profiling in patients with colorectal liver metastases.** *FUTURE ONCOLOGY.* 13(3):1135-1136. I.F.: 2.131

Editorial / I.F.: 37.428

1. Ginès P. **Juan Rodés-In Memoriam.** *GASTROENTEROLOGY.* 152(6):1249-1250. I.F.: 18.392

2. Colmenero J; Sancho-Bru P. **Mesenchymal stromal cells for immunomodulatory cell therapy in liver transplantation: One step at a time.** *JOURNAL OF HEPATOLOGY.* 67(1):7-9. I.F.: 12.486

3. Solà E, Ginès P. **Pro: Acute-on-chronic liver failure.** *LIVER TRANSPLANTATION.* 23(10):1318-1324. I.F.: 3.910

4. Steinhilber, Dieter; Uydes-Dogan, B. Sonmez; Topal, Gokce; Claria, Joan; Norel, Xavier; Schebb, Nils Helge; Bannenberg, Gerard. **Editorial-Special issue of the 6th European Workshop on Lipid Mediators.** *PROSTAGLANDINS AND OTHER LIPID MEDIATORS.* 133:1-3. I.F.: 2.640

GRANTS FOR RESEARCH IN PROGRESS

Casals G. **Evaluación de las propiedades antioxidantes y antiinflamatorias de las nanopartículas de óxido de cerio como nueva estrategia terapéutica en la esteatosis hepática.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00777
Duration: 01/01/2016-31/12/2018

Claria J. **Mecanismos moleculares determinantes de la resolución inadecuada de la inflamación en tejido adiposo obeso. Nuevas oportunidades en la prevención de comorbilidades metabólicas.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2015-63674-R
Duration: 01/01/2016-31/12/2019

Claria J. **Identification of novel modulators of chronic inflammation in prevalent diseases: unveiling divergent mechanisms of disease.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE14/00045
Duration: 01/01/2015-31/12/2017

Fernández Gómez J. **Impacto clinico y coste/eficacia de estrategias de vigilancia epidemiológica y de optimización farmacoterapéutica antibiótica en la cirrosis descompensada.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00885
Duration: 01/01/2017-31/12/2019

Ginès P. **Insuficiencia hepática crónica agudizada y disfunción multiorgánica: Mecanismos moleculares y evaluación de nuevos métodos diagnósticos y terapéuticos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00330
Duration: 01/01/2013-31/12/2018

Ginès P. **Clinical evaluation of carbons of controlled porosity as a new therapy for the treatment of liver cirrhosis and non-alcoholic fatty liver disease.**
Sponsored by: European Commission (H2020_PHC14). 634579-2
Duration: 01/05/2015-31/10/2019

Ginès P. **Síndrome de insuficiencia hepatica cronica agudizada en la cirrhosis. Relación con el microbioma y la inflamación.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00043

Duration: 01/01/2017 -31/12/2019

Ginès P. **LIVERHOPE: SIMVASTIN and RIFAXIMIN as New Therapy for patients with decompensated cirrhosis.**
Sponsored by: European Commission (H2020_SC1). 731875
Duration: 01/01/2017-31/12/2021

Jiménez W, Fernández-Varo G. **Utilidad terapéutica de las Nanopartículas de Óxido de Cerio en las enfermedades hepáticas.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2015-64126-R
Duration: 01/01/2016-31/12/2018

Morales M. **Potencialidad terapéutica del fosfoproteoma de Akt/PKB en la regeneración hepática y en la cirrosis.**
Sponsored by: Ministerio de Economia y Competitividad. SAF13-41840-R
Duration: 01/01/2014-31/05/2017

Morales M. **Estimulación de la regeneración funcional de hígados cirróticos mediante la normalización vascular intrahepática y la modulación de dianas de Akt.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2016-75358-R
Duration: 30/12/2016-29/12/2019

Sancho-Bru P. **Papel de las células progenitoras hepáticas en la hepatitis alcohólica y su potencial como nueva diana terapéutica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00320
Duration: 01/01/2015-30/06/2018

DOCTORAL THESES

Clària J. **Role of specialized pro-resolving lipid mediators and ER stress in obesity derived non-alcoholic fatty liver disease.**
PhD student: Bibiana Rius Boadas

Ginés P. Villanueva C. **Inflamació sistémica i cirrosi. Valor pronòstic de biomarcadors inflammatoris enla cirrosi descompensada.**
PhD Student: Isabel Graupera Garcia-Milà

Sancho-Bru P. Ginés P. **Estudio de los microRNAs en la fisiopatología de la hepatitis alcoholic.**
PhD student: Delia Blaya Diez de Revenga

Jiménez W. **Detección e identificación de biomarcadores precoces de fibrosis hepática mediante técnicas proteómicas de alto rendimiento.**
PhD student: Santiago Marfà Bruix

3.5 Hepatic oncology

LOCATION
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www.bclc.cat

KEYWORDS
1. **Hepatocellular carcinoma**
2. **Intrahepatic cholangiocarcinoma**
3. **Biomarker profiling**
4. **Treatment**
5. **Outcomes research**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	173.09	13	13	-
2016	186.48	17	16	1
2017	186.91	22	12	2

TEAM INVOLVED IN
CIBEREHD
AGAUR_SGR14
AGAUR_SGR17

AWARDS
"The World's most influential Scientific Minds 2017"
(top 1% most cited Investigators)
Institution: Thomson Reuters
Awardee/s: Jordi Bruix, Josep M Llovet

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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.

TEAM. Jordi Bruix

MAIN LINES OF RESEARCH

The team investigates how to refine the selection criteria for potentially curative treatment (surgical resection, transplantation, percutaneous approach with ablation) with the aim of ensuring maximum efficacy in terms of survival. Evaluations are made of the options for improving the efficacy of non-curative therapies which have been shown to improve survival (arterial chemoembolization, sorafenib, regorafenib). In this sense, phase 1, 2 and 3 studies are carried out and led at international level together with the Biomedical Industry, with a view to determining the efficacy of new molecular agents in phase 1, 2 and 3.
The team is also actively involved in studies about diagnosis and treatment of cholangiocarcinoma. Major projects in clinical research are developed as investigator initiated trials or in collaboration with the pharmaceutical industry.
These include clinical and translational activity unit BCLC human cell lines, while the two subgroups coordinated by JM Llovet and A Morales base their activity in bench studies to advance knowledge in the pathogenesis and signalling pathways in hepatocyte and cholangiocte proliferation and liver cancer.

RESEARCH GROUP
TRANSLATIONAL RESEARCH IN HEPATIC ONCOLOGY

GROUP LEADER
Josep M. Llovet (ICREA-IDIBAPS)

The group aims to identify new therapeutic targets. There are several lines of research within two international consortiums involving the BCLC-IDIBAPS, the Mount Sinai School of Medicine, the Dana-Farber Cancer Institute, the Broad Institute (Boston), INSERM (Paris), the National Tumor Institute (Milan), and several others.
These explore:

1. Molecular classification of hepatocellular carcinoma and Intrahepatic cholangiocarcinoma.
2. Drivers and signalling pathways.
3. Role of co-morbidities in the pathogenesis of HCC (EU-grant HEP-CAR).
4. Characterization of immune subclasses in HCC and the impact of checkpoint inhibitor in treatment response.

RESEARCH GROUP
HEPATOCELULAR SIGNALING AND CANCER

GROUP LEADER
Albert Morales (IIBB-CSIC)

Our work is focused on identifying cellular targets with therapeutic potential in liver cancer and the development of prognostic markers of antitumor efficacy for the treatment of the hepatocellular carcinoma (HCC).
In particular, mitochondrial-directed and lipid-based therapies that may improve current HCC management, and help to overcome sorafenib/regorafenib resistance, are under present evaluation.
Protein and RNA signatures that categorize potential candidates for each specific treatment are another area of interest in our research.

GROUP Albert Morales

GROUP Josep Maria Llobet

PUBLICATIONS

Originals / I.F.: 186.907

1. Bruix, Jordi; Qin, Shukui; Merle, Philippe; Granito, Alessandro; Huang, Yi-Hsiang; Bodoky, Gyrogy; Pracht, Marc; Yokosuka, Osamu; Rosmorduc, Olivier; Breder, Valeriy; Gerolami, Rene; Masi, Gianluca; Ross, Paul J.; Song, Tianqiang; Bronowicki, Jean-Pierre; Ollivier-Hourmand, Isabelle; Kudo, Masatoshi; Cheng, Ann-Lii; Llovet, Josep M.; Finn, Richard S.; LeBerre, Marie-Aude; Baumhauer, Annette; Meinhardt, Gerold; Han, Guohong; Resorce Investigators. **Regorafenib for patients with hepatocellular carcinoma who progressed on sorafenib treatment (RESORCE): a randomised, double-blind, placebo-controlled, phase 3 trial.** *LANCET.* 389(10064):56-66. I.F.: 47.831

2. Sia D, Jiao Y, Martinez-Quetglas I, Kuchuk O, Villacorta-Martin C, Castro de Moura M, Putra J, Camprecios G, Bassaganyas L, Akers N, Losic B, Waxman S, Thung SN, Mazzaferro V, Esteller M, Friedman SL, Schwartz M, Villanueva A, Llovet JM. **Identification of an Immune-specific Class of Hepatocellular Carcinoma, Based on Molecular Features.** *GASTROENTEROLOGY.* 153(3):812-826. I.F.: 18.392

3. Bollard J, Miguela V, Ruiz de Galarreta M, Venkatesh A, Bian CB, Roberto MP, Tovar V, Sia D, Molina-Sánchez P, Nguyen CB, Nakagawa S, Llovet JM, Hoshida Y, Lujambio A. **Palbociclib (PD-0332991), a selective CDK4/6 inhibitor, restricts tumour growth in preclinical models of hepatocellular carcinoma.** *GUT.* 66(7):1286-1296. I.F.: 16.658

4. Tovar, Victoria; Cornella, Helena; Moeini, Agrin; Vidal, Samuel; Hoshida, Yujin; Sia, Daniela; Peix, Judit; Cabellos, Laia; Alsinet, Clara; Torrecilla, Sara; Martinez-Quetglas, Iris; Jose Lozano, Juan; Desbois-Mouthon, Christele; Sole, Manel; Domingo-Domenech, Josep; Villanueva, Augusto; Llovet, Josep M. **Tumour initiating cells and IGF/FGF signalling contribute to sorafenib resistance in hepatocellular carcinoma.** *GUT.* 66(3):530-539. I.F.: 16.658

5. Bruix J, Cheng AL, Meinhardt G, Nakajima K, De Sanctis Y, Llovet J. **Prognostic Factors and Predictors of Sorafenib Benefit in Patients With Hepatocellular Carcinoma: Analysis of Two Phase 3 Studies.** *JOURNAL OF HEPATOLOGY.* 67(5):999-1008. I.F.: 12.486

6. Torrecilla S, Sia D, Harrington AN, Zhang Z, Cabellos L, Cornella H, Moeini A, Camprecios G, Leow WQ, Fiel MI, Hao K, Bassaganyas L, Mahajan M, Thung SN, Villanueva A, Florman S, Schwartz ME, Llovet JM. **Trunk events present minimal intra- and inter-tumoral heterogeneity in hepatocellular carcinoma.** *JOURNAL OF HEPATOLOGY.* 67(6):1222-1231. I.F.: 12.486

7. Lencioni R, Montal R, Torres F, Park JW, Decaens T, Raoul JL, Kudo M, Chang C, Ríos J, Boige V, Assenat E, Kang YK, Lim HY, Walters I, Llovet JM. **Objective response by mRECIST as a predictor and potential surrogate end-point of overall survival in advanced HCC.** *JOURNAL OF HEPATOLOGY.* 66(6):1166-1172. I.F.: 12.486

8. Moeini A, Sia D, Zhang Z, Camprecios G, Stueck A, Dong H, Montal R, Torrens L, Martinez-Quetglas I, Fiel MI, Hao K, Villanueva A, Thung SN, Schwartz ME, Llovet JM. **Mixed hepatocellular cholangiocarcinoma tumors: Cholangiolocellular carcinoma is a distinct molecular entity.** *JOURNAL OF HEPATOLOGY.* 66(5):952-961. I.F.: 12.486

9. Urtasun N., Boces-Pascual C., Boix L., Bruix J., Pastor-Anglada M., Pérez-Torras S. **Role of drug-dependent transporter modulation on the chemosensitivity of cholangiocarcinoma.** *ONCOTARGET.* 8(52):90185-90196. I.F.: 5.168

10. Rimola, Jordi; Alvarez-Cofino, Almudena; Perez-Jeldres, Tamara; Ayuso, Carmen; Alfaro, Ignacio; Rodriguez, Sonia; Ricart, Elena; Ordas, Ingrid; Panes, Julian. **Comparison of three magnetic resonance enterography indices for grading activity in Crohn's disease.** *JOURNAL OF GASTROENTEROLOGY.* 52(5):585-593. I.F.: 4.493

11. Taouli B., Hoshida Y., Kakite S., Chen X., Tan P., Sun X., Kihira S., Kojima K., Toffanin S., Fiel M., Hirschfield H., Wagner M., Llovet J. **Imaging-based surrogate markers of transcriptome subclasses and signatures in hepatocellular carcinoma: preliminary results.** *EUROPEAN RADIOLOGY.* 27(11):4472-4481. I.F.: 3.967

12. Agüero F, Forner A, Valdivieso A, Blanes M, Barcena R, Manzardo C, Rafecas A, Castells L, Abradelo M, Barrera-Baena P, González-Diéguez L, Salcedo M, Serrano T, Jiménez-Pérez M, Herrero JI, Gastaca M, Aguilera V, Fabregat J, Del Campo S, Bilbao I, Romero CJ, Moreno A, Rimola A, Miro JM, FIPSE Investigators. **Human immunodeficiency virus-infected liver transplant recipients with incidental hepatocellular carcinoma: A prospective multicenter nationwide cohort study.** *LIVER TRANSPL.* 23(5):645-651. I.F.: 3.910

13. Solms A, Reinecke I, Fiala-Buskies S, Keunecke A, Drenth HJ, Bruix J, Meinhardt G, Cleton A, Ploeger B. **Exposure-response relationship of regorafenib efficacy in patients with hepatocellular carcinoma.** *EUROPEAN JOURNAL OF PHARMACEUTICAL SCIENCES.* 109S:S149-S153. I.F.: 3.756

14. Coto-Llerena M, Koutsoudakis G, Boix L, López-Oliva JM, Caro-Pérez N, Fernández-Carrillo C, González P, Gastaminza P, Bruix J, Forns X, Pérez-Del-Pulgar S. **Permissiveness of human hepatocellular carcinoma cell lines for hepatitis C virus entry and replication.** *VIRUS RESEARCH.* 240:35-46. I.F.: 2.628

15. Carrera C., Gual A., Dláz A., Puig-Butillé J., Noguès S., Vilalta A., Conill C., Rull R., Vilana R., Arguis P., Vidal-Sicart S., Alós L., Palou J., Castel T., Malvehy J., Puig S. **Prognostic role of the histological subtype of melanoma on the hands and feet in Caucasians.** *MELANOMA RESEARCH.* 27(4):315-320. I.F.: 2.615

16. Molina V, Sampson J, Ferrer J, Díaz A, Ayuso JR, Sánchez-Cabús S, Fuster J, García-Valdecasas JC. **Surgical treatment of perihilar cholangiocarcinoma: early results of en bloc portal vein resection.** *LANGENBECKS ARCHIVES OF SURGERY.* 402(1):95-104. I.F.: 2.203

17. Reyes A, Marti J, Marfà S, Jiménez W, Reichenbach V, Pelegrina A, Fondevila C, Garcia Valdecasas JC, Fuster J. **Prognostic prediction by liver tissue proteomic profiling in patients with colorectal liver metastases.** *FUTURE ONCOLOGY.* 13(10):875-882. I.F.: 2.131

18. Pelegrina A, Martí J, Miquel R, Ferrer J, Hernández-Gea V, Diaz A, Nadal C, García-Valdecasas JC, Fuster J. **Changes of liver hemodynamic and elastography parameters in patients with colorectal liver metastases receiving preoperative chemotherapy: "a note of caution".** *WORLD JOURNAL OF SURGICAL ONCOLOGY.* 15(1):224-224. I.F.: 1.600

19. Ferrer J., Molina V., Rull R., López-Boado M., Sánchez S., García R., Ricart M., Ventura-Aguiar P., García-Criado Á., Esmatjes E., Fuster J., Garcia-Valdecasas J. **Pancreas transplantation: Advantages of a retroperitoneal graft position.** *CIRUGIA ESPANOLA.* 95(9):513-520. I.F.: 1.276

20. Calatayud D., Sánchez Cabús S., Sampson J., Resendiz A., Molina V., Fondevila C., Fuster J., García-Valdecasas J. **Hepatic resection: a safe and effective surgery.** *CIRUGIA ESPANOLA.* 95(8):437-446. I.F.: 1.276

21. Sánchez Cabús S., Estalella L., Pavel M., Calatayud D., Molina V., Ferrer J., Fondevila C., Fuster J., García-Valdecasas J. **Analysis of the long-term results of living donor liver transplantation in adults.** *CIRUGIA ESPANOLA.* 95(6):313-320. I.F.: 1.276

22. Rodríguez de Lope C., Reig M., Matilla A., Ferrer M., Dueñas E., Mínguez B., F. Castroagudín J., Ortiz I., Pascual S., Lledó J., Gallego A., Arenas J., Aracil C., Forne M., Muñoz C., Pons F., Sala M., Iñarrairaegui M., Martin-Llahi M., Andreu V., Garre C., Rendón P., Fuentes J., Crespo J., Rodríguez M., Bruix J., Varela M. **Clinical characteristics of hepatocellular carcinoma in Spain. Comparison with the 2008-2009 period and analysis of the causes of diagnosis out of screening programs. Analysis of 686 cases in 73 centers.** *MEDICINA CLINICA.* 149(2):61-71. I.F.: 1.125

Review / I.F.: 41.686

1. Sia D, Villanueva A, Friedman SL, Llovet JM. **Liver Cancer Cell of Origin, Molecular Class, and Effects on Patient Prognosis.** *GASTROENTEROLOGY.* 152(4):745-761. I.F.: 18.392

2. Sapisochin G, Bruix J. **Liver transplantation for hepatocellular carcinoma: outcomes and novel surgical approaches.** *NAT REV GASTROENTEROL HEPATOL.* 14(4):203-217. I.F.: 13.678

3. Reig M, Boix L, Mariño Z, Torres F, Forns X, Bruix J. **Liver Cancer Emergence Associated with Antiviral Treatment: An Immune Surveillance Failure?** *SEMINARS IN LIVER DISEASE.* 37(2):109-118. I.F.: 5.500

4. Reig M, Boix L, Bruix J. **The impact of direct antiviral agents on the development and recurrence of hepatocellular carcinoma.** *LIVER INT.* 37(Suppl.1):136-139. I.F.: 4.116

Letters / I.F.: 31.66

1. Sia D, Llovet JM. **Liver cancer: Translating '-omics' results into precision medicine for hepatocellular carcinoma.** *NATURE REVIEWS GASTROENTEROLOGY AND HEPATOLOGY.* 14(10):571-572. I.F.: 13.678

2. Montal R, Lencioni R, Llovet JM. **Reply to: "mRECIST for systemic therapies: more evidence is required before recommendations could be made".** *JOURNAL OF HEPATOLOGY.* 67(1):196-197. I.F.: 12.486

3. Rimassa, Lorenza; Reig, Maria; Abbadessa, Giovanni; Peck-Radosavljevic, Markus; Harris, William; Zagonel, Vittorina; Pastorelli, Davide; Caremoli, Elena Rota; Porta, Camillo; Damjanov, Nevena; Patel, Hitendra; Daniele, Bruno; Lamar, Maria; Schwartz, Brian; Goldberg, Terri; Santoro, Armando; Bruix, Jordi. **Tumor biopsy and patient enrollment in clinical trials for advanced hepatocellular carcinoma.** *WORLD JOURNAL OF GASTROENTEROLOGY.* 23(13):2448-2452. I.F.: 3.365

4. Reyes A, Marti J, Marfa S, Jimenez W, Reichenbach V, Pelegrina A, Fondevila C, Valdecasas JC, Fuster J. **Letter in reply: Prognostic prediction by liver tissue proteomic profiling in patients with colorectal liver metastases.** *FUTURE ONCOLOGY.* 13(3):1135-1136. I.F.: 2.131

Editorial / I.F.: 17.654

1. Bruix J, Reig M, Sangro B. **Assessment of treatment efficacy in hepatocellular carcinoma: response rate, delay in progression or none of them.** *JOURNAL OF HEPATOLOGY.* 66(6):1114-1117. I.F.: 12.486

2. Reig M., Díaz-González Á., Bruix J.. The success of regorafenib in hepatocellular carcinoma in a world of failures. **Learnings for future developments.** *ONCOTARGET.* 8(63):106151-106152. I.F.: 5.168

3. Mari, Montserrat; Morales, Albert. **Bone morphogenetic protein-9/activin-like kinase 1 axis a new target for hepatic regeneration and fibrosis treatment in liver injury.** *HEPATOBILIARY SURGERY AND NUTRITION.* 6(6):414-416. I.F.: 3.451

GRANTS FOR RESEARCH IN PROGRESS

Bruix J. **Influencia de la heterogeneidad del micro-ambiente tumoral en la respuesta terapéutica del carcinoma hepatocelular humano (CHC).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00962
Duration: 01/01/2015-30/06/2018

Bruix J. **Molecular regulation of the progression from hepatic steatosis to cirrhosis and hepatocellular carcinoma: Role and therapeutic potential of CPEB proteins.**
Sponsored by: Asociación Española Contra el Cáncer (AECC_2015)
Duration: 01/09/2015-31/08/2020

Forner, A. **Papel de las células tumorales circulantes (CTCs) para predecir diseminación tumoral en el carcinoma hepatocelular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01229
Duration: 01/01/2014-30/06/2017

Llovet J.M. **Integrative Genomic Analysis of Human Intrahepatic Cholangiocarcinoma.**
Sponsored by: Asociación Española Contra el Cáncer (AECC_2011)
Duration: 01/09/2011-31/08/2018

Llovet J.M. **Identificación de nuevas alteraciones moleculares asociadas a mal pronóstico y evaluación como dianas terapeuticas en el carcinoma hepatocelular.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2013-41027-R
Duration: 01/01/2014-31/12/2017

Llovet JM. **Mecanismos de resistencia adquirida a sorafenib en el carcinoma hepatocelular.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2016-76390-R
Duration: 30/12/2016-29/12/2019

Llovet J.M. **Mechanisms underlying hepatocellular carcinoma pathogenesis and impact of co-morbidities .**
Sponsored by: European Commission (H2020_PHC-2015). 667273-2
Duration: 01/01/2016-31/12/2019

Llovet J.M. **Identificación de biomarcadores de respuesta a inmunoterapias en carcinoma hepatocellular.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO). EUIN2017-87932.
Duration: 01/01/2017-13/02/2017

Morales A. **Regulación terapéutica de la transición EMT/MET y la quimioresistencia en enfermedad hepática crónica.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2015-66515-R
Duration: 01/01/2016-31/12/2018

Reig M. **Evaluación clínica prospectiva del perfil genético-inmuno/inflamatorio en el tratamiento del carcinoma hepatocelular con sorafenib para predecir tolerancia y supervivencia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI115/00145
Duration: 23/05/2016-31/12/2018

DOCTORAL THESES

Llovet JM. **Liver cancer: Molecular classification of Cholangiocarcinoma.**
PhD student: Agrin Moeini Mortazavi

Bruix J. **Caracterización de células tumorales circulantes en pacientes con carcinoma hepatocelular. Función de EpCAM en la metástasis.**
PhD student: Ana Carolina Rhodes Cabrerizo

Bruix J, Forner A. **Evaluación y optimización del tratamiento de los tumores hepáticos primarios de pequeño tamaño (< 2 cm).**
PhD student: Carlos Rodríguez de Lope López.

Forner A. **Estudio proteómico en pacientes con metástasis hepáticas de cáncer colo-rectal. Identificación de diferentes perfiles proteómicos en relación a los criterios clínico patológicos convencionales de gravedad.**
PhD student: Adalgiza Reyes Romero

3.6 Hepatic hemodynamics and portal hypertension. Hemorrhage from ruptured gastroesophageal varices

LOCATION
CEK building floor 4

KEYWORDS
1. **Portal hypertension**
2. **Cirrhosis of the liver**
3. **Angiogenesis**
4. **Obesity**
5. **Liver sinusoidal endothelial cells**
6. **Vascular liver diseases**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	223.61	26	22	2
2016	151.24	16	16	-
2017	219.10	27	22	4

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STRATEGIC OBJECTIVES

Translational research aimed at advancing in the knowledge of the pathophysiology of portal hypertension, which represents the main complication of chronic liver diseases. Discovery of new therapeutic targets, introduction of new treatments for this syndrome, and development of new non-invasive techniques for its clinical evaluation.
In addition, the group is active in the fields of vascular liver diseases, angiogenesis abnormalities in liver disease and on organ preservation.

MAIN LINES OF RESEARCH

1. Factors regulating liver microcirculation under normal conditions and in cirrhosis, based on isolated liver perfusion studies and studies in isolated liver sinusoid endothelial cells.
2. Regulation of the phenotype of liver sinusoidal endothelial cells: relevance in the pathophysiology of chronic liver disease, portal hypertension, liver preservation, and in the complications of cirrhosis.
3. Liver protection from external injury in healthy and cirrhotic livers.
4. Angiogenesis in chronic liver disease: function, regulation/dysregulation and therapeutic potential.
5. Impact of obesity on chronic liver disease: pathogenic mechanisms and therapeutic implications.
6. Molecular regulation of the progression from liver steatosis to cirrhosis and liver cancer. Identification of new therapeutic targets.
7. New non-invasive methods for evaluating cirrhosis.
8. Randomized clinical studies of novel treatments for portal hypertension.
9. Hepatic vascular diseases (Budd-Chiari syndrome, Portal Vein Thrombosis; Idiopathic non-cirrhotic portal hypertension).

10. Prevention of decompensation of cirrhosis.
11. Discovery of diagnostic biomarkers for idiopathic portal hypertension and for risk-stratification.

RESEARCH GROUP
ANGIOGENESIS IN LIVER DISEASES

GROUP LEADER
Mercedes Fernández Lobato (IDIBAPS)

Our research (www.mercedesfernandezlab.com) focuses on identifying the causes and drivers of chronic liver diseases, including cirrhosis of the liver and liver cancer, which affect millions of humans beings and are leading causes of death and liver transplantation worldwide. This is essential to fully elucidate unresolved pathogenetic mechanisms of disease, and to facilitate the identification of novel therapeutic avenues to improve human health.
Our specific research projects include:

1. Angiogenesis in chronic liver disease: function, regulation/dysregulation and therapeutic potential;
2. Impact of obesity on chronic liver disease: pathogenic mechanisms and therapeutic implications
3. Molecular regulation of the progression from liver steatosis to cirrhosis and liver cancer: identification of new therapeutic targets.

GROUP Mercedes Fernández Lobato

GROUP Juan Carlos García-Pagán and Jordi Gràcia-Sancho (UP)

RESEARCH GROUP
REGULATION OF LIVER MICROCIRCULATION IN CIRRHOSIS AND HEPATIC VASCULAR DISEASES

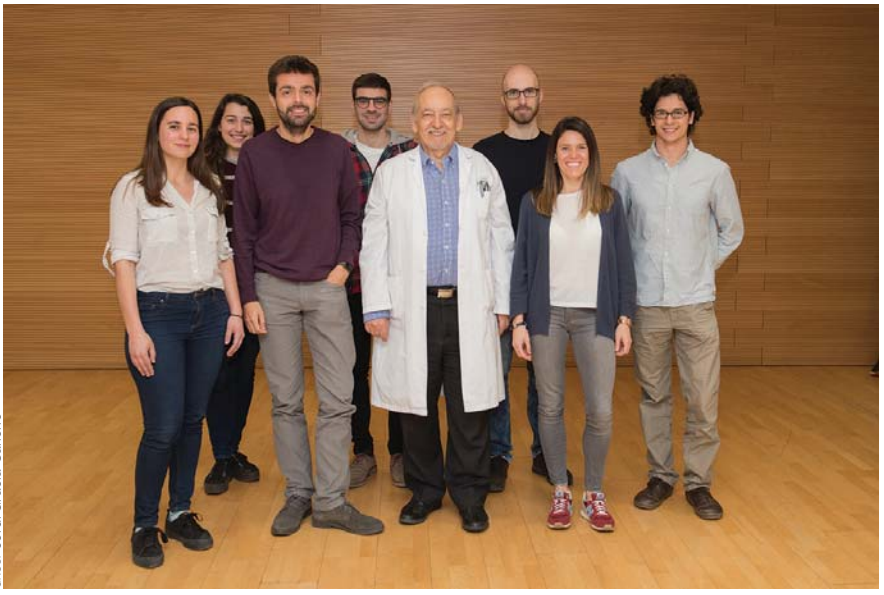
GROUP LEADER
Juan Carlos García-Pagán (HCB)

Increased hepatic vascular resistance is one of the main mechanisms responsible for the development of portal hypertension in cirrhosis. Better understanding the mechanisms involved in the increased intrahepatic resistance in cirrhosis and their potential modulation will allow us to design new therapeutic strategies for the treatment of portal hypertension. Liver vascular disorders, particularly Budd-Chiari syndrome, non-cirrhotic portal thrombosis and idiopathic portal hypertension, are infrequent causes of portal hypertension. For a number of years our group has served as a reference center for these illnesses allowing us to advance in their knowledge (prognosis, diagnosis and treatment).

RESEARCH GROUP
VASCULAR BIOLOGY OF THE LIVER

GROUP LEADER
Jordi Gracia-Sancho (IDIBAPS)

The cells of the liver microcirculation, principally sinusoidal endothelial cells, stellate cells and resident macrophages (Kupffer cells), play a key role in the development and progression of liver diseases, and therefore represent an important therapeutic target for the treatment and improvement of patients with liver damage.
Our research group studies the molecular and biomechanical processes that regulate the phenotype of these sinusoidal cells, and the hepatic intercellular communication mechanisms, in health, in response to acute liver damage, in chronic liver disease (cirrhosis and fatty liver), and in ageing.
Our results are the basis for the development of new therapies to improve liver microcirculation, fibrosis and function. In order to achieve our goals, we use a wide range of experimental methods that include tissues and primary cells, both from human and rodents, in vivo/in vitro models of liver disease, cell co-culture by means of liver-on-a-chip technology, and analysis of big data.



GROUP Jordi Gracia-Sancho

PUBLICATIONS

Originals / I.F.: 219.095

1. Maillo, Carlos; Martin, Judit; Sebastian, David; Hernandez-Alvarez, Maribel; Garcia-Rocha, Mar; Reina, Oscar; Zorzano, Antonio; Fernandez, Mercedes; Mendez, Raul. **Circadian- and UPR-dependent control of CPEB4 mediates a translational response to counteract hepatic steatosis under ER stress.** *NATURE CELL BIOLOGY.* 19(2):94-105. I.F.: 20.060

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Bosch J. **Proyecto Integrado de Excelencia - Understanding obesity (Ob), metabolic syndrome (MetS), type 2 diabetes (T2DM) and fatty liver disease (FL): a multidisciplinary approach.**
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Escorsell A. **Eficacia de la derivación portosistémica intrahepática (TIPS) en el tratamiento de la hemorragia aguda por varices gástricas: estudio aleatorizado y controlado vs tratamiento convencional.**
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Duration: 01/01/2015-30/06/2019

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Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE15/00027
Duration: 01/01/2016-31/12/2018

García-Pagán JC. **Hipertensión Portal Idiopática. Fisiopatología e identificación de dianas terapéuticas.**

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Duration: 30/12/2016-29/12/2019

Gracia-Sancho J. **El sinusoide hepático en la vejez: caracterización de los mecanismos celulares fisiopatológicos para el desarrollo de nuevas estrategias terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS PI14/00029
Duration: 01/01/2015-31/12/2017

Gracia-Sancho J. **Exosomes in liver diseases.**
Sponsored by: CIBEREHD intramural competitive grant.
Duration: 01/11/2016 -31/12/2018

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Duration: 02/08/2016-01/08/2019

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Sponsored by: Instituto de Salud Carlos III (ISCIII). FIS PI14/00182
Duration: 01/01/2015-31/12/2018

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Sponsored by: Instituto de Salud Carlos III (ISCIII). PI3/00374
Duration: 01/01/2014-31/12/2017

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Bosch J. **Simvastatina como fármaco hepatoprotector.**
PhD student: Cintia Zimerman De Meireles

Gracia-Sancho J, Bosch J. **Disfunció microcirculatòria sinusoïdal hepàtica en la cirrosi i dany per isquèmia/reperfusió: mecanismes involucrats i noves dianes terapèutiques.**
PhD student: Sergi Guixé Muntet

García-Pagán JC, Gracia-Sancho J. **Mecanismes involucrats en la regulació de la resistència vascular intrahepàtica en la cirrosi: paper dels anticoagulants i antioxidants.**
PhD student: Marina Vilsaeca Barceló

3.7 Inflammatory bowel disease

LOCATION
CEK building floor 3

WEB
www.ibd-bcn.org

KEYWORDS
1. **Inflammatory bowel diseases**
2. **Crohn's disease**
3. **Ulcerative colitis**
4. **Cell therapy**
5. **Cross-sectional imaging**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	166.72	15	14	-
2016	229.49	20	17	2
2017	247.99	17	13	3

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CIBEREHD
AGAUR_SGR14

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STRATEGIC OBJECTIVES

This IDIBAPS research team has a translational orientation, aimed at generating knowledge in the area of inflammatory bowel diseases to provide a benefit to patients suffering from Crohn's disease or ulcerative colitis in the near future, with a special emphasis on the discovery of disease biomarkers, new molecular and cellular targets, as well as imaging techniques for diagnosis and monitoring.

MAIN LINES OF RESEARCH

1. Autologous hematopoietic stem cell transplantation in refractory Crohn's disease. Role of host, immune and intestinal microbiota related factors on the therapeutic response.

TEAM Julián Panés

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. Efficacy of mesenchymal stem cells for treatment of fistulizing Crohn's disease.

4. Development and optimization of intestinal epithelial stem cells production. Application of the technology for characterization of pathobiological aspects of inflammatory bowel diseases and vitro drug testiing.

5. Transcriptional analysis in IBD as a tool to understand the pathophysiology of IBD and to evaluate therapeutic responses.

7. Microbial antigen specific responses in the pathophysiology of Crohn's disease.

6. Optimization of cross sectional imaging techniques, for evaluation of the extent, severity and prognosis of the inflammatory lesions in Crohn's disease. Study permanent damage in ulcerative colitis.

7. Advanced endoscopic techniques for diagnosis and treatment of IBD.

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Originals / I.F.: 247.994

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9. López-García A, Rovira M, Jauregui-Amezaga A, Marín P, Barastegui R, Salas A, Ribas V, Feu F, Elizalde JI, Fernández-Avilés F, Martínez C, Gutiérrez G, Rosiñol L, Carreras E, Urbano A, Lozano M, Cid J, Suárez-Lledó M, Masamunt MC, Comas D, Giner A, Gallego M, Alfaro I, Ordás I, Panés J, Ricart E. **Autologous Hematopoietic Stem Cell Transplantation for Refractory Crohn's Disease: Efficacy in a Single-Centre Cohort.** *JOURNAL OF CROHNS AND COLITIS.* 11(10):1161-1168. I.F.: 5.813

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11. D'Haens G, Reinisch W, Colombel JF, Panes J, Ghosh S, Prantera C, Lindgren S, Hommes DW, Huang Z, Boice J, Huyck S, Cornillie F, ENCORE investigators. **Five-year Safety Data From ENCORE, a European Observational Safety Registry for Adults With Crohn's Disease Treated With Infliximab.** *JOURNAL OF CROHN'S AND COLITIS.* 11(6):680-689. I.F.: 5.813

12. Rubin DT, Dubinsky MC, Martino S, Hewett KA, Panés J. **Communication Between Physicians and Patients with Ulcerative Colitis: Reflections and Insights from a Qualitative Study of In-Office Patient-Physician Visits.** *INFLAMMATORY BOWEL DISEASES.* 23(4):494-501. I.F.: 4.525

13. Rimola, Jordi; Alvarez-Cofino, Almudena; Perez-Jeldres, Tamara; Ayuso, Carmen; Alfaro, Ignacio; Rodriguez, Sonia; Ricart, Elena; Ordas, Ingrid; Panes, Julian. **Comparison of three magnetic resonance enterography indices for grading activity in Crohn's disease.** *JOURNAL OF GASTROENTEROLOGY.* 52(5):585-593. I.F.: 4.493

14. Westera, Liset; van Viegen, Tanja; Jeyarajah, Jenny; Azad, Azar; Bilsborough, Janine; van den Brink, Gijs R.; Cremer, Jonathan; Danese, Silvio; D'Haens, Geert; Eckmann, Lars; Faubion, William; Filice, Melissa; Korf, Hannelie; McGovern, Dermot; Panes, Julian; Salas, Azucena; Sandborn, William J.; Silverberg, Mark S.; Smith, Michelle I.; Vermeire, Severine; Vetrano, Stefania; Shackelton, Lisa M.; Stitt, Larry; Jairath, Vipul; Levesque, Barrett G.; Spencer, David M.; Feagan, Brian G.; Casteele, Niels Vande. **Centrally Determined Standardization of Flow Cytometry Methods Reduces Interlaboratory Variation in a Prospective Multicenter Study.** *CLINICAL AND TRANSLATIONAL GASTROENTEROLOGY.* 8(11):e126. I.F.: 3.923

15. Panés J, Domènech E, Aguas Peris M, Nos P, Riestra S, Juliá de Páramo B, Cea-Calvo L, Romero C, Marín-Jiménez I. **Association between disease activity and quality of life in ulcerative colitis: Results from the CRONICA-UC study.** *JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY.* 32(11):1818-1824. I.F.: 3.452

16. Reinisch W, Jahnsen J, Schreiber S, Danese S, Panés J, Balsa A, Park W, Kim J, Lee JU, Yoo DH. **Evaluation of the Cross-reactivity of Antidrug Antibodies to CT-P13 and Infliximab Reference Product (Remicade): An Analysis Using Immunoassays Tagged with Both Agents.** *BIODRUGS.* 31(3):223-227. I.F.: 2.835

17. Fernández-Gutiérrez B., Perrotti P., Gisbert J., Domènech E., Fernández-Nebro A., Cañete J., Ferrándiz C., Tornero J., García-Sánchez V., Panés J., Fonseca E., Blanco F., Rodríguez-Moreno J., Carreira P., Julià A., Marsal S., Rodriguez-Rodriguez L., IMID Consortium. **Cardiovascular disease in immune-mediated inflammatory diseases: A cross-sectional analysis of 6 cohorts.** *MEDICINE (UNITED STATES).* 96(26):e7308. I.F.: 1.803

Review / I.F.: 46.966

1. Panes J, Jairath V, Levesque BG. **Advances in Use of Endoscopy, Radiology, and Biomarkers to Monitor Inflammatory Bowel Diseases.** *GASTROENTEROLOGY.* 152(2):362-373. I.F.: 18.392

2. Panés J, Rimola J. **Perianal fistulizing Crohn's disease: pathogenesis, diagnosis and therapy.** *NATURE REVIEWS GASTROENTEROLOGY AND HEPATOLOGY.* 14(11):652-664. I.F.: 13.678

3. Villanacci V, Baert F, Cornillie F, De Hertogh G, Panés J. **Challenges faced by cross-sectional imaging and histological endpoints in clinical trials.** *JOURNAL OF CROHN'S AND COLITIS.* 11(suppl_2):S586-S592. I.F.: 5.813

4. Jairath V, Levesque BG, Vande Casteele N, Khanna R, Mosli M, Hindryckx P, Travis S, Duijvenstein M, Rimola J, Panes J, D'Haens G, Sandborn WJ, Feagan BG. **Evolving concepts in Phase I and II Drug Development for Crohn's Disease.** *JOURNAL OF CROHN'S AND COLITIS.* 11(2):246-255. I.F.: 5.813

5. Panés J, Alfaro I. **New treatment strategies for ulcerative colitis.** *EXPERT REVIEW OF CLINICAL IMMUNOLOGY.* 13(10):963-973. I.F.: 3.270

Letters / I.F.: 78.219

1. Sandborn W., Su C., Panes J. **Tofacitinib as induction and maintenance therapy for ulcerative colitis.** *NEW ENGLAND JOURNAL OF MEDICINE.* 377(5):496-497. I.F.: 72.406

2. Lindsay J., Irving P., Mantzaris G., Panés J., López-Sanromán A., Katsanos K., Juillerat P., Maconi G., Lakatos P., Annese V., Armuzzi A., Bager P., Bettenworth D., Chauhan U., Ding N., Feakins R., Fiorino G., Gisbert J., Kierkus J., Levine A., Panes J., Peyrin-Biroulet L., Rieder F., Russell R., Siegmund B., Spinelli A., Sturm A., Turner D., Van Rheenen P., Vavricka S., Zagorowicz E., Högenauer C., Bossuyt P., Bogut A., Knudsen T., af Bjorkesten C., Molander P., Bourreille A., Koutroubakis J., Ellul P., Lindsay J., Irving P., Mantzaris G., Panés J., López-Sanromán A., Katsanos K.. **ECCO IBD curriculum.** *JOURNAL OF CROHNS AND COLITIS.* 11(9):1039-1043. I.F.: 5.813

Case Reports / I.F.: 1.401

1. Castro, Jesus; Cuatrecasas, Miriam; Balaguer, Francesc; Ricart, Elena; Pellise, Maria. **Serrated polyposis syndrome associated with long-standing inflammatory bowel disease.** *REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS.* 109(11):796-798. I.F.: 1.401

Clinical Guidelines / I.F.: 13.099

1. Vuitton L., Peyrin-Biroulet L., Colombel J., Pariente B., Pineton de Chambrun G., Walsh A., Panes J., Travis S., Mary J., Marteau P.**Defining endoscopic response and remission in ulcerative colitis clinical trials: an international consensus.** *ALIMENTARY PHARMACOLOGY AND THERAPEUTICS.* 45(6):801-813. I.F.: 7.286

2. Danese S., Fiorino G., Raine T., Ferrante M., Kemp K., Kierkus J., Lakatos P., Mantzaris G., van der Woude J., Panes J., Peyrin-Biroulet L. **ECCO Position statement on the use of biosimilars for inflammatory bowel disease-an update.** *JOURNAL OF CROHNS AND COLITIS.* 11(1):26-34. I.F.: 5.813

GRANTS FOR RESEARCH IN PROGRESS

Salas A. **Transplante autólogo de células madre hematopoyéticas en la enfermedad de crohn: factores moleculares, inmunes y microbiológicos implicados en el control de la enfermedad.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2015-66379-R
Duration: 01/01/2016 - 31/12/2018

Salas A. **New siRNA Nanotherapy for Inflammatory Bowel Diseases, targeting Janus kinase 3.**
Sponsored by: European Commission (H2020_NMBP16_17).
Duration: 01/01/2017-31/12/2020

DOCTORAL THESES

Panés J. **Diagnostic and therapeutic strategies in inflammatory bowel disease.**
PhD student: Orlando García-Bosch

Panés J. **Autologous hematopoyetic stem cell transplant in refractory Crohn's disease.**
PhD student: Alícia López García

3.8 Cholestasis and bone pathology

LOCATION
HCB building

KEYWORDS
1. **Primary biliary cholangitis**
2. **Primary sclerosing cholangitis**
3. **Autoimmune hepatitis**
4. **Osteoporosis**
5. **Bone metabolism**
6. **Pruritus**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	74.38	9	6	2
2016	41.48	7	6	1
2017	87.79	11	6	4

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NURSING STAFF
Pilar Sesé (HCP)

COLLABORATORS
Sílvia Ruiz (CIBER)

STRATEGIC OBJECTIVES

1. Epidemiology, natural history and treatment in cholestatic diseases
2. Natural history diagnosis, prognosis and treatment of autoimmune hepatitis
3. Phenotype and prognosis in primary sclerosing cholangitis
4. Itching of cholestasis.
5. Presentation forms of autoimmune hepatitis
6. Osteoporosis in cholestatic diseases
7. Osteoporosis in premenopausal women and men
8. Bone remodelling in liver transplantation
9. Management of vertebral fractures in osteoporosis
10. Rare bone diseases

TEAM Albert Parés and Núria Guañabens

MAIN LINES OF RESEARCH

1. Epidemiology, natural history and therapeutic response of chronic cholestatic disorders in adults.
2. Evaluation of the factors of treatment response, and new treatment regimens in patients withsuboptimal response to ursodeoxycholic acid.
3. Development of new prognostic scores in primary biliary cholangitis.
4. Pruritus in chronic cholestasis: Pathogenesis and treatment.
5. Pathogenesis of osteoporosis and fracture development in primary biliary cholangitis and other chronic cholestatic disorders.
6. Course and prognosis in primary sclerosing cholangitis.
7. Presentation, course and prognosis of autoimmune hepatitis.
8. Osteoporosis in premenopausal women and in males. Study of the clinical characteristics and mechanisms involved in the development of the disorder.
9. Osteoporosis in primary biliary cholangitis. Clinical and experimental evaluation.
10. Osteoporosis in liver transplantation.
11. Evaluation of bone remodelling regulators in the pathogenesis of osteoporosis.
12. Biomarkers in Paget disease.

RESEARCH GROUP **CHOLESTASIS**

GROUP LEADER
Albert Parés (HCB)

The research group consist of clinicians (hepatologists) who follow a large number of patients with autoimmune cholestatic diseases, basically primary biliary cholangitis, autoimmune hepatitis and primary sclerosing cholangitis.
The group actively participates in international research groups in these diseases and they contribute in the knowledge of the phenotype, natural history, diagnosis, prognosis and treatment of these diseases.
Close collaboration with the bone pathology group.

RESEARCH GROUP BONE METABOLIC DISEASE

GROUP LEADER
Núria Guañabens (HCB)

The research group consists of rheumatologists specialized in metabolic bone disease, a specialist in clinical analysis and a biologist who is dedicated specifically to studies in cell cultures.
The group is a world leader in bone pathology of liver diseases and liver transplantation, as well as in male osteoporosis and bone turnover markers. It has a close collaboration with the group of cholestasis.

PUBLICATIONS

Originals / I.F.: 87.789

1. Ji SG, Juran BD, Mucha S, Folseraas T, Jostins L, Melum E, Kumasaka N, Atkinson EJ, Schlicht EM, Liu JZ, Shah T, Gutierrez-Achury J, Boberg KM, Bergquist A, Vermeire S, Eksteen B, Durie PR, Farkkila M, Müller T, Schramm C, Sterneck M, Weismüller TJ, Gotthardt DN, Ellinghaus D, Braun F, Teufel A, Laudes M, Lieb W, Jacobs G, Beuers U, Weersma RK, Wijmenga C, Marschall HU, Milkiewicz P, Pares A, Kontula K, Chazouillères O, Invernizzi P, Goode E, Spiess K, Moore C, Sambrook J, Ouwehand WH, Roberts DJ, Danesh J, Floreani A, Gulamhusein AF, Eaton JE, Schreiber S, Coltescu C, Bowlus CL, Luketic VA, Odin JA, Chopra KB, Kowdley KV, Chalasani N, Manns MP, Srivastava B, Mells G, Sandford RN, Alexander G, Gaffney DJ, Chapman RW, Hirschfield GM, de Andrade M, Rushbrook SM, Franke A, Karlsen TH, Lazaridis KN, Anderson CA UK-PSC Consortium, International IBD Genetics Consortium, International PSC Study Group. **Genome-wide association study of primary sclerosing cholangitis identifies new risk loci and quantifies the genetic relationship with inflammatory bowel disease.** *NATURE GENETICS.* 49(2):269-273. I.F.: 27.959

2. Weismüller TJ, Trivedi PJ, Bergquist A, Imam M, Lenzen H, Ponsioen CY, Holm K, Gotthardt D, Färkkilä MA, Marschall HU, Thorburn D, Weersma RK, Fevery J, Mueller T, Chazouillères O, Schulze K, Lazaridis KN, Almer S, Pereira SP, Levy C, Mason A, Naess S, Bowlus CL, Floreani A, Halilbasic E, Yimam KK, Milkiewicz P, Beuers U, Huynh DK, Pares A, Manser CN, Dalekos GN, Eksteen B, Invernizzi P, Berg CP, Kirchner GI, Sarrazin C, Zimmer V, Fabris L, Braun F, Marzioni M, Juran BD, Said K, Rupp C, Jokelainen K, Benito de Valle M, Saffioti F, Cheung A, Trauner M, Schramm C, Chapman RW, Karlsen TH, Schrumpf E, Strassburg CP, Manns MP, Lindor KD, Hirschfield GM, Hansen BE, Boberg KM, International PSC Study Group. **Patient Age, Sex, and Inflammatory Bowel Disease Phenotype Associate With Course of Primary Sclerosing Cholangitis.** *GASTROENTEROLOGY.* 152(8):1975-1984. I.F.: 18.392

3. Floreani A., Mangini C., Reig A., Franceschet I., Cazzagon N., Perini L., Caballería L., Cocchio S., Baldo V., Parés A. **Thyroid Dysfunction in Primary Biliary Cholangitis: A Comparative Study at Two European Centers.** *AMERICAN JOURNAL OF GASTROENTEROLOGY.* 112(1):114-119. I.F.: 9.566

4. Efe C, Hagström H, Ytting H, Bhanji RA, Müller NF, Wang Q, Purnak T, Muratori L, Werner M, Marschall HU, Muratori P, Gunşar F, Klintman D, Parés A, Heurgué-Berlot A, Schiano TD, Cengiz M, May-Sien Tana M, Ma X, Montano-Loza AJ, Berg T, Verma S, Larsen FS, Ozaslan E, Heneghan MA, Yoshida EM, Wahlin S. **Efficacy and Safety of Mycophenolate Mofetil and Tacrolimus as Second-line Therapy for Patients with Autoimmune Hepatitis.** *CLINICAL GASTROENTEROLOGY AND HEPATOLOGY.* 15(12):1950-1956. I.F.: 7.398

5. Rodriguez AJ, Fink HA, Mirigian L, Guañabens N, Eastell R, Akesson K, Bauer DC, Ebeling PR. **Pain, quality of life and safety outcomes of kyphoplasty for vertebral compression fractures: report of a task force of the American Society for Bone and Mineral Research.** *JOURNAL OF BONE AND MINERAL RESEARCH.* 32(9):1935-1944. I.F.: 6.284

6. De Vries E., Färkkilä M., Milkiewicz P., Hov J., Eksteen B., Thorburn D., Chazouillères O., Pares A., Nygård S., Gilja O., Wunsch E., Invernizzi P., Carbone M., Bernuzzi F., Boberg K., Røsjø H., Rosenberg W., Beuers U., Ponsioen C., Karlsen T., Vesterhus M..

Enhanced liver fibrosis test predicts transplant-free survival in primary sclerosing cholangitis, a multi-centre study. *LIVER INTERNATIONAL.* 37(10):1554-1561. I.F.: 4.116

7. Gifre L., Ruiz-Gaspà S., Carrasco J., Portell E., Vidal J., Muxi A., Monegal A., Guañabens N., Peris P. **Effect of recent spinal cord injury on the OPG/RANKL system and its relationship with bone loss and the response to denosumab therapy.** *OSTEOPOROSIS INTERNATIONAL.* 28(9):2707-2715. I.F.: 3.591

8. Peris P, Filella X, Monegal A, Guañabens N, Foj L, Bonet M, Boquet D, Casado E, Cerdá D, Erra A, Gómez-Vaquero C, Martínez S, Montalá N, Pittarch C, Kanterewicz E, Sala M, Suris X, Carrasco JL, LabOscat Study Group. **Comparison of total, free and bioavailable 25-OH vitamin D determinations to evaluate its biological activity in healthy adults: the LabOscat study.** *OSTEOPOROSIS INTERNATIONAL.* 28(8):2457-2464. I.F.: 3.591

9. Peris P., Filella X., Monegal A., Guañabens N., Foj L., Bonet M., Boquet D., Casado E., Cerdá D., Erra A., Gómez-Vaquero C., Martínez S., Montalá N., Pittarch C., Kanterewicz E., Sala M., Suris X., Carrasco J.. **Concordance between direct and indirect measurements of free 25-OH vitamin D.** *CLINICA CHIMICA ACTA.* 475:169-171. I.F.: 2.873

10. Valduvieco I, Biete A, Moreno LA, Gallart X, Rovirosa A, Saez J, Plana C, Peris P. **Is anti-inflammatory radiotherapy an effective treatment in trochanteritis?** *BR J RADIOL.* 90(1069):20160520. I.F.: 2.050

11. Bolier R, de Vries ES, Parés A, Helder J, Kemper EM, Zwinderman K, Elferink RPO, Beuers U, Netherlands Association for the Study of the Liver (NASL) Cholestatic Liver Diseases Study Group. **Fibrates for the treatment of cholestatic itch (FITCH): study protocol for a randomized controlled trial.** *TRIALS.* 18(1):230. I.F.: 1.969

Review / I.F.: 9.640

1. Pares, Albert. **Novel Treatment Strategies for Primary Biliary Cholangitis.** *SEMINARS IN LIVER DISEASE.* 37(1):60-72. I.F.: 5.500

2. Tsourdi E, Langdahl B, Cohen-Solal M, Aubry-Rozier B, Eriksen EF, Guañabens N, Obermayer-Pietsch B, Ralston SH, Eastell R, Zillikens MC. **Discontinuation of Denosumab therapy for osteoporosis: A systematic review and position statement by ECTS.** *BONE.* 105:11-17. I.F.: 4.140

Letters / I.F.: 47.831

1. Pares, Albert. **An appealing new agent for treating cholestatic pruritus.** *LANCET.* 389(10074):1078-1080. I.F.: 47.831

Clinical Guidelines / I.F.: 3.591

1. Diez-Perez A., Naylor K., Abrahamsen B., Agnusdei D., Brandi M., Cooper C., Dennison E., Eriksen E., Gold D., Guañabens N., Hadji P., Hiligsmann M., Horne R., Josse R., Kanis J., Obermayer-Pietsch B., Prieto-Alhambra D., Reginster J., Rizzoli R., Silverman S., Zillikens M., Eastell R. **International Osteoporosis Foundation and European Calcified Tissue Society Working Group. Recommendations for the screening of adherence to oral bisphosphonates**. *OSTEOPOROSIS INTERNATIONAL.* 28(3):767-774. I.F.: 3.591

Consortium Publications / I.F.: 7.286

1. Liberal R., de Boer Y., Andrade R., Bouma G., Dalekos G., Floreani A., Gleeson D., Hirschfield G., Invernizzi P., Lenzi M., Lohse A., Macedo G., Milkiewicz P., Terziroli B., van Hoek B., Vierling J., Heneghan M., Pares A., Montano-Loza A., Granito A., Kremer A., Schramm C., Lammert C., Cancado E., Bjornsson E., Lammert F., Hirschflield G., Hofer H., Mackay I., Neuberger J., Drenth J., van Nieuwkerk C., Muratori L., Swain M., Zeniya M., Chazouilleres O., Gines P., Chapman R., Berg T., van Buuren H., Liberal R. **Expert clinical management of autoimmune hepatitis in the real world.** *ALIMENTARY PHARMACOLOGY AND THERAPEUTICS.* 45(5):723-732. I.F.: 7.286

GRANTS FOR RESEARCH IN PROGRESS

Parés A. **Prurito de la colestasis. Análisis metabólico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01448
Duration: 01/01/2013-30/06/2017

Parés A. **Development of antigen-specific T-regulatory cell-expanding nanomedicines for autoimmune diseases: Translational studies in human lymphocyte-engrafted hosts.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE14/00027
Duration: 01/01/2015-31/12/2017

Guañabens N. **Efectos de la bilirrubina y ácidos biliares sobre las células reguladoras del remodelado óseo. Estudio in vitro en células osteocitarias MLO-A5/MLO-Y4.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00478
Duration: 01/01/2015-31/12/2018

Parés A. **Efecto del bezafibrato sobre el prurito de la colestasis. Mecanismos patogénicos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00797
Duration: 01/01/2016-31/12/2018

3.9 Mitochondrial regulation of cell death and steatohepatitis

LOCATION
CEK building floor 4

KEYWORDS
1. **Cholesterol/sphingolipids**
2. **Mitochondrial death**
3. **Oxidative stress**
4. **Alcoholic and non-alcoholic steatohepatitis (ASH/NASH)**
5. **Lipid therapies**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	90.78	10	10	-
2016	62.32	8	7	1
2017	101.61	10	10	-

TEAM INVOLVED IN
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Laura Conde de la Rosa (CIBER)
Raquel Fucho (IIBB-CSIC)
Vicente Ribas (IIBB-CSIC)

PRE-DOCTORAL RESEARCHERS
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David Robles (IIBB-CSIC)
Estel Solsona (IIBB-CSIC)
Sandra Torres (IIBB-CSIC)

TECHNICIANS
Gemma Gay (IIBB-CSIC)
Susana Núñez (CIBER)
Jose Antonio Ramos (IIBB-CSIC)

STRATEGIC OBJECTIVES

The overall aim is to examine the cell biology of lipids and cholesterol trafficking in liver diseases and neurodegeneration. This includes the role of mitochondrial cholesterol and sphingolipids in steatohepatitis, liver cancer, liver fibrogenesis, hepatic ischemia/reperfusion injury, Alzheimer's disease and lysosomal storage disorders.

MAIN LINES OF RESEARCH

1. Sphingolipid and mitochondrial oxidative-stress regulation of cell death.
2. Mechanisms responsible for cholesterol transport to the mitochondria and role in NASH, hepatocellular carcinoma and Alzheimer's disease.
3. Translational research in nonalcoholic steatohepatitis (NASH): Development of NASH in a humanized mouse model to identify potential targets in human NASH.
4. Contribution of acid sphingomyelinase in acetaminophen induced acute liver failure.
5. Development of non-invasive diagnostic methods for diagnosis and prognosis in alcohol-induced liver disease.
6. Mitochondrial cholesterol and glycosphingolipids in liver fibrosis. Reciprocal regulation between HIF1a and StARD1 in steatohepatitis and hepatocellular carcinoma.
7. Establishment of a mouse model with a humanized liver to study ALD and NASH.

TEAM José Carlos Fernández-Checa

8. ER stress-mitochondrial cholesterol axis in obesity-associated insulin resistance and comorbidities

PUBLICATIONS

Originals / I.F.: 101.614

1. Perea L, Coll M, Sanjurjo L, Blaya D, Taghdouini AE, Rodrigo-Torres D, Altamirano J, Graupera I, Aguilar-Bravo B, Llopis M, Vallverdú J, Caballeria J, van Grunsven LA, Sarrias MR, Ginès P, Sancho-Bru P. **Pentraxin-3 Modulates LPS-induced Inflammatory Response and Attenuates Liver Injury.** *HEPATOLOGY.* 66(3):953-968. I.F.: 13.246

2. Bissonnette J, Altamirano J, Devue C, Roux O, Payancé A, Lebrec D, Bedossa P, Valla D, Durand F, Ait-Oufella H, Sancho-Bru P, Caballeria J, Ginès P, Boulanger CM, Bataller R, Rautou PE. **A Prospective study of the utility of plasma biomarkers to diagnose alcoholic hepatitis.** *HEPATOLOGY.* 66(2):555-563. I.F.: 13.246

3. Altamirano J, López-Pelayo H, Michelena J, Jones PD, Ortega L, Ginès P, Caballería J, Gual A, Bataller R, Lligoña A. **Alcohol abstinence in patients surviving an episode of alcoholic hepatitis: Prediction and impact on long-term survival.** *HEPATOLOGY.* 66(6):1842-1853. I.F.: 13.246

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5. Jang JE, Park HS, Yoo HJ, Baek IJ, Yoon JE, Ko MS, Kim AR, Kim HS, Lee SE, Kim SW, Kim SJ, Leem J, Kang YM, Jung MK, Pack CG, Kim CJ, Sung CO, Lee IK, Park JY, Fernández-Checa JC, Koh EH, Lee KU. **Protective role of endogenous plasmalogens against hepatic steatosis and steatohepatitis.** *HEPATOLOGY.* 66(2):416-431. I.F.: 13.246

6. Marin V, Poulsen K, Odena G, McMullen MR, Altamirano J, Sancho-Bru P, Tiribelli C, Caballeria J, Rosso N, Bataller R, Nagy LE. **Hepatocyte-derived macrophage migration inhibitory factor mediates alcohol-induced liver injury in mice and patients.** *JOURNAL OF HEPATOLOGY.* 67(5):1018-1025. I.F.: 12.486

7. Balboa E, Castro J, Pinochet MJ, Cancino GI, Matías N, José Sáez P, Martínez A, Álvarez AR, Garcia-Ruiz C, Fernandez-Checa JC, Zanlungo S. **MLN64 induces mitochondrial dysfunction associated with increased mitochondrial cholesterol content.** *REDOX BIOLOGY.* 12:274-284. I.F.: 6.337

8. Torres S, Matías N, Baulies A, Nuñez S, Alarcon-Vila C, Martinez L, Nuño N, Fernandez A, Caballeria J, Levade T, Gonzalez-Franquesa A, Garcia-Rovés P, Balboa E, Zanlungo S, Fabrías G, Casas J, Enrich C, Garcia-Ruiz C, Fernández-Checa JC. **Mitochondrial GSH replenishment as a potential therapeutic approach for Niemann Pick type C disease.** *REDOX BIOLOGY.* 11:60-72. I.F.: 6.337

9. Alvarez-Sola, Gloria; Uriarte, Iker; Latasa, Maria U.; Jimenez, Maddalen; Barcena-Varela, Marina; Santamaria, Eva; Urtasun, Raquel; Rodriguez-Ortigosa, Carlos; Prieto, Jesus; Corrales, Fernando J.; Baulies, Anna; Garcia-Ruiz, Carmen; Fernandez-Checa, Jose C.; Berraondo, Pedro; Fernandez-Barrena, Maite G.; Berasain, Carmen; Avila, Matias A. **Engineered fibroblast growth factor 19 protects from acetaminophen-induced liver injury and stimulates aged liver regeneration in mice.** *CELL DEATH DIS.* 8(10):3083. I.F.: 5.965

10. Cano A, Mariño Z, Millet O, Martínez-Arranz I, Navasa M, Falcón-Pérez JM, Pérez-Cormenzana M, Caballería J, Embade N, Forns X, Bosch J, Castro A, Mato JM. **A Metabolomics Signature Linked To Liver Fibrosis In The Serum Of Transplanted Hepatitis C Patients.** *SCIENTIFIC REPORTS.* 7(1):10497. I.F.: 4.259

Review / I.F.: 10.335

1. Arenas F., Garcia-Ruiz C., Fernandez-Checa J. **Intracellular cholesterol trafficking and impact in neurodegeneration.** *FRONTIERS IN MOLECULAR NEUROSCIENCE.* 10:382. I.F.: 5.076

2. Torres S., Balboa E., Zanlungo S., Enrich C., Garcia-Ruiz C., Fernandez-Checa J. **Lysosomal and mitochondrial liaisons in Niemann-Pick disease.** *FRONTIERS IN PHYSIOLOGY.* 8(NOV):982. I.F.: 4.134

3. Augustin S, Graupera I, Caballeria J, . **Non-alcoholic fatty liver disease: A poorly known pandemic.** *MEDICINA CLINICA.* 149(12):542-548. I.F.: 1.125

GRANTS FOR RESEARCH IN PROGRESS

Caballería J. **Análisis de la disfunción endotelial y miRNAs en el pronóstico de la hepatitis alcoholic.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01265
Duration: 01/01/2013-30/06/2017

Fernández-Checa J.C. **Regulation and contribution of HIF-1 and StARD1 to steatohepatitis and hepatocellular carcinoma.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2015-069944
Duration: 01/01/2016-31/12/2019

García-Ruiz C. **Colesterol mitocondrial libre y acetilación del gangliósido GD3 en esteatohepatitis y fibrosis Hepática.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2014-57674-R
Duration: 01/01/2015-31/12/2017

Ribas Serra V. **Papel de colesterol mitocondrial en carcinoma hepatocelular.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2015-735579-JIN
Duration: 01/01/2017-31/12/2019

DOCTORAL THESES

Fernández-Checa JC, García-Ruiz MC. **Functional and metabolic interplay between methionine metabolites, acid sphingomyelinase and phosphatidylcholine: Impact in steatohepatitis.**
PhD student: Cristina Alarcón Vila

García-Ruiz MC, Fernández-Checa JC. **Interacción cholesterol-gangliósido GD3 en fibrosis hepática.**
PhD student: Mª del Carmen Vallejo Valdivia

3.10 Liver transplantation and graft viability

LOCATION
CEK building floor 3

KEYWORDS
1. **Liver transplantation**
2. **Graft viability**
3. **Immunosuppression**
4. **Allograft tolerance**
5. **Hepatic ischemia-reperfusion injury**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	52.09	11	6	2
2016	106.38	22	14	3
2017	94.43	25	11	8

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STRATEGIC OBJECTIVES

Aloimmune response and immunosuppression. Operational Tolerance. Ischemic reperfussion injury. Evaluation of new ways of graft preservation. Ex-vivo perfusion devices.
Hepatitis C recurrence. Study of fibrosis regression after antiviral treatment.
Complications of immunosuppression.
Prevention and treatment of cardiovascular risk factors after liver transplantation.

MAIN LINES OF RESEARCH

1. Evaluation of the impact of alloreactivity in graft outcome. Diferent studies are ongoing aimed at investigating the role of different

TEAM Miquel Navasa

markers of the immunosuppressive balance and graft outcome after LT. A prospective, multicentre, European trial has been started to translate the results of the studies done by the group in operational tolerance into clinical practice.

2. In the field of organ retrieval, we are characterizing new targets based on adipocytokines modulation and investigating the protective effect of polyethilenglycol in the preservation solutions. We are conducting several studies evaluating ex-vivo perfusion devices.

3. Studies of liver fibrosis regression after antiviral treatment in liver transplant patients, have characterized the evolution of liver fibrosis in these patients

4. Prevention and treatment of cardiovascular risk factors after liver transplantation. Studies on cardiovascular risk factors in patients with liver transplantation are ongoing.

RESEARCH GROUP

PROTECTIVE STRATEGIES AGAINST HEPATIC ISCHEMIA-REPERFUSION INJURY

GROUP LEADER

Carmen Peralta (IDIBAPS)

The investigations led by Carmen Peralta are pioneers in the study of experimental surgical, technological and pharmacological strategies (in vivo pharmacological treatments, improvements in preservation solutions, ischemic preconditioning, etc.) that protect livers against damage induced by ischemia-reperfusion and increase the tolerance of steatotic livers and reduced-size liver grafts against the risk that show these liver types to damage and regenerative failure when they are submitted to transplantation or hepatic resections.

PUBLICATIONS

Originals / I.F.: 94.433

1. Guixé-Muntet S, de Mesquita FC, Vila S, Hernández-Gea V, Peralta C, García-Pagán JC, Bosch J, Gracia-Sancho J. **Cross-talk between autophagy and KLF2 determines endothelial cell phenotype and microvascular function in acute liver injury.** *J HEPATOL.* 66(1):86-94. I.F.: 12.486

2. Pascasio JM, Vinaixa C, Ferrer MT, Colmenero J, Rubin A, Castells L, Manzano ML, Lorente S, Testillano M, Xiol X, Molina E, González-Diéguez L, Otón E, Pascual S, Santos B, Herrero JI, Salcedo M, Montero JL, Sánchez-Antolín G, Narváez I, Nogueras F, Giráldez Á, Prieto M, Forns X, Londoño MC. **Clinical outcomes of patients undergoing antiviral therapy while awaiting liver transplantation.** *JOURNAL OF HEPATOLOGY.* 67(6):1168-1176. I.F.: 12.486

3. Pericàs JM, García-de-la-Mària C, Brunet M, Armero Y, García-González J, Casals G, Almela M, Quintana E, Falces C, Ninot S, Fuster D, Llopis J, Marco F, Moreno A, Miró JM, Hospital Clinic Endocarditis Study Group. **Early in vitro development of daptomycin non-susceptibility in high-level aminoglycoside-resistant Enterococcus faecalis predicts the efficacy of the combination of high-dose daptomycin plus ampicillin in an in vivo model of experimental endocarditis.** *J ANTIMICROB CHEMOTHER.* 72(6):1714-1722. I.F.: 5.071

4. Nicolás D, Ambrosioni J, Sued O, Brunet M, López-Diéguez M, Manzardo C, Agüero F, Tuset M, Plana M, Guardo AC, Mosquera MM, Muñoz-Fernández MÁ, Caballero M, Marcos MÁ, Gatell JM, de Lazzari E, Gallart T, Miró JM. **Cyclosporine A in addition to standard ART during primary HIV-1 infection: pilot randomized clinical trial.** *JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY.* 72(3):829-836. I.F.: 5.071

5. Jiménez-Castro M., Negrete-Sánchez E., Casillas-Ramírez A., Gulfo J., Álvarez-Mercado A., Cornide-Petronio M., Gracia-Sancho J., Rodés J., Peralta C. **The effect of cortisol in rat steatotic and non-steatotic liver transplantation from brain-dead donors.** *CLINICAL SCIENCE.* 131(8):733-746. I.F.: 4.936

6. Cornide-Petronio M., Bujaldon E., Mendes-Braz M., Avalos de León C., Jiménez-Castro M., Álvarez-Mercado A., Gracia-Sancho J., Rodés J., Peralta C. **The impact of cortisol in steatotic and non-steatotic liver surgery.** *JOURNAL OF CELLULAR AND MOLECULAR MEDICINE.* 21(10):2344-2358. I.F.: 4.499

7. Cano A, Mariño Z, Millet O, Martínez-Arranz I, Navasa M, Falcón-Pérez JM, Pérez-Cormenzana M, Caballería J, Embade N, Forns X, Bosch J, Castro A, Mato JM. **A Metabolomics Signature Linked To Liver Fibrosis In The Serum Of Transplanted Hepatitis C Patients.** *SCIENTIFIC REPORTS.* 7(1):10497. I.F.: 4.259

GROUP Carmen Peralta

8. Solà E, Sanchez-Cabús S, Rodriguez E, Elia C, Cela R, Moreira R, Pose E, Sánchez-Delgado J, Cañete N, Morales-Ruiz M, Campos F, Balust J, Guevara M, García-Valdecasas JC, Ginès P. **Effects of alfapump™ system on kidney and circulatory function in patients with cirrhosis and refractory ascites.** *LIVER TRANSPLANTATION.* 23(5):583-593. I.F.: 3.910

9. Agüero F, Forner A, Valdivieso A, Blanes M, Barcena R, Manzardo C, Rafecas A, Castells L, Abradelo M, Barrera-Baena P, González-Diéguez L, Salcedo M, Serrano T, Jiménez-Pérez M, Herrero JI, Gastaca M, Aguilera V, Fabregat J, Del Campo S, Bilbao I, Romero CJ, Moreno A, Rimola A, Miro JM, FIPSE Investigators. **Human immunodeficiency virus-infected liver transplant recipients with incidental hepatocellular carcinoma: A prospective multicenter nationwide cohort study.** *LIVER TRANSPL.* 23(5):645-651. I.F.: 3.910

10. Fernández Carrillo C, Crespo G, de la Revilla J, Castells L, Buti M, Montero JL, Fábrega E, Fernández I, Serrano-Millán C, Hernández V, Calleja JL, Londoño MC. **Successful Continuation of HCV Treatment After Liver Transplantation.** *TRANSPLANTATION.* 101(5):1009-1012. I.F.: 3.678

11. Millán O, Budde K, Sommerer C, Aliart I, Rissling O, Bardaji B, Matz M, Zeier M, Silva I, Guirado L, Brunet M. **Urinary miR-155-5p and CXCL10 as prognostic and predictive biomarkers of rejection, graft outcome and treatment response in kidney transplantation.** *BRITISH JOURNAL OF CLINICAL PHARMACOLOGY.* 83(12):2636-2650. I.F.: 3.493

12. Soto M; Sampietro-Colom L; Lasalvia L; Mira A; Jimenez W; Navasa M. **Cost-effectiveness of enhanced liver fibrosis test to assess liver fibrosis in chronic hepatitis C virus and alcoholic liver disease patients.** *WORLD JOURNAL OF GASTROENTEROLOGY.* 23(17):3163-3173. I.F.: 3.365

13. Zaouali M., Panisello-Roselló A., Lopez A., Benítez C., Folch-Puy E., García-Gil A., Carbonell T., Adam R., Roselló-Catafau J. **Relevance of proteolysis and proteasome activation in fatty liver graft preservation: An Institut Georges Lopez-1 vs University of Wisconsin appraisal.** *WORLD JOURNAL OF GASTROENTEROLOGY.* 23(23):4211-4221. I.F.: 3.365

14. Nacif L., Hessheimer A., Gómez S., Montironi C., Fondevila C. **Infiltrative xanthogranulomatous cholecystitis mimicking aggressive gallbladder carcinoma: A diagnostic and therapeutic dilemma.** *WORLD JOURNAL OF GASTROENTEROLOGY.* 23(48):8671-8678. I.F.: 3.365

15. Panisello-Roselló A., Verde E., Zaouali M., Flores M., Alva N., Lopez A., Folch-Puy E., Carbonell T., Hotter G., Adam R., Roselló-Catafau J. **The relevance of the UPS in fatty liver graft preservation: A new approach for IGL-1 and HTK solutions.** *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES.* 18(11):2287. I.F.: 3.226

16. Vidal O., Saavedra-Perez D., Valentini M., Astudillo E., Fernández-Cruz L., García-Valdecasas J. **Surgical outcomes of total thyroidectomy using the LigaSure™ Small Jaw versus LigaSure Precise™: A retrospective study of 2000 consecutive patients.** *INTERNATIONAL JOURNAL OF SURGERY (LONDON, ENGLAND).* 37( ):8-12. I.F.: 2.211

17. Molina V, Sampson J, Ferrer J, Díaz A, Ayuso JR, Sánchez-Cabús S, Fuster J, García-Valdecasas JC. **Surgical treatment of perihilar cholangiocarcinoma: early results of en bloc portal vein resection.** *LANGENBECKS ARCHIVES OF SURGERY.* 402(1):95-104. I.F.: 2.203

18. Reyes A, Marti J, Marfà S, Jiménez W, Reichenbach V, Pelegrina A, Fondevila C, Garcia Valdecasas JC, Fuster J. **Prognostic prediction by liver tissue proteomic profiling in patients with colorectal liver metastases.** *FUTURE ONCOLOGY.* 13(10):875-882. I.F.: 2.131

19. Rodríguez-Perálvarez M, De Luca L, Crespo G, Rubin Á, Marín S, Benlloch S, Colmenero J, Berenguer M, Navasa M, Tsochatzis E, De la Mata M. **An objective definition for clinical suspicion of T-cell mediated rejection after liver transplantation.** *CLINICAL TRANSPLANTATION.* 31(7):e13005. I.F.: 1.865

20. Ruiz P, Sastre L, Crespo G, Blasi A, Colmenero J, García-Valdecasas JC, Navasa M. **Increased risk of portal vein thrombosis in patients with autoimmune hepatitis on the liver transplantation waiting list.** *CLINICAL TRANSPLANTATION.* 31(7):e13001. I.F.: 1.865

21. Martínez C, Millán O, Rovira M, Fernández-Avilés F, López A, Suárez-Lledó M, Carreras E, Urbano-Ispízua Á, Brunet M. **Pharmacodynamics of T cell function for monitoring pharmacologic immunosuppression after allogeneic hematopoietic stem cell transplantation.** *INTERNATIONAL JOURNAL OF HEMATOLOGY.* 105(4):497-505. I.F.: 1.610

22. Pelegrina A, Martí J, Miquel R, Ferrer J, Hernández-Gea V, Diaz A, Nadal C, García-Valdecasas JC, Fuster J. **Changes of liver hemodynamic and elastography parameters in patients with colorectal liver metastases receiving preoperative chemotherapy: "a note of caution".** *WORLD JOURNAL OF SURGICAL ONCOLOGY.* 15(1):224. I.F.: 1.600

23. Ferrer J., Molina V., Rull R., López-Boado M., Sánchez S., García R., Ricart M., Ventura-Aguiar P., García-Criado Á., Esmatjes E., Fuster J., Garcia-Valdecasas J. **Pancreas transplantation: Advantages of a retroperitoneal graft position.** *CIRUGIA ESPANOLA.* 95(9):513-520. I.F.: 1.276

24. Calatayud D., Sánchez Cabús S., Sampson J., Resendiz A., Molina V., Fondevila C., Fuster J., García-Valdecasas J. **Hepatic resection: a safe and effective surgery.** *CIRUGIA ESPANOLA.* 95(8):437-446. I.F.: 1.276

25. Sánchez Cabús S., Estalella L., Pavel M., Calatayud D., Molina V., Ferrer J., Fondevila C., Fuster J., García-Valdecasas J. **Analysis of the long-term results of living donor liver transplantation in adults.** *CIRUGIA ESPANOLA.* 95(6):313-320. I.F.: 1.276

Review / I.F.: 4.349

1. Hessheimer, Amelia J.; Fondevila, Constantino. **Liver perfusion devices: how close are we to widespread application?** *CURRENT OPINION IN ORGAN TRANSPLANTATION.* 22(2):105-111. I.F.: 3.073

2. Hessheimer A., Nacif L., Flores Villalba E., Fondevila C. **Liver transplantation for acute liver failure.** *CIRUGIA ESPANOLA.* 95(4):181-189. I.F.: 1.276

Letters / I.F.: 2.131

1. Reyes A, Marti J, Marfa S, Jimenez W, Reichenbach V, Pelegrina A, Fondevila C, Valdecasas JC, Fuster J. **Letter in reply: Prognostic prediction by liver tissue proteomic profiling in patients with colorectal liver metastases.** *FUTURE ONCOLOGY.* 13(3):1135-1136. I.F.: 2.131

Editorial / I.F.: 12.486

1. Colmenero J; Sancho-Bru P. **Mesenchymal stromal cells for immunomodulatory cell therapy in liver transplantation: One step at a time.** *JOURNAL OF HEPATOLOGY.* 67(1):7-9. I.F.: 12.486

Consortium Publications / I.F.: 9.594

1. Pericàs JM, Messina JA, Garcia-de-la-Mària C, Park L, Sharma-Kuinkel BK, Marco F, Wray D, Kanafani ZA, Carugati M, Durante-Mangoni E, Tattevin P, Chu VH, Moreno A, Fowler VG, Miró JM, International Collaboration on Endocarditis Microbiology Investigators. **Influence of Vancomycin Minimum Inhibitory Concentration on the Outcome of Methicillin-Susceptible Staphylococcus aureus Left-Sided Infective Endocarditis Treated with Anti-staphylococcal Beta-Lactam Antibiotics; a Prospective Cohort Study by the International Collaboration on Endocarditis.** *CLIN MICROBIOL INFECT.* 23(8):544-549. I.F.: 5.292

2. Castañeda X, García-de-la-Mària C, Gasch O, Pericas JM, Armero Y, Soy D, García-González J, Falces C, Ninot S, Almela M, Ambrosioni J, Quintana E, Vidal B, Fuster D, Llopis J, Soto S, Moreno A, Marco F, Miró JM, Hospital Clinic Endocarditis Study Group. **AUC/MIC Pharmacodynamic Target Is Not a Good Predictor of Vancomycin Efficacy in Methicillin-Resistant Staphylococcus aureus Experimental Endocarditis.** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY.* 61(6):e02486. I.F.: 4.302

GRANTS FOR RESEARCH IN PROGRESS

Brunet M. **Evaluación del impacto de la aloreactividad en la evolución del injerto y de la reversibilidad de la fibrosis tras el tratamiento de la hepatitis C post-transplante hepático.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/01055
Duration: 01/01/2015-30/06/2019

Fondevila C. **Evaluación de la regeneración hepatocelular tras hepatectomía mayor en un modelo clínico y otro experimental. Utilidad del tratamiento con somatostanina y debutamina en un modelo porcino de cirugía hepática extrema.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/01092
Duration: 01/01/2016-31/12/2018

Garcia-Valdecasas J.C. **Consortium on organ preservation in Europe (COPE).**
Sponsored by: European Commission (FP7_HEALTH_IN1-2012) 305934
Duration: 01/09/2013-30/06/2018

García-Valdecasas JC. **Evaluation of the feasibilty of normothermic regional perfusion followed by ex-vivo normothermic machine perfusion in Type II DCD (Donation after Cardiac Death)**
Liver Transplants.
Sponsored by: Fundació La Caixa.
Duration: 01/05/2016-30/04/2018

Manyalich M. **Evolución psicosocial del donante vivo renal. Estudio de cohortes.**
Sponsored by: Instituto de Salud Carlos III. PI14/00693
Duration: 01/01/2015-30/06/2019

Manyalich M. **The Effect of Differing Kidney Disease Treatment Modalities and Organ Donation and Transplantation Practices on Health Expenditure and Patient Outcomes.**
Sponsored by: European Commission_2016. 739495
Duration: 01/01/2017-31/12/2019

Navasa M. **Evaluación del impacto de la aloreactividad en la evolución del injerto y de la reversibilidad de la fibrosis tras el tratamiento de la hepatitis C post-trasplante hepático.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI41/01055
Duration: 01/01/2015-31/12/2017

Peralta C. **Nuevas tecnologías de preservación y transporte de órganos abdominales – Proyecto ALBA**
Sponsored by: Ministerio de Economía y Competitividad. Retos-Colaboración 2015. 2015-3859-1
Duration: 01/03/2015-30/06/2018

Peralta C. **La hormona de crecimiento en el trasplante de injertos hepáticos esteatósicos y no esteatósicos procedentes de donantes con muerte cerebral.**
Sponsored by: Ministerio de Economía y Competitividad. SAF15-64857-R
Duration: 01/01/2016-31/12/2018

3.11 Gastrointestinal and pancreatic oncology

LOCATION
CEK building floor 4

KEYWORDS
1. **Colorectal cancer**
2. **Pancreatic cancer**
3. **Genetics**
4. **Inherited disorders**
5. **Susceptibility to cancer**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	331.26	49	38	2
2016	295.29	44	39	3
2017	261.86	49	32	10

TEAM INVOLVED IN
CIBEREHD
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AGAUR_SGR14
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Teresa Ocaña (HCB)
Àngels Pozo (HCB)
Cristina Rodriguez (FCRB)
Anna Serradesanferm (HCB)

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
GENETIC PREDISPOSITION TO COLORECTAL CANCER

GROUP LEADER
Sergi Castellví-Bel (IDIBAPS)

The "Genetic predisposition to colorectal gastrointestinal cancer" is a research group led by Sergi Castellví-Bel has the main objective of identifying genetic variants involved in germline susceptibility to colorectal cancer (CRC) and gastric cancer (GC), and to explore its application in the clinical management of patients.

The main research lines are:

1. Next generation sequencing: new predisposition genes for CRC and GC
2. Genetic association studies: new genetic variants for CRC and advanced adenoma risk
3. State-of-the-art Fine mapping and functionality studies for genetic variants using gene editing in cellular models
4. Genotype-phenotype correlation of the genetic variants with clinical characteristics of patients, including their value in establishing prognosis

RESEARCH GROUP
GENE THERAPY AND CANCER

GROUP LEADER
Cristina Fillat (IDIBAPS)

Our group main research interests focus on pancreatic cancer and in the development of gene therapy strategies for rare diseases. Main research lines:

1. Understand the contribution of specific molecules to pancreatic carcinogenesis;
2. Rationally design and preclinically evaluate therapeutic strategies based on engineered

GROUP Cristina Fillat

GROUP Sergi Castellví-Bel

oncolytic adenovirus. Understand the host contribution to the oncolytic virus effect and identify biological interfaces between viruses and tumors to maximize effective therapeutic viruses and/or chemical-biological combination therapies.

3. Develop gene therapy and genome editing strategies for metabolic defects

PUBLICATIONS

Originals / I.F.: 261.864

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2. Navarrete A., Momblán D., Almenara R., Lacy A.**Giant Gastric Gastrointestinal Stromal Tumor (GIST)**. *JOURNAL OF GASTROINTESTINAL SURGERY.* 21(1):202-204. I.F.: 2.963

3. Bravo R., Trépanier J., Arroyave M., Fernández-Hevia M., Pigazzi A., Lacy A. **Combined transanal total mesorectal excision (taTME) with laparoscopic instruments and abdominal robotic surgery in rectal cancer.** *TECHNIQUES IN COLOPROCTOLOGY.* 21(3):233-235. I.F.: 2.342

4. Castro, Jesus; Cuatrecasas, Miriam; Balaguer, Francesc; Ricart, Elena; Pellise, Maria. **Serrated polyposis syndrome associated with long-standing inflammatory bowel disease.** *REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS.* 109(11):796-798. I.F.: 1.401

5. Navarrete A., Almenara R., Momblán D., Lacy A. **Laparoscopic resection of a paraganglioma in the organ of Zuckerkand123-metaiodobenzylguanidin e guided by gamma probe.** *CIRUGIA ESPANOLA.* 95(4):239-241. I.F.: 1.276

Clinical Guidelines / I.F.: 12.214

1. Polkowski, Marcin; Jenssen, Christian; Kaye, Philip; Carrara, Silvia; Deprez, Pierre; Gines, Angels; Fernandez-Esparrach, Gloria; Eisendrath, Pierre; Aithal, Guruprasad P.; Arcidiacono, Paolo; Barthet, Marc; Bastos, Pedro; Fornelli, Adele; Napoleon, Bertrand; Iglesias-Garcia, Julio; Seicean, Andrada; Larghi, Alberto; Hassan, Cesare; van Hooft, Jeanin E.; Dumonceau, Jean-Marc. **Technical aspects of endoscopic ultrasound (EUS)-guided sampling in gastroenterology: European Society of Gastrointestinal Endoscopy (ESGE) Technical Guideline March 2017.** *ENDOSCOPY.* 49(10):989-1006. I.F.: 6.107

2. Dumonceau JM, Deprez PH, Jenssen C, Iglesias-Garcia J, Larghi A, Vanbiervliet G, Aithal GP, Arcidiacono PG, Bastos P, Carrara S, Czakó L, Fernández-Esparrach G, Fockens P, Ginès À, Havre RF, Hassan C, Vilmann P, van Hooft JE, Polkowski M. **Indications, results, and clinical impact of endoscopic ultrasound (EUS)-guided sampling in gastroenterology: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline - Updated January 2017.** *ENDOSCOPY.* 49:695-714. I.F.: 6.107

Consortium Publications / I.F.: 16.474

1. Penna, Marta; Hompes, Roel; Arnold, Steve; Wynn, Greg; Austin, Ralph; Warusavitarne, Janindra; Moran, Brendan; Hanna, George B.; Mortensen, Neil J.; Tekkis, Paris P.;TaTME Registry Collaborative. Transanal Total Mesorectal Excision International Registry Results of the First 720 Cases. ANNALS OF SURGERY. 266(1):111-117. I.F.: 8.980

2. Edwin, Bjorn; Sahakyan, Mushegh A.; Abu Hilal, Mohammad; Besselink, Marc G.; Braga, Marco; Fabre, Jean-Michel; Fernandez-Cruz, Laureano; Gayet, Brice; Kim, Song Cheol; Khatkov, Igor E.; EAES Consensus Conference. **Laparoscopic surgery for pancreatic neoplasms: the European association for endoscopic surgery clinical consensus conference.** *SURGICAL ENDOSCOPY.* 31(5):2023-2041. I.F.: 3.747

3. Deijen, Charlotte L.; Vasmel, Jeanine E.; de Lange-de Klerk, Elly S. M.; Cuesta, Miguel A.; Coene, Peter-Paul L. O.; Lange, Johan F.; Meijerink, W. J. H. Jeroen; Jakimowicz, Jack J.; Jeekel, Johannes; Kazemier, Geert; Janssen, Ignace M. C.; Pahlman, Lars; Haglind, Eva; Bonjer, H. Jaap; COLOR COlon Canc Laparoscopic Open. **Ten-year outcomes of a randomised trial of laparoscopic versus open surgery for colon cancer.** *SURGICAL ENDOSCOPY.* 31(6):2607-2615. I.F.: 3.747

GRANTS FOR RESEARCH IN PROGRESS

Balaguer F. **Desarrollo de biomarcadores de metilación en suero para la detección precoz de neoplasia colorrectal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00719
Duration: 01/01/2014-30/06/2018

Balaguer F. **Análisis del defecto de campo mediado por metilación aberrante del ADN en el síndrome de poliposis serrada.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00766
Duration: 01/01/2017-31/12/2019

Camps J. **Implications of copy number variants of the genome in the etiology and progression of colorectal cancer.**
Sponsored by: European Commission (FP7_PEOPLE_2012). 321937
Duration: 01/12/2013-30/11/2017

Camps J. **Implications of genomic copy number variants in the etiology, progression, and response to treatment of colorectal cancer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). CP13/00160
Duration: 01/02/2014-31/01/2017

Camps J. **Implicaciones de la heterogeneidad intratumoral en la respuesta al tratamiento de quimio-radioterapia neoadyuvante en pacientes con cáncer de recto.**
Sponsored by: Instituto de Salud Carlos III

(ISCIII). PI14/00783
Duration: 01/01/2015-31/12/2018

Castells A. **Identificación de nuevos biomarcadores para la prevención del cáncer colorrectal.**
Sponsored by: Asociación Española Contra el Cáncer (AECC_2013). GCB13131592CAST
Duration: 01/10/2013-30/09/2019

Castells A. **Diseño y puesta a punto de kits para el diagnóstico del cáncer de colon en sangre basados en plataformas multiplex.**
Sponsored by: Ministerio de Economía y Competitividad (RetosColaboración_2014). RTC-2014-1518-1
Duration: 28/01/2014-19/05/2017

Castells A. **Detección de miRNA en heces con nueva estrategia de cribado del cancer colorrectal: identificación y validación en población de riesgo medio.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2014-54453-R
Duration: 01/01/2015-31/12/2018

Castells A. **Desarollo de un kit de diagnóstico precoz de cáncer colorrectal mediante método no invsivo en plasma basado en la expresión de miRNAs.**
Sponsored by: Ministerio de Economia y Competitividad (RetosColaboración_2015). RTC-2015-3850-1
Duration: 25/05/2015-31/12/2018

Castellví-Bel S. **Identificación de genes de predisposición germinal en un subgrupo de cáncer colorrectal: el síndrome de poliposis serrada en el punto de mira.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00173
Duration: 01/01/2015-31/12/2017

Castellví-Bel S. **Cooperation studies on inherited susceptibility to colorectal cancer.**
Sponsored by: European Commission (COST_2012). OC-2012-1-11711
Duration: 01/06/2013-29/09/2017

Fernandez-Esparrach G. **Intelligent in-Vivo Endoscopic Diagnosis and Intervention Support Systems (iVENDIS).**
Sponsored by: Ministerio de Economía y Competitividad. DPI2015-65286-R. RETOS 2015.
Duration: 01/01/2016-31/12/2017

Fillat C. **Increasing the efficacy of oncolytic adenovirus through replication enhancement strategies in pancreatic tumors.**
Sponsored by: Ministerio de Economía y Competitividad. BIO2014-57716-C2-2-R
Duration: 01/01/2015-30/06/2018

Fillat C. **Recubrimiento polimérico multicapa de adenovirus oncolíticos para la regulación de su tropismo en el tratamiento del adenocarcinoma de páncreas.**
Sponsored by: Ministerio de Economía y Competitividad (RetosColaboración_2015). RTC-2015-4189-1
Duration: 01/09/2015-31/03/2018

Fillat C. **Desarrollo de una estrategia de terapia génica para el tratamiento de la acidúria glutárica tipo I y valoración de la eficacia de edición genómica in vivo.**
Sponsored by: CIBER Enfermedades Raras. ACCI-2016-19
Duration: 01/01/2017-31/12/2018

Pellisé M. **Impacto de las técnicas de endoscopia avanzada y de los miRNAs en el diagnóstico y manejo de la neoplasia colorrectal asociada a la enfermedad inflamatoria intestinal de larga evolución.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01481
Duration: 01/01/2013-30/06/2017

Vaquero E.C. **Regulación mediada por ZEB1 del estroma tumoral: Implicaciones en el desarrollo y la quioresistencia en el cáncer de páncreas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01430
Duration: 01/01/2013-30/06/2017

DOCTORAL THESES

Pellisé M, Camps J. **New insignhts into the colorectal carciongenesis: from early precursor lesions to the roele of aneuploidy.**
Phd student: Isabel Quintanilla

Camps J, Miró R, Ponsa I. **La disomia uniparental adquirida en el càncer colorectal.**
Phd student: Keyvan Torabi Asensio

Castells A, Molina R. **Estimació del risc de neoplàsia colorectal avançada a partir de la quantificació de l'hemoglobina fecal en el cribratge del càncer de còlon i recte.**
Phd student: Josep Maria Augé Fradera

Castells A, Caballeria L. **Efectividad de una alerta en la historia clínica informatizada de atención primaria para aumentar la participación en un programa poblacional de cribado de cárcer colorectal.**
Phd student: Carolina Guiriguet Capdevila

Fernández Esparrach G, Ginés MA. **Pólipos gástricos: tipos, tratamiento endoscópico y complicaciones asociadas.**
Phd student: Lidia Argüello Viudez

Fillat C. **Adenovirus oncoselectius pel tractament de càncer de pàncrees. Combinació d'estratègies de direccionament a tumor i bioselecció de microRNAs potenciadors de l'activitat adenoviral.**
PhD student: Maria Rovira Rigau

Lozano J, Gironella M**. Design of Bioinformatic Tools for Integrative Analysis of microRNA-mRNA interactome applied to digestive cancers.**
Phd student: Maria Vila Casadesús

Postigo A, Castells A. **Role of ZEB1 in tumor progression: regulation of cell invasion and senescence.**
Phd student: Oriol de Barrios Barri

3.12 Inherited metabolic diseases

LOCATION
HCB building

KEYWORDS
1. **Mitochondrial diseases**
2. **Mitochondrial cofactors**
3. **Lysosomal diseases**
4. **Inherited metabolic diseases**
5. **Inborn errors of metabolism**
6. **Organic acidurias**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	25.92	7	2	5
2016	51.81	11	7	4
2017	12.73	3	3	-

TEAM INVOLVED IN
CIBERER
AGAUR_SGR14

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COLLABORATORS
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José Luís Marín (HCB)

STRATEGIC OBJECTIVES

The strategic objective of our group is to investigate the genetic and biochemical bases, as well as the physiopathological mechanisms, of a group of rare diseases called "inherited metabolic diseases or inborn errors of metabolism". 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:

1. Identification of genes responsible for Mendelian disorders, particularly in patients with defects of the mitochondrial energy metabolism. These patients are preselected on the basis of their clinical and biochemical characteristics. Within this line we aim to identify new defects to generate knowledge that could be implemented to the diagnosis and to the design of therapeutic options.

2. Physiopathology of the identified diseases. In addition to the classical methodologies we aim to introduce the study of lipidomics, organelle-organelle interaction, mitochondrial dynamics, mitochondrial supercomplexes and high resolution respirometry.

TEAM Antonia Ribes

3. Therapeutic approaches. This line involves the testing of chemical and peptide libraries. Selection has been made of disease-causing missense mutations previously identified by our group in a wide range of diseases. We are particularly interested in compounds with chaperone action and compounds capable of inducing lysosomal exocytosis and autophagy promotion.

PUBLICATIONS

Originals / I.F.: 12.734

1. Matalonga L, Bravo M, Serra-Peinado C, García-Pelegrí E, Ugarteburu O, Vidal S, Llambrich M, Quintana E, Fuster-Jorge P, Gonzalez-Bravo MN, Beltran S, Dopazo J, Garcia-Garcia F, Foulquier F, Matthijs G, Mills P, Ribes A, Egea G, Briones P, Tort F, Girós M. **Mutations in TRAPPC11 are associated with a congenital disorder of glycosylation.** *HUM MUTAT.* 38(2):148-151. I.F.: 4.601

2. Yubero D, Adin A, Montero R, Jou C, Jiménez-Mallebrera C, García-Cazorla A, Nascimento A, O'Callaghan M, Montoya J, Gort L, Navas P, Ribes A, Ugarte M, Artuch R. **A statistical algorithm showing coenzyme Q10 and citrate synthase as biomarkers for mitochondrial respiratory chain enzyme activities.** *SCIENTIFIC REPORTS.* 6(1):15. I.F.: 4.259

3. Perez-Cerda C; Girõs M; Serrano M; Ecay M; Gort L; Pérez Dueñas B; Medrano C; García-Alix A; Artuch R; Briones P; Perez B. **A Population-Based Study on Congenital Disorders of Protein N- and Combined with O-Glycosylation Experience in Clinical and Genetic Diagnosis.** *JOURNAL OF PEDIATRICS.* 183:170-177.e1. I.F.: 3.874

Review / I.F.: 3.970

1. Matalonga L, Gort L, Ribes A. **Small molecules as therapeutic agents for inborn errors of metabolism.** *JOURNAL OF INHERITED METABOLIC DISEASE.* 40(2):177-193. I.F.: 3.970

Consortium Publications / I.F.: 3.507

1. Serrano N; De Diego V; Cuadras D; Martinez Monseny A; Velázquez-Fragua R; López L; Felipe A; Gutiérrez-Solana L; MacAya A; Pérez-Dueñas B; Serrano M; Miranda M; Carratalá F; Poo M; Robles B; Couce M; Girõs M; Gort L; Montero R; Artuch R; Perez-Cerda C; Muchart J; Perez B. **A quantitative assessment of the evolution of cerebellar syndrome in children with phosphomannomutase-deficiency (PMM2-CDG).** *ORPHANET JOURNAL OF RARE DISEASES.* 12(1):155. I.F.: 3.507

GRANTS FOR RESEARCH IN PROGRESS

Coll MJ. A**n EU rare diseases registry for Niemann-Pick Disease type A, B and C.**
Sponsored by: European Commission (SANCO_2012). 55785
Duration: 01/04/2017-17/01/2018

Ribes A. **Identificación y caracterización de nuevos defectos del metabolismo energético mitocondrial asociados a aciduria 3-metilglutacónica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI 16/01048
Duration: 01/01/ 2017-31/12/2019

Ribes A. **Implementació de la medicina personalitzada basada en la genómica en malalties minoritaries neurologiques no diagnosticades.**
Sponsored by: Generalitat de Catalunya (PERIS_2016). SLT002/16/00174 94981
Duration: 01/01/ 2017-31/12/2019

DOCTORAL THESES

Ribes A. **Identificació de mutacions en gens implicats en el metabolisme de l'àcid lipòic en l'acidúrica 3- metilglutacònica.**
PhD student: Xènia Ferrer Cortès

3.13 Genomic programming of beta cells and diabetes

LOCATION
CEK building floor 5

WEB
www.imperial.ac.uk/medicine/beta-cell-genome-regulation-laboratory

KEYWORDS
1. **Epigenetics**
2. **Mouse genetic analysis of beta cells regulation**
3. **Genomic regulation of pancreatic beta cells**
4. **Pancreas regeneration**
5. **Type 2 diabetes**
6. **Molecular pathophysiology**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	161.05	9	9	-
2016	16.03	2	2	-
2017	29.65	3	3	-

TEAM INVOLVED IN
CIBERDEM
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AWARDS
Albert Renold Prize
Institution: European Foundation for the Study of Diabetes (EFSD)
Awardee/s: Jorge Ferrer

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STRATEGIC OBJECTIVES

A study has been published that defines the function of long non-coding RNAs (lncRNAs) in genetic networks involved in type 2 diabetes

MAIN LINES OF RESEARCH

1. Dissection of the genetic mechanisms underlying the pathogenesis of human diabetes.
2. Understanding the epigenome of pancreatic beta cells and its implications for the development, plasticity and growth of beta cells.
3. Mouse genetic analysis of beta-cell gene regulation.
4. The regeneration of pancreatic beta cells.

PUBLICATIONS

Originals / I.F.: 29.654

1. Akerman I., Tu Z., Beucher A., Rolando D., Sauty-Colace C., Benazra M., Nakic N., Yang J., Wang H., Pasquali L., Moran I., Garcia-Hurtado J., Castro N., Gonzalez-Franco R., Stewart A., Bonner C., Piemonti L., Berney T., Groop L., Kerr-Conte J., Pattou F., Argmann C., Schadt E., Ravassard P., Ferrer J. **Human Pancreatic β Cell lncRNAs Control Cell-Specific Regulatory Networks.** *CELL METABOLISM.* 25(2):400-411. I.F.: 18.164

TEAM. Jorge Ferrer

2. Mercader JM; Liao RG; Bell AD; Dymek Z; Estrada K; Tukiainen T; Huerta-Chagoya A; Moreno-Macías H; Jablonski KA; Hanson RL; Walford GA; Moran I; Chen L; Agarwala V; Ordóñez-Sánchez ML; Rodríguez-Guillen R; Rodríguez-Torres M; Segura-Kato Y; García-Ortiz H; Centeno-Cruz F; Barajas-Olmos F; Caulkins L; Puppala S; Fontanillas P; Williams AL; Bonàs-Guarch S; Hartl C; Ripke S. **A Loss-of-Function Splice Acceptor Variant in IGF2 Is Protective for Type 2 Diabetes.** *DIABETES.* 66(11):2903-2914. I.F.: 8.684

3. Van Arensbergen J., Dussaud S., Pardanaud-Glavieux C., García-Hurtado J., Sauty C., Guerci A., Ferrer J., Ravassard P. **A distal intergenic region controls pancreatic endocrine differentiation by acting as a transcriptional enhancer and as a polycomb response element.** *PLOS ONE.* 12(2):e0171508. I.F.: 2.806

GRANTS FOR RESEARCH IN PROGRESS

Ferrer J. **Empleo de epigenomas celulares para optimizar la terapia celular a partir de células madre.**
Sponsored by: Ministerio de Ciencia e Innovación. PLE2009-0162
Duration: 01/11/2009-01/11/2017

Ferrer J. **Diabetes Research on patients Tratification.**
Sponsored by: European Commission (Innovative Medicines Initiative). IMI/115317
Duration: 01/02/2012-31/01/2019

Ferrer J. **Genome regulators as targets for enhancing beta cell regeneration and function / Evaluación de reguladores genómicos como dianas para estimular la regeneración y función de las células beta (Betareg).**
Sponsored by: Ministerio de Economía y Competitividad. BFU2014-54284-R
Duration: 01/01/2015-31/12/2018

Ferrer J. **Computational and functional annotation of genomic elements during development of the model vertebrate zebrafish (Zencode).**
Sponsored by: European Commission (H2020_MSCA_ITN_2014). 643062
Duration: 01/01/2015-31/12/2018

Ferrer J. **Development of a systems biomedicine approach for risk identification, prevention and treatment of type 2 diabetes.**
Sponsored by: European Commission (H2020_PHC_2015). 667191
Duration: 01/01/2016-31/12/2019

Ferrer J. **Modeling three-dimensional chromosomal structure in beta cells to identify genetic mechanisms underlying type 2 diabetes.**
Sponsored by: Fundació La Marató de TV3. 201611-30
Duration: 31/03/2017-30/03/2020

3.14 Diabetes: metabolic and molecular networks

LOCATION
CEK building floor 5

KEYWORDS
1. **Type 1 diabetes**
2. **Type 2 diabetes**
3. **Obesity**
4. **Autoimmunity**
5. **Pancreatic islets**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	120.81	27	16	9
2016	168.97	32	24	3
2017	153.32	18	12	3

TEAM INVOLVED IN
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AWARDS

Doctor Honoris Causa
Institution: Universitat Rovira i Virgili
Awardee/s: Ramon Gomis

Second Prize, "Vanguàrdia de la Ciència"
Institution: La Vanguardia, Fundació Catalunya-La Pedrera
Awardee/s: Pere Santamaria

Fellow of the Royal Society of Canada
Institution: Royal Society of Canada
Awardee/s: Pere Santamaria

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STRATEGIC OBJECTIVES

1. To evaluate the molecular, genetic, and environmental contribution to the determinants of different endocrinological diseases.
2. To understand the contribution and interaction of central and peripheral factors in the regulation of glucose homeostasis and energy balance.
3. To translate new concepts in immunobiology into clinical studies.

MAIN LINES OF RESEARCH

1. Investigation of the mechanisms involved in the destruction, survival and proliferation of pancreatic beta-cells
2. Manipulation of defined populations of neurons in the central nervous system in order to correlate the function of a particular protein with specific physiological and behavioural outputs.
3. Bariatric surgery and the resolution of comorbidites associated with obesity.

4. Mediterranean dietary patterns and other nutritional strategies for the prevention of type 2 diabetes and cardiovascular disease.
5. Study of the molecular and epigenetic mechanisms of cardiometabolic memory in humans and animal models of hypercortisolism
6. Depiction of nanomedicine-based strategies to efficiently suppress the progression of several different autoimmune disorders without compromising systemic immunity
7. Translation of knowledge gained on immunobiology into clinical studies for chronic inflammatory disorders such as type 1 diabetes
8. To improve algorithms of insulin delivery that may help reduce the burden of hyperglycemia in subjects with type 1 diabetes.

RESEARCH GROUP
NEURONAL CONTROL OF METABOLISM (NEUCOME)

GROUP LEADER
Marc Claret (IDIBAPS)

Our general research interests are focused on the study of the molecular mechanisms by which particular neurocircuits control food intake, body weight and glucose metabolism. To achieve this aim, our group uses a combination of neuroanatomy, molecular and genetic tools to manipulate defined populations of neurons in order to correlate the function of a particular protein with specific physiological and behavioural outputs. Understanding the physiological mechanisms controlling energy balance and the pathophysiological alterations leading to obesity and diabetes, are the first steps towards developing new and more effective therapeutic approaches for the treatment of these metabolic conditions.

RESEARCH GROUP
PANCREATIC ISLETS: BIOMARKERS AND FUNCTION

GROUP LEADER
Ramon Gomis (HCB-IDIBAPS)

Our team conducts two main research programs: the first one is aimed at investigating the mechanisms involved in the destruction, survival and proliferation of the pancreatic beta-cell, the molecules that participate in these processes, and how the activation or inhibition of these molecules may help recover beta-cell mass as therapeutic targets for treating diabetes; the second one seeks to obtain insulin-producing cells from human skin fibroblasts and to analyze their function, revascularization process and capacity for reversing diabetes when transplanted into experimental models of diabetes.
In addition, the group participates in research projects in collaboration with Alícia Foundation that focus on investigating different nutritional strategies for preventing diabetes.

GROUP Ramon Gomis

GROUP Marc Claret

50/50 PROGRAM

ENDOCRINE DISORDERS: CROSSTALK BETWEEN MOLECULAR AND METABOLIC DETERMINANTS

GROUP LEADER
Felicia Hanzu (HCB-IDIBAPS)

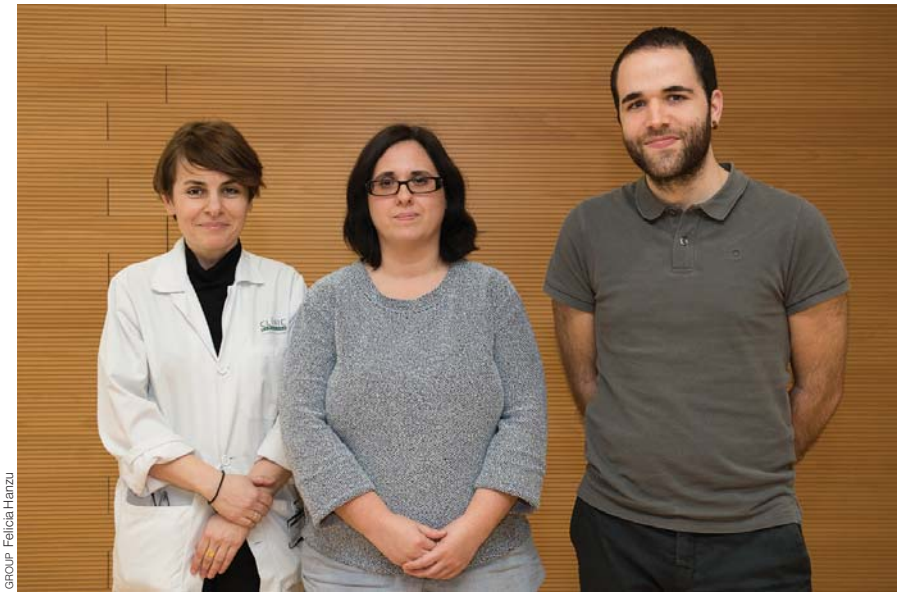
Our group studies the determinants underlying physiopathological mechanisms of endocrine tumors and gender dysphoria. The aim is to translate knowledge from the basic research into the clinical practice by focusing on the development of new diagnostic and treatment strategies.

Translational research:

1. Study of molecular and epigenetic mechanisms of the cardiometabolic memory in hypercortisolism. Focus on cellular plasticity and function of adipose tissue.
2. Study of cardiovascular effects of gonadal steroid treatment in gender identity disorders.

Technological Innovation:

1. Development of new diagnostic and treatment techniques of thyroid nodular disease.



GROUP Felicia Hanzu

RESEARCH GROUP

PATHOGENESIS AND TREATMENT OF AUTOIMMUNITY

GROUP LEADER
Pere Santamaria (IDIBAPS)

Our group pursues translational studies on the immunobiology of a novel therapeutic approach for chronic inflammatory disorders based on nanomedicine. This therapeutic approach triggers the formation of extensive antigen- and disease-specific networks of regulatory T and B-cells that efficiently suppress the progression of several different autoimmune disorders without compromising systemic immunity.

GROUP Josep Vidal

RESEARCH GROUP

TRANSLATIONAL RESEARCH IN DIABETES, LIPIDS AND OBESITY

GROUP LEADER
Josep Vidal (HCB)

The main aim of our research group is to gain a greater understanding of the mechanisms that associate excess weight and dietary patterns with the development of metabolic disorders. For this purpose, we develop clinical and basic lines of research that seek to analyze metabolic adaptation response to situations including weight gain, exposure to certain dietary patterns, and weight loss in human subjects and animal models. At present, our studies involving human subjects focus on the Mediterranean diet model, and also weight loss associated with bariatric surgery.

PUBLICATIONS

Originals / I.F.: 153.327

1. Singha S., Shao K., Yang Y., Clemente-Casares X., Solé P., Clemente A., Blanco J., Dai Q., Song F., Liu S., Yamanouchi J., Umeshappa C., Nanjundappa R., Detampel P., Amrein M., Fandos C., Tanguay R., Newbigging S., Serra P., Khadra A., Chan W., Santamaria P. **Peptide–MHC-based nanomedicines for autoimmunity function as T-cell receptor microclustering devices.** *NATURE NANOTECHNOLOGY.* 12(7):701-710. I.F.: 38.986

2. Hebbandi Nanjundappa R., Ronchi F., Wang J., Clemente-Casares X., Yamanouchi J., Sokke Umeshappa C., Yang Y., Blanco J., Bassolas-Molina H., Salas A., Khan H., Slattery R., Wyss M., Mooser C., Macpherson A., Sycuro L., Serra P., McKay D., McCoy K., Santamaria P. **A Gut Microbial Mimic that Hijacks Diabetogenic Autoreactivity to Suppress Colitis.** CELL. 171(3):655-667. I.F.: 30.410

3. Ramírez S, Gómez-Valadés AG, Schneeberger M, Varela L, Haddad-Tóvolli R, Altirriba J, Noguera E, Drougard A, Flores-Martínez Á, Imbernón M, Chivite I, Pozo M, Vidal-Itriago A, Garcia A, Cervantes S, Gasa R, Nogueiras R, Gama-Pérez P, Garcia-Roves PM, Cano DA, Knauf C, Servitja JM, Horvath TL, Gomis R, Zorzano A, Claret M. **Mitochondrial Dynamics Mediated by Mitofusin 1 Is Required for POMC Neuron Glucose-Sensing and Insulin Release Control.** *CELL METABOLISM.* 25(6):1390-1399. I.F.: 18.164

4. Aminian, Ali; Brethauer, Stacy A.; Andalib, Amin; Nowacki, Amy S.; Jimenez, Amanda; Corcelles, Ricard; Hanipah, Zubaidah Nor; Punchai, Suriya; Bhatt, Deepak L.; Kashyap, Sangeeta R.; Burguera, Bartolome; Lacy, Antonio M.; Vidal, Josep; Schauer, Philip R. **Individualized Metabolic Surgery Score: Procedure Selection Based on Diabetes Severity.** *ANNALS OF SURGERY.* 266(4):650-657. I.F.: 8.980

5. Rodríguez-Comas J, Moreno-Asso A, Moreno-Vedia J, Martín M, Castaño C, Marzà-Florensa A, Bofill-De Ros X, Mir-Coll J, Montané J, Fillat C, Gasa R, Novials A, Servitja JM. **Stress-Induced MicroRNA-708 Impairs β-Cell Function and Growth.** *DIABETES.* 66(12):3029-3040. I.F.: 8.684

6. Metzger M., Castañeda J., Reznik Y., Giorgino F., Conget I., Aronson R., de Portu S., Runzis S., Lee S., Cohen O. **Factors associated with improved glycemic control following continuous subcutaneous insulin infusion therapy in patients with type 2 diabetes uncontrolled with bolus-basal insulin regimens: An analysis from the OpT2mise randomized trial.** *DIABETES, OBESITY AND METABOLISM.* 19(10):1490-1494. I.F.: 6.715

7. Jimenez, Amanda; Pegueroles, Jordi; Carmona-Iragui, Maria; Vilaplana, Eduard; Montal, Victor; Alcolea, Daniel; Videla, Laura; Illan-Gala, Ignacio; Pane, Adriana; Casajoana, Anna; Belbin, Olivia; Clarimon, Jordi; Moize, Violeta; Vidal, Josep; Lleo, Alberto; Fortea, Juan; Blesa, Rafael; Alzheimer's Dis Neuroimaging Ini. **Weight loss in the healthy elderly might be a non-cognitive sign of preclinical Alzheimer's disease.** *ONCOTARGET.* 8(62):104706-104716. I.F.: 5.168

8. Aranda G; Fernandez-Rebollo E; Pradas-Juni M; Hanzu F; Kalko S; Halperin I; Mora M. **Effects of sex steroids on the pattern of methylation and expression of the promoter region of estrogen and androgen receptors in people with gender dysphoria under cross-sex hormone treatment.** *JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY.* 172:20-28. I.F.: 4.561

9. Ghio, Belen; Jimenez, Amanda; Corcelles, Ricard; Flores, Lilliam; Lacy, Antonio; Vidal, Josep. **Midterm effects of bariatric surgery in patients with insulin-treated type 2 diabetes.** *SURGERY FOR OBESITY AND RELATED DISEASES.* 13(12):2004-2009. I.F.: 4.496

10. Navarrete, Andres; Corcelles, Ricard; Diaz del Gobbo, Gabriel; Perez, Sofia; Vidal, Josep; Lacy, Antonio. **Sleeve gastrectomy in the elderly: A case-control study with long-term follow-up of 3 years.** *SURGERY FOR OBESITY AND RELATED DISEASES.* 13(4):575-580. I.F.: 4.496

11. Cervantes, Sara; Fontcuberta-PiSunyer, Marta; Servitja, Joan-Marc; Fernandez-Ruiz, Rebeca; Garcia, Ainhoa; Sanchez, Lidia; Lee, Young-Sook; Gomis, Ramon; Gasa, Rosa. **Late-stage differentiation of embryonic pancreatic beta-cells requires Jarid2.** *SCIENTIFIC REPORTS.* 7(1):11643. I.F.: 4.259

12. Raccah, Denis; Chou, Engels; Colagiuri, Stephen; Gaal, Zsolt; Lavalle, Fernando; Mkrtumyan, Ashot; Nikonova, Elena; Tentolouris, Nikolaos; Vidal, Josep; Davies, Melanie. **A global study of the unmet need for glycemic control and predictor factors among patients with type 2 diabetes mellitus who have achieved optimal fasting plasma glucose control on basal insulin.** *DIABETES/METABOLISM RESEARCH AND REVIEWS.* 33(3). I.F.: 3.263

13. Perea V., Orois A., Amor A., Jansà M., Vidal M., Gimenez M., Conget I., Vinagre I. **Detailed description of a prepregnancy care program and its impact on maternal glucose control, weight gain, and dropouts.** *DIABETES/METABOLISM RESEARCH AND REVIEWS.* 33(2):e2838. I.F.: 3.263

14. Rosique-Esteban, Nuria; Diaz-Lopez, Andres; Martinez-Gonzalez, Miguel A.; Corella, Dolores; Goday, Albert; Alfredo Martinez, J.; Romaguera, Dora; Vioque, Jesus; Aros, Fernando; Garcia-Rios, Antonio; Tinahones, Francisco; Estruch, Ramon; Carlos Fernandez-Garcia, Jose; Lapetra, Jose; Serra-Majem, Luis; Pinto, Xavier; Tur, Josep A.; Bueno-Cavanillas, Aurora; Vidal, Josep; Delgado-Rodriguez, Miguel; Daimiel, Lidia; Vazquez, Clotilde; Angel Rubio, Miguel; Ros, Emilio; Salas-Salvado, Jordi; PREDIMED-PLUS Investigators. **Leisure-time physical activity, sedentary behaviors, sleep, and cardiometabolic risk factors at baseline in the PREDIMED-PLUS intervention trial: A cross-sectional analysis.** *PLOS ONE.* 12(3):e0172253. I.F.: 2.806

15. Rossetti P., Quirós C., Moscardó V., Comas A., Giménez M., Ampudia-Blasco F., León F., Montaser E., Conget I., Bondia J., Vehí J. **Closed-Loop Control of Postprandial Glycemia Using an Insulin-on-Board Limitation Through Continuous Action on Glucose Target.** *DIABETES TECHNOLOGY AND THERAPEUTICS.* 19(6):355-362. I.F.: 2.698

16. García S., Reyes L., Roldán P., Torales J., Halperin I., Hanzu F., Langdon C., Alobid I., Enseñat J. **Does Low-Field Intraoperative Magnetic Resonance Improve the Results of Endoscopic Pituitary Surgery? Experience of the Implementation of a New Device in a Referral Center.** *WORLD NEUROSURGERY.* 102:102-110. I.F.: 2.592

17. Aranda, Gloria; Lopez, Cristina; Fernandez-Ruiz, Rebeca; Esteban, Yaiza; Garcia-Eguren, Guillermo; Mora, Mireia; Halperin, Irene; Casals, Gregori; Ensenat, Joaquim; Hanzu, Felicia A. **Circulatory Immune Cells in Cushing Syndrome: Bystanders or Active Contributors to Atherometabolic Injury? A Study of Adhesion and Activation of Cell Surface Markers.** *INTERNATIONAL JOURNAL OF ENDOCRINOLOGY.* 2017:2912763. I.F.: 2.510

18. Ferrer J., Molina V., Rull R., López-Boado M., Sánchez S., García R., Ricart M., Ventura-Aguiar P., García-Criado Á., Esmatjes E., Fuster J., Garcia-Valdecasas J. **Pancreas transplantation: Advantages of a retroperitoneal graft position.** *CIRUGIA ESPAÑOLA.* 95(9):513-520. I.F.: 1.276

Review / I.F.: 18.392

1. Vidal J, Corcelles R, Jiménez A, Flores L, Lacy AM. **Metabolic and Bariatric Surgery for Obesity.** *GASTROENTEROLOGY.* 152(7):1780-1790. I.F.: 18.392

Letters / I.F.: 5.752

1. Schütz-Fuhrmann I., Castañeda J., Reznik Y., Aronson R., Conget I., Liabat S., Runzis S., de Portu S., Cohen O. **Factors affecting the benefit of insulin dose intensification in people with Type 2 diabetes: an analysis from the OpT2mise randomized trial.** *DIABETIC MEDICINE.* 34(2):291-292. I.F.: 3.054

2. Viñals C., Pané A., Quirós C., Giménez M., Conget I. **Severe Hypoglycemia before Landing in a Patient with Type 1 Diabetes Using Sensor-Augmented Pump Therapy.** *DIABETES TECHNOLOGY AND THERAPEUTICS.* 19(8):491-492. I.F.: 2.698

Consortium Publications / I.F.: 4.101

1. Valassi E; Franz H; Brue T; Feelders R; Netea-Maier R; Tsagarakis S; Webb S; Yaneva M; Reincke M; Droste M; Komerdus I; Maiter D; Kastelan D; Chanson P; Pfeifer M; Strasburger C; Toth M; Chabre O; Tabarin A; Krsek M; Fajardo C; Bolanowski M; Santos A; Wass J; Trainer P; Ambrogio A; Aranda G; Arosio M; Balomenaki M; Beck-Peccoz P; Berr-Kirmair C; Bollerslev J; Carvalho D; Cavagnini F; Christ E; Demtröder F; Denes J; Dimopoulou C; Dreval A; Dusek T. **Diagnostic tests for Cushing's syndrome differ from published guidelines: Data from ERCUSYN.** *EUROPEAN JOURNAL OF ENDOCRINOLOGY.* 176(5):613-624. I.F.: 4.101

GRANTS FOR RESEARCH IN PROGRESS

Claret M. **Rutas de control de calidad mitocondriales en neurocircuitos hipotalámicos: descifrando unevos mecanismos de regulación para el control sistémico del metabolismo.**
Sponsored: Ministerio de Educación y Ciencia (Europa Excelencia 2015).
SAF2015-71661-ERC
Duration: 01/11/2015-30/04/2017

Claret M. **Estudio del papel de la fusión mitocondrial en neuronas hipotalámicas sobre el control del apetito y la regulación del peso corporal: Orpa1 como potencial diana terapéutica para el tratamiento de la obesidad.**
Sponsored: Fundación BBVA.
BBM-MED-1172
Duration: 11/11/2015-30/01/2018

Claret M. **Decoding mitochondrial nutrient-sensing programs in POMC neurons as key determinants of metabolic health.**
Sponsored by:European Commission (H2020_ERC Consolidator Grant 2016).
725004
Duration: 01/04/2017-31/03/2022

Claret M. **Investigando el papel de los neuroesteroides derivados de las neuronas POMC hipotalámicas como reguladores críticos del balance energético y el metabolismo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00963
Duration: 01/01/2017-31/12/2019

Claret M. **Neuronas POMC: ¿en la interfaz entre la detección de energía y el comportamiento altruista?**
Sponsored by: Ministerio de Economía y Competitividad (Explora Ciencia 2015).
BFU2015-72486-EXP
Duration: 01/05/2017-30/04/2019

Gasa R. **Proliferación de la célula β pancreática: impacto de nuevos reguladores.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00774.
Duration: 01/01/2017-31/12/2019

Gasa R. **Terapia cellular en diabetes: nuevas estrategias para generar células beta sustitutas y optimización del transplante.**
Sponsored by: Fundación DiabetesCERO
Duration: 01/06/2017-31/05/2018

Gomis R. **Understanding obesity, metabolic syndrome type 2 diabetes and fatty liver diseases: A multidisciplinary approach.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE14/00031
Duration: 01/01/2015-31/03/2018

Gomis R. **Laser and Ultrasound Co-Analyzer for thyroid nodules.**
Sponsored by: European Commission (H2020_ICT_2015). 688303
Duration: 01/02/2016-31/01/2020

Gomis R. **Efectes beneficiosos de la quinoa (Chenopodium quinoa Willd) en la prevenció de la Diabetis Mellitus tipus 2.**
Sponsored by: Associació Catalana de Diabetis. Ajut a la Recerca Gonçal Lloveras i Vallès.
Duration: 01/07/2017-30/06/2020

Hanzu F. **Cambios epigenéticos inducidos por el síndrome cushing en la plasticidad y el kinoma del tejido adipso. Modelo animal y estudio en humanos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00859
Duration: 01/01/2016-31/12/2018

Jiménez A. **Malaltia d'Alzheimer preclínica, diabetis mellitus tipus 2 i obesitat. Efectes de la cirurgia bariàtrica: un estudi multimodal.**
Sponsored by: Fundació La Marató TV3.
201614.30.31
Duration: 10/03/2017-09/03/2020

Santamaria P. **Advancing human antigen-specific T-regulatory cell expanding nanomedicines for autoimmune disease: Translational studies in humanized mice.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PIE14/00027
Duration: 01/01/2015-31/12/2017

Santamaría P. **Advancing an antigen-specific nanomedicine for the treatment of central nervous system autoimmunity.**
Sponsored by: Ministerio de Economía y Competitividad. ERA-NET NEURON II
Duration: 01/01/2015-31/12/2017

Santamaria P. **El papel de la autofagia celular en la tolerancia central y activación periférica de células TCD4+ diabetogénicas.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2015-68187-R
Duration: 01/01/2016-31/12/2018

Santamaria P. **Red Temática de Investigación Cooperativa en Salud - Esclerosis múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0015/0020
Duration: 01/01/2017-31/12/20121

Serra P. **Nanomedicines to expand type 1 diabetes specific T-regulatory-1 type cells: mechanistic and translational studies.**
Sponsored by: Juvenile Diabetes Res.Foundation. 5-CDA-2014-214-A-N
Duration: 01/06/2014-31/05/2019

Vidal J. **PREDIMED+DM Efecto de una dieta mediterránea hipocalórica y promoción de la actividad física en prevenciones de diabetes tipo 2 en personas con síndrome metabólico.**
Sponsored by. Instituto de Salud Carlos III (ISCIII). PI14/00728
Duration: 01/01/2015-30/06/2018

DOCTORAL THESES

Gomis R. **The impact of nutrients on clock genes and metabolism: their role for the prevention and treatment of metabolic diseases.**
PhD student: Ana Lucía Castillo Figueroa

Gomis R. **Diabetes mellitus tipus 2: impacte metabòlic d'una dieta rica en sardina.**
PhD student: Mariona Balfegó Díaz

3.15 Pathogenesis and prevention of diabetes

LOCATION
CEK building floor 5

KEYWORDS
1. **Islet amyloid polypeptide (IAPP)/amylin**
2. **Beta-cell dysfunction**
3. **Circulating microRNAs**
4. **Endothelial dysfunction**
5. **Exercise and nutrition**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	77.45	20	11	6
2016	76.92	19	9	9
2017	87.38	17	12	3

TEAM INVOLVED IN
CIBERDEM
AGAUR_SGR14

AWARDS
Hellmut Mehnert Award
Institution: German Center for Diabetes Research (DZD)
Awardee/s: Antonio Ceriello

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POST-DOCTORAL RESEARCHERS
Gema Alcarraz (IDIBAPS)
Laura Brugnara (CIBER)
Valeria de Nigris (IDIBAPS)
Francesco Prattichizzio (IDIBAPS)

PRE-DOCTORAL RESEARCHERS
Sara de Pablo (CIBER)
Juan Moreno (FCRB)
Serafín Murillo (CIBER)
Júlia Rodríguez (IDIBAPS)

STRATEGIC OBJECTIVES

1. To study metabolic and molecular responses to exercise and nutrition in diabetes.
2. To identify circulating microRNAs as potential biomarkers and mediators of prediabetes and vascular complications in diabetes.
3. To investigate the mechanisms of endothelial dysfunction in diabetes.
4. To investigate the mechanisms of beta-cell dysfunction in the search for new therapeutic targets.

MAIN LINES OF RESEARCH

1. Mechanisms of pancreatic islet dysfunction in type 2 diabetes mellitus: potential protective effects of endoplasmic reticulum stress inhibitors and anti-inflammatory molecules against amyloid-induced beta-cell dysfunction.
2. New therapeutic targets for the treatment of type 2 diabetes and obesity: role of the protease Bace2 in the control of glucose homeostasis and body weight.
3. Modulation of signalling and transcriptional networks in pancreatic islets in response to metabolic stress and proinflammatory cytokines.
4. Impact of lifestyle on diabetes: metabolic and molecular responses to exercise and nutrition in diabetic patients and animal models.
5. Role of circulating exosomal microRNAs in

TEAM Anna Novials

the pathogenesis of type 2 diabetes and the control of lipid metabolism: impact of exercise intervention.

6. Circulating microRNAs as potential biomarkers of micro- and macrovascular complications in diabetes.
7. Impact of glucose oscillations on cardiovascular complications of diabetes: mechanisms of endothelial dysfunction.
8. Potential beneficial effects of GLP-1 and DPP-4 inhibitors in endothelial cells exposed to hyperglycemic conditions.

PUBLICATIONS

Originals / I.F.: 87.381

1. Ramírez S, Gómez-Valadés AG, Schneeberger M, Varela L, Haddad-Tóvolli R, Altirriba J, Noguera E, Drougard A, Flores-Martínez Á, Imbernón M, Chivite I, Pozo M, Vidal-Itriago A, Garcia A, Cervantes S, Gasa R, Nogueiras R, Gama-Pérez P, Garcia-Roves PM, Cano DA, Knauf C, Servitja JM, Horvath TL, Gomis R, Zorzano A, Claret M. **Mitochondrial Dynamics Mediated by Mitofusin 1 Is Required for POMC Neuron Glucose-Sensing and Insulin Release Control.** *CELL METABOLISM.* 25(6):1390-1399. I.F.: 18.164

2. Rodríguez-Comas J, Moreno-Asso A, Moreno-Vedia J, Martín M, Castaño C, Marzà-Florensa A, Bofill-De Ros X, Mir-Coll J, Montané J, Fillat C, Gasa R, Novials A, Servitja JM. **Stress-Induced MicroRNA-708 Impairs β-Cell Function and Growth.** *DIABETES.* 66(12):3029-3040. I.F.: 8.684

3. Ceriello, Antonio; De Cosmo, Salvatore; Rossi, Maria Chiara; Lucisano, Giuseppe; Genovese, Stefano; Pontremoli, Roberto; Fioretto, Paola; Giorda, Carlo; Pacilli, Antonio; Viazzi, Francesca; Russo, Giuseppina; Nicolucci, Antonio; AMD-Annals Study Grp. **Variability in HbA1c, blood pressure, lipid parameters and serum uric acid, and risk of development of chronic kidney disease in type 2 diabetes.** *DIABETES, OBESITY AND METABOLISM.* 19(11):1570-1578. I.F.: 6.715

4. Alcarraz-Vizán G, Castaño C, Visa M, Montane J, Servitja JM, Novials A. **BACE2 suppression promotes β-cell survival and function in a model of type 2 diabetes induced by human islet amyloid polypeptide overexpression.** *CELLULAR AND MOLECULAR LIFE SCIENCES.* 74(15):2827-2838. I.F.: 5.788

5. Montane, Joel; de Pablo, Sara; Castano, Carlos; Rodriguez-Comas, Julia; Cadavez, Lisa; Obach, Merce; Visa, Montse; Alcarraz-Vizan, Gema; Sanchez-Martinez, Melchor; Nonell-Canals, Alfons; Parrizas, Marcelina; Servitja, Joan-Marc; Novials, Anna. **Amyloid-induced beta-cell dysfunction and islet inflammation are ameliorated by 4-phenylbutyrate (PBA) treatment.** *FASEB* JOURNAL. 31(12):5296-5306. I.F.: 5.498

6. Gentile, Sandro; Piscitelli, Pamela; Viazzi, Francesca; Russo, Giuseppina; Ceriello, Antonio; Giorda, Carlo; Guida, Piero; Fioretto, Paola; Pontremoli, Roberto; Strollo, Felice; De Cosmo, Salvatore; AMD-Annals Study Grp. **Antihyperglycemic treatment in patients with type 2 diabetes in Italy: the impact of age and kidney function.** *ONCOTARGET.* 8(37):62039-62048. I.F.: 5.168

7. Viazzi F, Piscitelli P, Ceriello A, Fioretto P, Giorda C, Guida P, Russo G, De Cosmo S, Pontremoli R, AMD?Annals Study Group. **Resistant Hypertension, Time-Updated Blood Pressure Values and Renal Outcome in Type 2 Diabetes Mellitus.** *JOURNAL OF THE AMERICAN HEART ASSOCIATION.* 6(9):e006745. I.F.: 4.425

8. Cervantes, Sara; Fontcuberta-PiSunyer, Marta; Servitja, Joan-Marc; Fernandez-Ruiz, Rebeca; Garcia, Ainhoa; Sanchez, Lidia; Lee, Young-Sook; Gomis, Ramon; Gasa, Rosa. **Late-stage differentiation of embryonic pancreatic beta-cells requires Jarid2.** *SCIENTIFIC REPORTS.* 7(1):11643. I.F.: 4.259

9. Piscitelli, Pamela; Viazzi, Francesca; Fioretto, Paola; Giorda, Carlo; Ceriello, Antonio; Genovese, Stefano; Russo, Giuseppina; Guida, Pietro; Pontremoli, Roberto; De De Cosmo, Salvatore. **Predictors of chronic kidney disease in type 1 diabetes: a longitudinal study from the AMD Annals initiative.** *SCIENTIFIC REPORTS.* 7(1):3313. I.F.: 4.259

10. Lansink M, Hofman Z, Genovese S, Rouws CHFC, Ceriello A. **Improved Glucose Profile in Patients With Type 2 Diabetes With a New, High-Protein, Diabetes-Specific Tube Feed During 4 Hours of Continuous Feeding.** *JOURNAL OF PARENTERAL AND ENTERAL NUTRITION.* 41(6):968-975. I.F.: 4.220

11. Pacilli, Antonio; Viazzi, Francesca; Fioretto, Paola; Giorda, Carlo; Ceriello, Antonio; Genovese, Stefano; Russo, Giuseppina; Guida, Pietro; Pontremoli, Roberto; De Cosmo, Salvatore; AMD-Annals Study Grp. **Epidemiology of diabetic kidney disease in adult patients with type 1 diabetes in Italy: The AMD-Annals initiative.** *DIABETES/METABOLISM RESEARCH AND REVIEWS.* 33(4):e2873. I.F.: 3.263

12. Giorda, Carlo; Forlani, Gabriele; Manti, Roberta; Mazzella, Natalia; De Cosmo, Salvatore; Rossi, Maria Chiara; Nicolucci, Antonio; Russo, Giuseppina; Di Bartolo, Paolo; Ceriello, Antonio; Guida, Piero;AMD-Annals Study Grp. **Occurrence over time and regression of nonalcholic fatty liver disease in type 2 diabetes.** *DIABETES/METABOLISM RESEARCH AND REVIEWS.* 33(4):e2878. I.F.: 3.263

13. Pujadas G, De Nigris V, Prattichizzo F, La Sala L, Testa R, Ceriello A. **The dipeptidyl peptidase-4 (DPP-4) inhibitor teneligliptin functions as antioxidant on human endothelial cells exposed to chronic hyperglycemia and metabolic high-glucose memory.** *ENDOCRINE.* 56(3):509-520. I.F.: 3.131

14. De Candia, Paola; Spinetti, Gaia; Specchia, Claudia; Sangalli, Elena; La Sala, Lucia; Uccellatore, Annachiara; Lupini, Silvia; Genovese, Stefano; Matarese, Giuseppe; Ceriello, Antonio. **A unique plasma microRNA profile defines type 2 diabetes progression.** *PLOS ONE.* 12(12):e0188980. I.F.: 2.806

15. Viazzi, Francesca; Piscitelli, Pamela; Giorda, Carlo; Ceriello, Antonio; Genovese, Stefano; Russo, Giuseppina; Guida, Pietro; Fioretto, Paola; De Cosmo, Salvatore; Pontremoli, Roberto; AMD-Annals Study Grp. **Metabolic syndrome, serum uric acid and renal risk in patients with T2D.** *PLOS ONE.* 12(4):e0176058. I.F.: 2.806

16. Viazzi, Francesca; Piscitelli, Pamela; Giorda, Carlo; Ceriello, Antonio; Genovese, Stefano; Russo, Giuseppina T.; Fioretto, Paola; Guida, Pietro; De Cosmo, Salvatore; Pontremoli, Roberto;AMD-Annals Study Grp. **Association of kidney disease measures with risk of renal function worsening in patients with hypertension and type 2 diabetes.** *JOURNAL OF DIABETES AND ITS COMPLICATIONS.* 31(2):419-426. I.F.: 2.734

17. Cattaneo M, La Sala L, Rondinelli M, Errichiello E, Zuffardi O, Puca AA, Genovese S, Ceriello A. **A donor splice site mutation in**

CISD2 generates multiple truncated, non-functional isoforms in Wolfram syndrome type 2 patients. *BMC MEDICAL GENETICS.* 18(1):147. I.F.: 2.198

Review / I.F.: 46.289

1. Standl, Eberhard; Schnell, Oliver; McGuire, Darren K.; Ceriello, Antonio; Ryden, Lars. **Integration of recent evidence into management of patients with atherosclerotic cardiovascular disease and type 2 diabetes.** *THE LANCET. DIABETES & ENDOCRINOLOGY.* 5(5):391-402. I.F.: 19.742

2. Luconi M, Cantini G, Ceriello A, Mannucci E. **Perspectives on cardiovascular effects of incretin-based drugs: From bedside to bench, return trip.** *INTERNATIONAL JOURNAL OF CARDIOLOGY.* 241:302-310. I.F.: 6.189

3. Schnell, Oliver; Ryden, Lars; Standl, Eberhard; Ceriello, Antonio;D&CVD EASD Study Grp. **Updates on cardiovascular outcome trials in diabetes.** *CARDIOVASCULAR DIABETOLOGY.* 16(1):128. I.F.: 4.752

4. Testa R, Bonfigli AR, Prattichizzo F, La Sala L, De Nigris V, Ceriello A . **The "Metabolic Memory" Theory and the Early Treatment of Hyperglycemia in Prevention of Diabetic Complications.** *NUTRIENTS.* 9(5):437. I.F.: 3.550

5. Giuliani, Angelica; Prattichizzo, Francesco; Micolucci, Luigina; Ceriello, Antonio; Procopio, Antonio Domenico; Rippo, Maria Rita. **Mitochondrial (Dys) Function in Inflammaging: Do MitomiRs Influence the Energetic, Oxidative, and Inflammatory Status of Senescent Cells?** *MEDIATORS OF INFLAMMATION.* 2017. I.F.: 3.232

6. Prattichizzo, Francesco; Micolucci, Luigina; Cricca, Monica; De Carolis, Sabrina; Mensa, Emanuela; Ceriello, Antonio; Procopio, Antonio Domenico; Bonafe, Massimiliano; Olivieri, Fabiola. **Exosome-based immunomodulation during aging: A nano-perspective on inflamm-aging.** *MECHANISMS OF AGEING AND DEVELOPMENT.* 168:44-53. I.F.: 3.087

7. Ceriello, Antonio; Inagaki, Nobuya. **Pharmacokinetic and pharmacodynamic evaluation of linagliptin for the treatment of type 2 diabetes mellitus, with consideration of Asian patient populations.** *J DIABETES INVEST.* 8(1):19-28. I.F.: 3.039

8. Ceriello A .**Targeting One-Hour Postmeal Glucose: Is It Time for a Paradigm Switch in Diabetes Management?** *DIABETES TECHNOLOGY AND THERAPEUTICS.* 19(9):493-497. I.F.: 2.698

Letters / I.F.: 13.191

1. Cnop M, Klupa T, Tentolouris N, Novials A, Burcelin R, van Eimeren M. **Europe has to step up its efforts to produce innovative and safe diabetes technology.** *DIABETOLOGIA.* 60(12):2532-2533. I.F.: 6.080

2. Mannucci E, Monami M, Ceriello A, Rotella CM. **Back to glycemic control: An alternative look at the results of cardiovascular outcome trials in type 2 diabetes.** *NUTRITION, METABOLISM AND CARDIOVASCULAR DISEASES.* 27(4):375-377. I.F.: 3.679

3. Testa, Roberto; Ceriotti, Ferruccio; Guerra, Elena; Bonfigli, Anna Rita; Boemi, Massimo; Cucchi, Michela; Di Gaetano, Nicola; Santini, Gabriele; Genovese, Stefano; Ceriello, Antonio. **Glycated albumin: Correlation to HbA1c and preliminary reference interval evaluation.** *CLINICAL CHEMISTRY AND LABORATORY MEDICINE.* 55(2):e31-e33. I.F.: 3.432

GRANTS FOR RESEARCH IN PROGRESS

Ceriello A. **Role of released and exosomial microRNAs, inflammatory and diabetes associated (REx-MIDAs), in endothelial metabolic memory.**
Sponsored by: Fundació La Marató de TV3. 201606.10
Duration: 10/03/2017-09/03/2020

Novials A; Servitja JM. **New strategies for the treatment of diabetes: targeting endoplasmic reticulum stress and inflammation induced by amyloid deposits in pancreatic islets.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00447
Duration: 01/01/2015-30/04/2018

Novials A. **Molecular links between diabetes and neurodegenerative disorders.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE14/0061
Duration: 01/01/2015-31/12/2017

DOCTORAL THESES

Novials A, Franch N. **Evolución de la atención a la diabetes tipo 2 en Catalunya, 1993-2013.**
PhD student: Manel Mata Cases

ANNUAL
SCIENTIFIC
REPORT
2017

AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

4

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AREA 4

CLINICAL AND EXPERIMENTAL NEUROSCIENCE

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José Luís Molinuevo

4.1 Neuropharmacology and experimental neuropathology

LOCATION
IIBB-CSIC labs
UB School of Medicine

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www.ub.edu/portal/web/dp-biomedicalsciences/neuroinflamacio.-ip-josep-saura-marti

KEYWORDS
1. **Neuropsychopharmacology**
2. **Brain aging and neurotoxicity**
3. **Neurodegeneration**
4. **Neuroinflammation**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	63.54	13	11	1
2016	115.44	21	18	2
2017	110.30	24	19	4

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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.

MAIN LINES OF RESEARCH

- The Systems Neuropharmacology Group studies the brain circuits and neural elements involved in the physiopathology and treatment of depression, schizophrenia and Parkinson's disease.

- The Molecular Neuropharmacology group studies the involvement of the cAMP cascade in the polarization of microglia and macrophage toward anti- or pro-inflammatory phenotypes both in cell culture with cell lines and primary cultures and in the CNS of EAE (experimental autoimmune encephalomyelitis) mice, a multiple sclerosis animal model.

- The aim of the Cellular Neurobiology group is the study of novel targets to modulate neuroinflammation. The group is focused on the role of transcription factors and neuronal-microglial communication molecules in microglial activation and in microglial-induced neurotoxicity.

- The Neurotoxicity and Neurodegeneration Mechanisms group carries out studies on

nerve cell death and stress response, synaptic and cognitive functions, genomics and proteomics, for the determination of targets in toxicity and pathological aging. The goal is finding neuroprotective treatments.

RESEARCH GROUP
SYSTEMS NEUROPHARMACOLOGY

GROUP LEADER
Francesc Artigas (IIBB-CSIC)

The group research is focused on the characterization of the brain circuits and neural elements involved in the physiopathology and treatment of mental (major depression, schizophrenia) and neurological disorders (Parkinson's disease). Using a variety of experimental models, we identify new therapeutic targets in order to improve treatments.
Recent key findings are the development of electrophysiological models to detect antipsychotic activity and the identification of a key role of ventral areas of the prefrontal cortex in major depression.
Moreover, new therapeutic strategies based on RNAi have been developed for the treatment of major depression and Parkinson disease.

GROUP Francesc Artigas

RESEARCH GROUP
MOLECULAR NEUROPHARMACOLOGY

GROUP LEADER
Guadalupe Mengod (IIBB-CSIC)

Neurotransmission and anatomical, cellular and molecular aspects of neurodegenerative disorders with an inflammatory component:

1. cAMP regulation of cells involved in neuroinflammation in CNS in a multiple sclerosis mouse model EAE.

GROUP Guadalupe Mengod

2. Role of components of the cAMP signaling cascade on cell polarization toward pro-inflammatory (M1) or anti-inflammatory (M2) phenotype.

3. Agonists for serotonin 5-HT4 receptors as treatment for Alzheimer's disease in a triple transgenic mouse model for this disease.

RESEARCH GROUP
CELLULAR NEUROBIOLOGY

GROUP LEADER
Josep Saura (UB)

The aim of the Cellular Neurobiology group is the study of novel targets to modulate neuroinflammation. We are focused on the role of transcription factors of the C/EBP family and of neuronal-microglial communication molecules (CD200, CD200R, TREM2) in microglial activation and in microglial-induced neurotoxicity. We use primary cell cultures (murine mixed glial, astroglial and microglial-enriched, neuronal, mixed neuron-glial; human monocyte-derived microglia-like cultures), cell lines, in vivo models of neuroinflammation and neurodegeneration, and human samples.

GROUP Josep Saura

RESEARCH GROUP
NEUROTOXICITY AND NEURODEGENERATION MECHANISMS

GROUP LEADER
Cristina Suñol (IIBB-CSIC)

The group studies molecular targets in neurotoxicity and pathological brain aging by using in vivo and in vitro experimental models and human tissues. Mechanisms of neurotoxicity are focused in environmental contaminants as ubiquitous exposures, whereas age-related neurodegeneration is centred in Alzheimer's disease as the main cause of dementia. Neuroprotective mechanisms analysed include those activated by lifestyles of physical exercise and dietary components. This basic research will contribute to the design of new strategies and pharmacological treatments for increasing brain resilience against nerve cell injury and age-related neurodegeneration, specifically Alzheimer's disease.

GROUP Cristina Suñol

PUBLICATIONS

Originals / I.F.: 110.303

1. Santana N, Artigas F. Expression of Serotonin2C Receptors in Pyramidal and GABAergic Neurons of Rat Prefrontal Cortex: A Comparison with Striatum. CEREBRAL CORTEX. 27(6):3125-3139. I.F.: 6.559

2. Gómez-Gonzalo M, Martin-Fernandez M, Martínez-Murillo R, Mederos S, Hernández-Vivanco A, Jamison S, Fernandez AP, Serrano J, Calero P, Futch HS, Corpas R, Sanfeliu C, Perea G, Araque A. Neuron-astrocyte signaling is preserved in the aging brain. GLIA. 65(4):569-580. I.F.: 6.200

3. Corpas R., Revilla S., Ursulet S., Castro-Freire M., Kaliman P., Petegnief V., Giménez-Llort L., Sarkis C., Pallàs M., Sanfeliu C. **SIRT1 Overexpression in Mouse Hippocampus Induces Cognitive Enhancement Through Proteostatic and Neurotrophic Mechanisms.** *MOLECULAR NEUROBIOLOGY.* 54(7):5604-5619. I.F.: 6.190

4. Palomera-Avalos V, Griñán-Ferré C, Puigoriol-Ilamola D, Camins A, Sanfeliu C, Canudas AM, Pallàs M. **Resveratrol Protects SAMP8 Brain Under Metabolic Stress: Focus on Mitochondrial Function and Wnt Pathway.** *MOLECULAR NEUROBIOLOGY.* 54(3):1661-1676. I.F.: 6.190

5. Cosín-Tomás M., Antonell A., Lladó A., Alcolea D., Fortea J., Ezquerra M., Lleó A., Martí M., Pallàs M., Sanchez-Valle R., Molinuevo J., Sanfeliu C., Kaliman P. **Plasma miR-34a-5p and miR-545-3p as Early Biomarkers of Alzheimer's Disease: Potential and Limitations.** *MOLECULAR NEUROBIOLOGY.* 54(7):5550-5562. I.F.: 6.190

6. Didriksen M., Fejgin K., Nilsson S., Birknow M., Grayton H., Larsen P., Lauridsen J., Nielsen V., Celada P., Santana N., Kallunki P., Christensen K., Werge T., Stensbøl T., Egebjerg J., Gastambide F., Artigas F., Bastlund J., Nielsen J. **Persistent gating deficit and increased sensitivity to NMDA receptor antagonism after puberty in a new mouse model of the human 22q11.2 microdeletion syndrome: A study in male mice.** *JOURNAL OF PSYCHIATRY AND NEUROSCIENCE.* 42(1):48-58. I.F.: 5.165

7. Pulido-Salgado M., Vidal-Taboada J., Garcia Diaz-Barriga G., Serratosa J., Valente T., Castillo P., Matalonga J., Straccia M., Canals J., Valledor A., Solà C., Saura J. **Myeloid C/EBPβ deficiency reshapes microglial gene expression and is protective in experimental autoimmune encephalomyelitis.** *JOURNAL OF NEUROINFLAMMATION.* 14(1):54. I.F.: 5.102

8. Flores-Burgess A, Millón C, Gago B, Narváez M, Borroto-Escuela DO, Mengod G, Narváez JA, Fuxe K, Santín L, Díaz-Cabiale Z. **Galanin (1-15) enhancement of the behavioral effects of Fluoxetine in the forced swimming test gives a new therapeutic strategy against depression.** *NEUROPHARMACOLOGY.* 118:233-241. I.F.: 5.012

9. Riga M., Lladó-Pelfort L., Artigas F., Celada P. **The serotonin hallucinogen 5-MeO-DMT alters cortico-thalamic activity in freely moving mice: Regionally-selective involvement of 5-HT<inf>1A</inf>and 5-HT<inf>2A</inf>receptors.** *NEUROPHARMACOLOGY.* :1-12. I.F.: 5.012

10. Corpas R., Hernández-Pinto A., Porquet D., Hernández-Sánchez C., Bosch F., Ortega-Aznar A., Comellas F., de la Rosa E., Sanfeliu C. **Proinsulin protects against age-related cognitive loss through anti-inflammatory convergent pathways.** *NEUROPHARMACOLOGY.* 123:221-232. I.F.: 5.012

11. Devroye C., Haddjeri N., Cathala A., Rovera R., Drago F., Piazza P., Artigas F., Spampinato U. **Opposite control of mesocortical and mesoaccumbal dopamine pathways by serotonin2B receptor blockade: Involvement of medial prefrontal cortex serotonin1A receptors.** *NEUROPHARMACOLOGY.* 119:91-99. I.F.: 5.012

12. Riga MS, Teruel-Martí V, Sánchez C, Celada P, Artigas F. **Subchronic vortioxetine treatment -but not escitalopram- enhances pyramidal neuron activity in the rat prefrontal cortex.** *NEUROPHARMACOLOGY.* 113(pt a):148-155. I.F.: 5.012

13. Gasull-Camós J, Tarrés-Gatius M, Artigas F, Castañé A. **Glial GLT-1 blockade in infralimbic cortex as a new strategy to evoke rapid antidepressant-like effects in rats.** *TRANSLATIONAL PSYCHIATRY.* 7(2):e1038. I.F.: 4.730

14. Gasull-Camós J, Soto-Montenegro ML, Casquero-Veiga M, Desco M, Artigas F, Castañé A. **Differential Patterns of Subcortical Activity Evoked by Glial GLT-1 Blockade in Prelimbic and Infralimbic Cortex: Relationship to Antidepressant-Like Effects in Rats.** *INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY.* 20(12):988-993. I.F.: 4.712

15. Valente T; Serratosa J; Perpiñá U; Saura J; Solá C. **Alterations in CD200-CD200R1 system during EAE already manifest at presymptomatic stages.** *FRONTIERS IN CELLULAR NEUROSCIENCE.* 11:129. I.F.: 4.555

16. Zeinolabediny Y, Caccuri F, Colombo L, Morelli F, Romeo M, Rossi A, Schiarea S, Ciaramelli C, Airoldi C, Weston R, Donghui L, Krupinski J, Corpas R, García-Lara E, Sarroca S, Sanfeliu C, Slevin M, Caruso A, Salmona M, Diomede L. **HIV-1 matrix protein p17 misfolding forms toxic amyloidogenic assemblies that induce neurocognitive disorders.** *SCIENTIFIC REPORTS.* 7(1):10313. I.F.: 4.259

17. Colie, Sandra; Sarroca, Sara; Palenzuela, Rocio; Garcia, Idoia; Matheu, Ander; Corpas, Ruben; Dotti, Carlos G.; Esteban, Jose A.; Sanfeliu, Coral; Nebreda, Angel R. **Neuronal p38 alpha mediates synaptic and cognitive dysfunction in an Alzheimer's mouse model by controlling beta-amyloid production.** *SCIENTIFIC REPORTS.* 7:45306. I.F.: 4.259

18. Van den Munkhof HE, Arnt J, Celada P, Artigas F. **The antipsychotic drug brexpiprazole reverses phencyclidine-induced disruptions of thalamocortical networks.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(12):1248-1257. I.F.: 4.239

19. Merchán A, Navarro SV, Klein AB, Aznar S, Campa L, Suñol C, Moreno M, Flores P. **Tryptophan depletion affects compulsive behaviour in rats: strain dependent effects and associated neuromechanisms.** *PSYCHOPHARMACOLOGY.* 234(8):1223-1236. I.F.: 3.308

20. Caballero B; Olguin N; Campos F; Farina M; Ballester F; Lopez-Espinosa M-J; Llop S; Rodríguez-Farré E; Suñol C. **Methylmercury-induced developmental toxicity is associated with oxidative stress and cofilin phosphorylation. Cellular and human studies.** *NEUROTOXICOLOGY.* 59:197-209. I.F.: 3.100

21. Valdés-Moreno MI, Alcántara-Alonso V, Estrada-Camarena E, Mengod G, Amaya MI, Matamoros-Trejo G, de Gortari P. **Phosphodiesterase-7 inhibition affects accumbal and hypothalamic thyrotropin-releasing hormone expression, feeding and anxiety behavior of rats.** *BEHAV BRAIN RES.* 319:165-173. I.F.: 3.002

22. Palomera-Avalos, Veronica; Grinan-Ferre, Christian; Izquierdo, Vanesa; Camins, Antonio; Sanfeliu, Coral; Pallas, Merce. **Metabolic Stress Induces Cognitive Disturbances and Inflammation in Aged Mice: Protective Role of Resveratrol.** *REJUVENATION RESEARCH.* 20(3):202-217. I.F.: 2.827

23. Rieger DK, Dos Santos AA, Suñol C, Farina M. **Involvement of superoxide in malaoxon-induced toxicity in primary cultures of cortical neurons.** *JOURNAL OF TOXICOLOGY AND ENVIRONMENTAL HEALTH - PART A: CURRENT ISSUES.* 80(19-21):1106-1115. I.F.: 2.731

24. Martín-Álvarez R, Paúl-Fernández N, Palomo V, Gil C, Martínez A, Mengod G. **A preliminary investigation of phoshodiesterase 7 inhibitor VP3.15 as therapeutic agent for the treatment of experimental autoimmune encephalomyelitis mice.** *JOURNAL OF CHEMICAL NEUROANATOMY.* 80:27-36. I.F.: 1.925

Review / I.F.: 3.267

1. Santana, Noemi; Artigas, Francesc. **Laminar and Cellular Distribution of Monoamine Receptors in Rat Medial Prefrontal Cortex.** *FRONTIERS IN NEUROANATOMY.* 11(87). I.F.: 3.267

Letters / I.F.: 68.412

1. Artigas F, Schenker E, Celada P, Spedding M, Lladó-Pelfort L, Jurado N, Núñez M, Santana N, Troyano-Rodriguez E, Riga MS, van den Munkhof H, Castañé A, Shaban H, Jay TM, Tripathi A, Godsil BP, Sebban C, Mariani J, Faure P, Takkilah S, Hughes ZA, Siok CJ, Hajos M, Wicke K, Gass N, Weber-Fahr W, Sartorius A, Becker R, Didriksen M, Bastlund JF, Tricklebank M, Risterucci C, Meyer-Lindenberg A, Schwarz AJ. **Defining the brain circuits involved in psychiatric disorders: IMI-NEWMEDS.** *NAT REV DRUG DISCOV.* 16(1):1-2. I.F.: 57.000

2. Artigas F., Bortolozzi A. **Therapeutic Potential of Conjugated siRNAs for the Treatment of Major Depressive Disorder.** *BIOLOGICAL PSYCHIATRY.* 42(1):371-372. I.F.: 11.412

Consortium Publications / I.F.: 10.162

1. Marchese, Domenica; Botta-Orfila, Teresa; Cirillo, Davide; Antonio Rodriguez, Juan; Maria Livi, Carmen; Fernandez-Santiago, Ruben; Ezquerra, Mario; Marti, Maria J.; Bechara, Elias; Gaetano Tartaglia, Gian. **Discovering the 3' UTR-mediated regulation of alpha-synuclein.** *NUCLEIC ACIDS* RESEARCH. 45(22):12888-12903. I.F.: 10.162

GRANTS FOR RESEARCH IN PROGRESS

Artigas F. **Alteraciones de la corteza infralímbica en depresión: mecanismo de acción de nuevas estrategias antidepresivas.**
Sponsoredby: Ministerio de Economía y Competitividad. SAF2015-68346-P
Duration: 01/01/2016-31/12/2019

Bortolozzi A. **Nuevas estrategias terapéuticas para el tratamiento de sinucleinopatías.**
Sponsoredby: Ministerio de Economía y Competitividad. RTC-2014-2812-1
Duration: 04/02/2014-30/06/2018

Bortolozzi A. **Sinucleínas, depresión y enfermedad de Parkinson. Nuevas estrategias terapéuticas basadas en ácidos nucleicos de interferencia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01390
Duration: 01/01/2014-30/06/2017

Bortolozzi A. **Sinucleinopatías y oligonucleótidos inhibitorios: rol de alfa y gama sinucleínas en la regulación de la función cognitiva.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2016-75797-R
Duration: 30/12/2016-29/12/2019

Celada MP. **Actividad de la corteza prefrontal en nuevas estrategias antidepresivas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00156
Duration: 01/01/2013-31/12/2017

Celada MP. **Modulación de circuitos cortico-mesencefálicos y cortico-límbicos por nuevas terapias antidepresivas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00287
Duration: 01/01/2017-31/12/2019

Mengod G. **¿Están implicados los cambios fenotípicos de las microglía/macrófagos en los efectos beneficiosos de los inhibidores de PDEs del AMPc en la EAE crónica?**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00148
Duration: 01/01/2016-31/12/2018

Sanfeliu C. **Estudio de la epóxido hidrolasa soluble como nueva diana farmacológica para la enfermedad de Alzheimer: Modulacion de las vias de inflamacion y proteólisis.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2016-77703-C2-2
Duration: 30/12/2016-29/12/2019

Saura J. **Nanoparticle delivery system for neurodegenerative disorders.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC14/00016
Duration: 01/01/2015-30/06/2019

Saura J. **C/EBPs microgliales como potencial diana terapéutica en la endermedad de Parkinson.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00302
Duration: 01/01/2015-30/06/2019

Solà C. **El sistema CD200-CD200R1 como diana terapéutica y biomarcador en enfermedades neurológicas: la enfermedad de Parkinson.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00033
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Artigas F, Castañé A. **Role of the infralimbic cortex in depression: Functional connectivity and behavioral phenotypes.**
PhD student: Júlia Gasull Camós

4.2 Brain ischemia: Clinical and experimental studies

LOCATION
HCB building
IIBB-CSIC labs

KEYWORDS
1. **Brain**
2. **Stroke**
3. **Cerebrovascular diseases**
4. **Neuroinflammation**
5. **Oxidative stress**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	162.17	19	17	2
2016	97.32	12	11	1
2017	121.22	21	15	5

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STRATEGIC OBJECTIVES

Study of cerebrovascular pathology from the clinical and basic perspective, with special emphasis on inflammation, immune response, and oxidative stress, as well as on the use of neuroimaging techniques. Translational research integrating experimental models and clinical studies. The ultimate aim is to develop therapeutic strategies in application to stroke.

MAIN LINES OF RESEARCH

Inflammation and immunity in stroke
- Immunological mechanisms in the progression of stroke and infectious complications.
- Cerebral infiltration of myeloid cells and lymphocytes after ischemic stroke: role in brain damage and repair.
- Innate immunity in stroke: the lectin pathway of complement activation.
- Inflammatory and immune responses as targets for stroke treatment.

TEAM. Ángel Chamorro

Vascular damage
- Endothelial damage and blood-brain barrier disruption, after recanalization therapies.
- Hemorrhagic transformation after acute ischemic stroke
- Brain hemorrhage
- Vascular dementia

Brain protection and repair
- Antioxidant treatments in stroke (Uric acid).
- Functional recovery by rehabilitation therapies.

Multimodal neuroimaging in Stroke
- Magnetic resonance imaging (MRI), CT/perfusion, optical imaging techniques.

PUBLICATIONS

Originals / I.F.: 128.217

1. Dávalos A, Cobo E, Molina CA, Chamorro A, de Miquel MA, Román LS, Serena J, López-Cancio E, Ribó M, Millán M, Urra X, Cardona P, Tomasello A, Castaño C, Blasco J, Aja L, Rubiera M, Gomis M, Renú A, Lara B, Martí-Fàbregas J, Jankowitz B, Cerdà N, Jovin TG, REVASCAT Trial Investigators. **Safety and efficacy of thrombectomy in acute ischaemic stroke (REVASCAT): 1-year follow-up of a randomised open-label trial.** *LANCET NEUROLOGY, THE.* 16(5):369-376-376. I.F.: 26.284

2. Wang B., Liu Y., Huang L., Chen J., Li J., Wang R., Kim E., Chen Y., Justicia C., Sakata K., Chen H., Planas A., Ostrom R., Li W., Yang G., McDonald M., Chen R., Heck D., Liao F. **A CNS-permeable Hsp90 inhibitor rescues synaptic dysfunction and memory loss in APP-overexpressing Alzheimer's mouse model via an HSF1-mediated mechanism.** *MOLECULAR PSYCHIATRY.* 22(7):990-1001. I.F.: 13.204

3. Justicia C., Salas-Perdomo A., Pérez-de-Puig I., Deddens L., van Tilborg G., Castellví C., Dijkhuizen R., Chamorro Á., Planas A. **Uric Acid Is Protective After Cerebral Ischemia/Reperfusion in Hyperglycemic Mice.** *TRANSL STROKE RES.* 8(3):294-305. I.F.: 8.266

4. Llull L, Thiel S, Amaro S, Cervera Á, Planas AM, Chamorro Á. **Ficolin-1 Levels in Patients Developing Vasospasm and Cerebral Ischemia After Spontaneous Subarachnoid Hemorrhage.** *MOLECULAR NEUROBIOLOGY.* 54(8):6572-6580. I.F.: 6.190

5. Corpas R., Revilla S., Ursulet S., Castro-Freire M., Kaliman P., Petegnief V., Giménez-Llort L., Sarkis C., Pallàs M., Sanfeliu C. **SIRT1 Overexpression in Mouse Hippocampus Induces Cognitive Enhancement Through Proteostatic and Neurotrophic Mechanisms.** *MOLECULAR NEUROBIOLOGY.* 54(7):5604-5619. I.F.: 6.190

6. Renú A, Laredo C, Lopez-Rueda A, Llull L, Tudela R, San-Roman L, Urra X, Blasco J, Macho J, Oleaga L, Chamorro A, Amaro S. **Vessel Wall Enhancement and Blood-Cerebrospinal Fluid Barrier Disruption After Mechanical Thrombectomy in Acute Ischemic Stroke.** *STROKE.* 48(3):651-657. I.F.: 6.032

7. Abilleira S, Ribera A, Cardona P, Rubiera M, López-Cancio E, Amaro S, Rodríguez-Campello A, Camps-Renom P, Cánovas D, de Miquel MA, Tomasello A, Remollo S, López-Rueda A, Vivas E, Perendreu J, Gallofré M, Catalan Stroke Code and Reperfusion Consortium. **Outcomes After Direct Thrombectomy or Combined Intravenous and Endovascular Treatment Are Not Different.** *STROKE.* 48(2):375-378. I.F.: 6.032

8. Urra X., Laredo C., Zhao Y., Amaro S., Rudilosso S., Renú A., Prats-Galino A., Planas A., Oleaga L., Chamorro Á. **Neuroanatomical correlates of stroke-associated infection and stroke-induced immunodepression.** *BRAIN, BEHAVIOR, AND IMMUNITY.* 60:142-150. I.F.: 5.964

9. Meissner A, Miro F, Jiménez-Altayó F, Jurado A, Vila E, Planas AM. **Sphingosine-1-phosphate signalling-a key player in the pathogenesis of Angiotensin II-induced hypertension.** *CARDIOVASC RES.* 113(2):123-133. I.F.: 5.878

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19. Amarenco P, Sissani L, Labreuche J, Vicaut E, Bousser MG, Chamorro A, Fisher M, Ford I, Fox KM, Hennerici MG, Mattle H, Rothwell PM, Steg PG, Diener HC, Sacco RL, Greving JP, Algra A, PERFORM and PRoFESS Committees and Investigators. **The Intracranial-B<inf>2</inf>LEED<inf>3</inf>S Score and the Risk of Intracranial Hemorrhage in Ischemic Stroke Patients under Antiplatelet Treatment.** *CEREBROVASCULAR DISEASES.* 43(3-4):145-151. I.F.: 2.974

20. Blanco I., Zirak P., Dragojevic T., Castellvi C., Durduran T., Justicia C. **Longitudinal, transcranial measurement of functional activation in the rat brain by diffuse correlation spectroscopy.** *NEUROPHOTONICS.* 4(4):045006. I.F.: 2.740

21. Rudilosso S., San Román L., Blasco J., Hernández-Pérez M., Urra X., Chamorro Á. **Evaluation of white matter hypodensities on computed tomography in stroke patients using the Fazekas score.** *CLINICAL IMAGING.* 46:24-27. I.F.: 1.015

Review / I.F.: 5.081

1. Percie du Sert N, Alfieri A, Allan SM, Carswell HV, Deuchar GA, Farr TD, Flecknell P, Gallagher L, Gibson CL, Haley MJ, Macleod MR, McColl BW, McCabe C, Morancho A, Moon LD, O'Neill MJ, Pérez de Puig I, Planas A, Ragan CI, Rosell A, Roy LA, Ryder KO, Simats A, Sena ES, Sutherland BA, Tricklebank MD, Trueman RC, Whitfield L, Wong R, Macrae IM. **The IMPROVE Guidelines (Ischaemia Models: Procedural Refinements Of in Vivo Experiments).** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM.* 37(11):3488-3517. I.F.: 5.081

Case Reports / I.F.: 1.517

1. Rudilosso S., Laredo C., Urra X., Chamorro Á. **Different Perfusion Patterns in a Patient with Acute Ischemic Stroke.** *JOURNAL OF STROKE AND CEREBROVASCULAR DISEASES.* 26(5):E83-E84. I.F.: 1.517

GRANTS FOR RESEARCH IN PROGRESS

Amaro S. **Daño de la pared arterial en el ictus isquémico agudo: detección con RM avanzada, mecanismos subyacentes y valor pronóstico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00711
Duration: 01/01/2017-31/12/2019

Chamorro A. **Enfermedades vasculares cerebrales (Ictus).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0014/0011
Duration: 01/01/2013-31/03/2017

Chamorro A. **La respuesta inmune en el ictus: Papel de la especificidad antigénica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01437
Duration: 01/01/2013-06/02/2017

Chamorro A. **Respuesta inmune y estrés oxidativa en la hemorragia cerebral.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00430
Duration: 01/01/2016-31/12/2018

Chamorro A. **Redes Temáticas de Investigación Cooperativa en Salud (RETICS) del Instituto de Salud Carlos III. Red de Enfermedades Vasculares Cerebrales: Red INVICTUSplus.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0019/0014
Duration: 01/01/2017-31/12/2021

Justicia C. **Cambios vasculares durante el envejecimiento y en modelos animales de demencia de origen vascular.**
Sponsored by: Ministerio de Ciencia e Innovación (MICINN).
DPI-2015-64358-C2-2-R
Duration: 01/01/2016-31/12/2019

Planas AM. **Imaging of Neuroinflammation in Neurodegenerative Diseases.**
Sponsored by: European Commission.
FP7-HEALTH-11
Duration: 01/03/2012-28/02/2018

Planas AM. **Neuroinflammation.**
Sponsored by: European Commission
FP7-PEOPLE-13
Duration: 01/09/2013-31/08/2017

Planas AM. **Benefits and risks of the immune response to stroke.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
SAF2014-56279-R
Duration: 01/01/2015-31/12/2017

Planas AM. **New therapeutic strategies in the treatment of traumatic brain injury by targeting the LEctin Activation Pathway of complement.**
Sponsored by: Ministerio de Ciencia e Innovación (MICINN).
NEURON9-FP-044/PCIN-2017-035
Duration: 01/11/2017-31/10/2020

DOCTORAL THESES

Chamorro Á, Amaro S. **Daño de la barrera hematoencefálica en el ictus isquémico agudo: Marcadores de neuroimagen y significado pronóstico.**
PhD student: Arturo Renú Jornet

4.3 Parkinson disease and other neurodegenerative movement disorders: clinical and experimental research

LOCATION
HCB building
CELLEX building 3B

KEYWORDS
1. **Parkinson disease**
2. **Alzheimer disease**
3. **Degenerative neurological diseases**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	286.11	49	38	8
2016	125.66	22	17	1
2017	172.56	29	21	3

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Francesc Valldeoriola (HCB)

POST-DOCTORAL RESEARCHERS
Pilar Santacruz (FCRB)

PRE-DOCTORAL RESEARCHERS
Alicia Garrido (FCRB)
Darly Milena Giraldo (FCRB)
Lluis Planellas (FCRB)
Almudena Sánchez (HCB-FCRB)
Cristina Simonet (FCRB)

TECHNICIANS
Manel Fernández (IDIBAPS)

ADMINISTRATIVE STAFF
Laura Maragall (CIBER)

NURSING STAFF
Ana Cámara (HCB)

STRATEGIC OBJECTIVES

1. Development of research projects with results aimed at impacting in a better diagnosis and treatment of Parkinson Disease (PD) and related neurodegenerative movement disorders.
2. Identification of clinical, molecular and imaging biomarkers specific for the preclinical and prodromal phase of PD, as well as for the motor phase of disease.
3. Recruitment of cohorts of PD patients and subjects at-risk of PD and establishment of biorepositories useful for state-of-the-art research in movement disorders.
4. Identification of clinical, molecular and imaging biomarkers of atypical parkinsonism.

MAIN LINES OF RESEARCH

In 2017 we described a new mutation in the gene ACMSD, that causes Parkinson's disease and detected the presence of pathological aggregates of synuclein in gonadal tissue in patients with this disorder. In another study we described the presence of numerous transcriptome alterations in dermal fibroblasts from patients with Parkinson's disease and showed that the disease is systemic and affects peripheral non-neuronal tissues. We are currently working towards deepening our knowledge of existing models of PD epigenetic alterations by using iPSC-DAn models and patient blood samples. We continued our work on biomarkers in parkinsonism cerebrospinal fluid (CSF), published a longitudinal study correlating tau and amyloid in CSF derived from patients with Parkinson's disease to motor and non-motor dysfunction a cross-sectional study on reduced Coenzyme Q10 levels in multiple system atrophy. These latter two studies were carried out as part of the 'Catalan registry of multiple system atrophy' study funded by the TV3 Marató.Funding from the Fondo de Investigación en Salud (Fund for Health Research) has also been granted to us for a new study on the aggregation of different proteins in brain tissues and CSF.

PUBLICATIONS

Originals / I.F.: 172.563

1. Stokholm MG, Iranzo A, Østergaard K, Serradell M, Otto M, Svendsen KB, Garrido A, Vilas D, Borghammer P, Santamaria J, Møller A, Gaig C, Brooks DJ, Tolosa E, Pavese N. Assessment of neuroinflammation in patients with idiopathic rapid-eye-movement sleep behaviour disorder: a case-control study. LANCET NEUROLOGY, THE. 16(10):789-796. I.F.: 26.284

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3. Iranzo, Alex; Santamaria, Joan; Valldeoriola, Francesc; Serradell, Monica; Salamero, Manel; Gaig, Carles; Ninerola-Baizan, Aida; Sanchez-Valle, Raquel; Llado, Albert; De Marzi, Roberto; Stefani, Ambra; Seppi, Klaus; Pavia, Javier; Hoegl, Birgit; Poewe, Werner; Tolosa, Eduard; Lomena, Francisco. **Dopamine Transporter Imaging Deficit Predicts Early Transition to Synucleinopathy in Idiopathic Rapid Eye Movement Sleep Behavior Disorder.** *ANNALS OF NEUROLOGY.* 82(3):419-428. I.F.: 9.890

4. Gaig C, Graus F, Compta Y, Högl B, Bataller L, Brüggemann N, Giordana C, Heidbreder A, Kotschet K, Lewerenz J, Macher S, Martí MJ, Montojo T, Pérez-Pérez J, Puertas I, Seitz C, Simabukuro M, Téllez N, Wandinger KP, Iranzo A, Ercilla G, Sabater L, Santamaría J, Dalmau J. **Clinical manifestations of the anti-IgLON5 disease.** NEUROLOGY. 88(18):1736-1743. I.F.: 8.320

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6. Alcolea D, Vilaplana E, Suárez-Calvet M, Illán-Gala I, Blesa R, Clarimón J, Lladó A, Sánchez-Valle R, Molinuevo JL, García-Ribas G, Compta Y, Martí MJ, Piñol-Ripoll G, Amer-Ferrer G, Noguera A, García-Martín A, Fortea J, Lleó A. **CSF sAPPβ, YKL-40, and neurofilament light in frontotemporal lobar degeneration.** *NEUROLOGY.* 89(2):178-188. I.F.: 8.320

7. Mollenhauer, Brit; Caspell-Garcia, Chelsea J.; Coffey, Christopher S.; Taylor, Peggy; Shaw, Leslie M.; Trojanowski, John Q.; Singleton, Andy; Frasier, Mark; Marek, Kenneth; Galasko, Douglas;Progression Marker Initiative. **Longitudinal CSF biomarkers in patients with early Parkinson disease and healthy controls.** *NEUROLOGY.* 89(19):1959-1969. I.F.: 8.320

8. Lee A., Wang Y., Alcalay R., Mejia-Santana H., Saunders-Pullman R., Bressman S., Corvol J., Brice A., Lesage S., Mangone G., Tolosa E., Pont-Sunyer C., Vilas D., Schüle B., Kausar F., Foroud T., Berg D., Brockmann K., Goldwurm S., Siri C., Asselta R., Ruiz-Martinez J., Mondragón E., Marras C., Ghate T., Giladi N., Mirelman A., Marder K, Michael J. Fox LRRK2 Cohort Consortium. **Penetrance estimate of LRRK2 p.G2019S mutation in individuals of non-Ashkenazi Jewish ancestry.** *MOVEMENT DISORDERS.* 32(10):1432-1438. I.F.: 7.072

9. Höglinger GU, Respondek G, Stamelou M, Kurz C, Josephs KA, Lang AE, Mollenhauer B, Müller U, Nilsson C, Whitwell JL, Arzberger T, Englund E, Gelpi E, Giese A, Irwin DJ, Meissner WG, Pantelyat A, Rajput A, van Swieten JC, Troakes C, Antonini A, Bhatia KP, Bordelon Y, Compta Y, Corvol JC, Colosimo C, Dickson DW, Dodel R, Ferguson L, Grossman M, Kassubek J, Krismer F, Levin J, Lorenzl S, Morris HR, Nestor P, Oertel WH, Poewe W, Rabinovici G, Rowe JB, Schellenberg GD, Seppi K, van Eimeren T, Wenning GK, Boxer AL, Golbe LI, Litvan I, Movement Disorder Society-endorsed PSP Study Group. **Clinical diagnosis of progressive supranuclear palsy: The movement disorder society criteria.** *MOVEMENT DISORDERS.* 32(6):853-864. I.F.: 7.072

10. Pont-Sunyer, Claustre; Tolosa, Eduardo; Caspell-Garcia, Chelsea; Coffey, Christopher; Alcalay, Roy N.; Chan, Piu; Duda, John E.; Facheris, Maurizio; Fernandez-Santiago, Ruben; Marek, Kenneth; Lomena, Francisco; Marras, Connie; Mondragon, Elisabet; Saunders-Pullman, Rachel; Waro, Bjorg;LRRK2 Cohort Consortium. **The Prodromal Phase of Leucine-Rich Repeat Kinase 2-Associated Parkinson Disease: Clinical and Imaging Studies.** *MOVEMENT DISORDERS.* 32(5):726-738. I.F.: 7.072

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12. Cosín-Tomás M., Antonell A., Lladó A., Alcolea D., Fortea J., Ezquerra M., Lleó A., Martí M., Pallàs M., Sanchez-Valle R., Molinuevo J., Sanfeliu C., Kaliman P. **Plasma miR-34a-5p and miR-545-3p as Early Biomarkers of Alzheimer's Disease: Potential and Limitations.** *MOLECULAR NEUROBIOLOGY.* 54(7):5550-5562. I.F.: 6.190

13. Dangla-Valls A, Molinuevo JL, Altirriba J, Sánchez-Valle R, Alcolea D, Fortea J, Rami L, Balasa M, Muñoz-García C, Ezquerra M, Fernández-Santiago R, Lleó A, Lladó A, Antonell A. **CSF microRNA Profiling in Alzheimer's Disease: a Screening and Validation Study.** *MOLECULAR NEUROBIOLOGY.* 54(9):6647-6654. I.F.: 6.190

14. Kun-Rodrigues C, Ross OA, Orme T, Shepherd C, Parkkinen L, Darwent L, Hernandez D, Ansorge O, Clark LN, Honig LS, Marder K, Lemstra A, Scheltens P, van der Flier W, Louwersheimer E, Holstege H, Rogaeva E, St George-Hyslop P, Londos E, Zetterberg H, Barber I, Braae A, Brown K, Morgan K, Maetzler W, Berg D, Troakes C, Al-Sarraj S, Lashley T, Holton J, Compta Y, Van Deerlin V, Trojanowski JQ, Serrano GE, Beach TG, Clarimon J, Lleó A, Morenas-Rodríguez E, Lesage S, Galasko D, Masliah E, Santana I, Diez M, Pastor P, Tienari PJ, Myllykangas L, Oinas M, Revesz T, Lees A, Boeve BF, Petersen RC, Ferman TJ, Escott-Price V, Graff-Radford N, Cairns NJ, Morris JC, Stone DJ, Pickering-Brown S, Mann D, Dickson DW, Halliday GM, Singleton A, Guerreiro R, Bras J. **Analysis of C9orf72 repeat expansions in a large international cohort of dementia with Lewy bodies.** *NEUROBIOL AGING.* 49:214. I.F.: 5.117

15. Giri A, Mok KY, Jansen I, Sharma M, Tesson C, Mangone G, Lesage S, Bras JM, Shulman JM, Sheerin UM, , Díez-Fairen M, Pastor P, Martí MJ, Ezquerra M, Tolosa E, Correia-Guedes L, Ferreira J, Amin N, van Duijn CM, van Rooij J, Uitterlinden AG, Kraaij R, Nalls M, Simón-Sánchez J International Parkinson's Disease Consortium (IPDGC). **Lack of evidence for a role of genetic variation in TMEM230 in the risk for Parkinson's disease in the Caucasian population.** *NEUROBIOL AGING.* 50:167-167.e13. I.F.: 5.117

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17. Antonini A, Poewe W, Chaudhuri KR, Jech R, Pickut B, Pirtošek Z, Szasz J, Valldeoriola F, Winkler C, Bergmann L, Yegin A, Onuk K, Barch D, Odin P, GLORIA study co-investigators. **Levodopa-carbidopa intestinal gel in advanced Parkinson's: Final results of the GLORIA registry.** *PARKINSONISM AND RELATED DISORDERS.* 45:13-20. I.F.: 4.484

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19. Brockmann K, Schulte C, Schneiderhan-Marra N, Apel A, Pont-Sunyer C, Vilas D, Ruiz-Martinez J, Langkamp M, Corvol JC, Cormier F, Knorpp T, Joos TO, Bernard A, Gasser T, Marras C, Schüle B, Aasly JO, Foroud T, Marti-Masso JF, Brice A, Tolosa E, Berg D, Maetzler W. **Inflammatory profile discriminates clinical subtypes in LRRK2-associated Parkinson's disease.** *EUR J NEUROL.* 24(2):427-e6. I.F.: 3.988

20. Buongiorno, Mariateresa; Antonelli, Francesca; Compta, Yaroslau; Fernandez, Yolanda; Pavia, Javier; Lomena, Francisco; Rios, Jose; Ramirez, Isabel; Ramon Garcia, Jose; Soler, Marina; Camara, Ana; Fernandez, Manel; Basora, Misericordia; Salazar, Fatima; Sanchez-Etayo, Gerard; Valldeoriola, Francesc; Raul Barrio, Jorge; Jose Marti, Maria. **Cross-Sectional and Longitudinal Cognitive Correlates of FDDNP PET and CSF Amyloid-beta and Tau in Parkinson's Disease.** *JOURNAL OF ALZHEIMER'S DISEASE.* 55(3):1261-1272. I.F.: 3.731

21. Colom-Cadena, Marti; Grau-Rivera, Oriol; Planellas, Lluis; Cerquera, Catalina; Morenas, Estrella; Helgueta, Sergio; Munoz, Laia; Kulisevsky, Jaime; Jose Marti, Maria; Tolosa, Eduard; Clarimon, Jordi; Lleo, Alberto; Gelpi, Ellen. **Regional Overlap of Pathologies in Lewy Body Disorders.** *JOURNAL OF NEUROPATHOLOGY AND EXPERIMENTAL NEUROLOGY.* 76(3):216-224. I.F.: 3.503

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25. Modreanu R., Cerquera S., Martí M., Ríos J., Sánchez-Gómez A., Cámara A., Fernández M., Compta Y. **Cross-sectional and longitudinal associations of motor fluctuations and non-motor predominance with cerebrospinal τ and Aβ as well as dementia-risk in Parkinson's disease.** *JOURNAL OF THE NEUROLOGICAL SCIENCES.* 373:223-229. I.F.: 2.295

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27. Montori-Palacín E, Prieto-González S, Carrasco-Miserachs I, Altes-Capella J, Compta Y, López-Soto A, Bosch X. **Quick outpatient diagnosis in small district or general tertiary hospitals: A comparative observational study.** *MEDICINE (UNITED STATES).* 96(22):e6886. I.F.: 1.804

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29. Luquin, Maria-Rosario; Kulisevsky, Jaime; Martinez-Martin, Pablo; Mir, Pablo; Tolosa, Eduardo S. **Consensus on the Definition of Advanced Parkinson's Disease: A Neurologists-Based Delphi Study (CEPA Study).** *PARKINSONS DISEASE.* 4047392. I.F.: 1.702

Review / I.F.: 20.845

1. Obeso J., Stamelou M., Goetz C., Poewe W., Lang A., Weintraub D., Burn D., Halliday G., Bezard E., Przedborski S., Lehericy S., Brooks D., Rothwell J., Hallett M., DeLong M., Marras C., Tanner C., Ross G., Langston J., Klein C., Bonifati V., Jankovic J., Lozano A., Deuschl G., Bergman H., Tolosa E., Rodriguez-Violante M., Fahn S., Postuma R., Berg D., Marek K., Standaert D., Surmeier D., Olanow C., Kordower J., Calabresi P., Schapira A., Stoessl A. **Past, present, and future of Parkinson's disease: A special essay on the 200th Anniversary of the Shaking Palsy.** *MOVEMENT DISORDERS.* 32(9):1264-1310. I.F.: 7.072

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3. Contarino, Maria Fiorella; Van den Dool, Joost; Balash, Yacov; Bhatia, Kailash; Giladi, Nir; Koelman, Johannes H.; Lokkegaard, Annemette; Marti, Maria J.; Postma, Miranda; Relja, Maja; Skorvanek, Matej; Speelman, Johannes D.; Zoons, Evelien; Ferreira, Joaquim J.; Vidailhet, Marie; Albanese, Alberto; Tijssen, Marina A. J. **Clinical Practice: evidence-Based Recommendations for the Treatment of Cervical Dystonia with Botulinum Toxin**. *FRONTIERS IN NEUROLOGY.* 8(35):35. I.F.: 3.552

4. Lees AJ, Ferreira J, Rascol O, Reichmann H, Stocchi F, Tolosa E, Poewe W. **Opicapone for**

the management of end-of-dose motor fluctuations in patients with Parkinson's disease treated with L-DOPA. *EXPERT REVIEW OF NEUROTHERAPEUTICS.* 17(7):649-659. I.F.: 3.149

Letters / I.F.: 30.591

1. Gelpi, Ellen; Botta-Orfila, Teresa; Bodi, Laia; Marti, Stefanie; Kovacs, Gabor; Grau-Rivera, Oriol; Lozano, Manuel; Sanchez-Valle, Raquel; Munoz, Esteban; Valldeoriola, Francesc; Pagonabarraga, Javier; Tartaglia, Gian-Gaetano; Mila, Montserrat. **Neuronal intranuclear (hyaline) inclusion disease and fragile X-associated tremor/ataxia syndrome: a morphological and molecular dilemma.** *BRAIN; A JOURNAL OF NEUROLOGY.* 140(8):e51-+. I.F.: 10.292

2. Garrido A., Aldecoa I., Gelpi E., Tolosa E. **Aggregation of α-synuclein in the gonadal tissue of 2 patients with Parkinson disease.** *JAMA NEUROLOGY.* 74(5):606-607. I.F.: 10.029

3. Compta Y, Ramos-Campoy O, Grau-Rivera O, Colom-Cadena M, Clarimón J, Martí MJ, Gelpi E. **Conjoint FTLD-FUS of the neuronal intermediate filament inclusion disease type, progressive supranuclear palsy and alzheimer's pathology presenting as parkinsonism with early falls and late hallucinations, psychosis and dementia.** *NEUROPATHOLOGY AND APPLIED NEUROBIOLOGY.* 43(4):352-357.I.F.: 5.347

4. Mahlknecht, Philipp; Iranzo, Alex; Stefani, Ambra; Serradell, Monica; Santamaria, Joan; Tolosa, Eduardo; Hogl, Birgit; Poewe, Werner. **Caveats of Neurodegenerative Risk Stratification in Idiopathic REM Sleep Behavior Disorder by Use of the MDS Research for Prodromal Parkinson's Disease.** *SLEEP.* 40(10). I.F.: 4.923

Editorial / I.F.: 20.257

1. Compta Y, Martí MJ. **Parkinson disease: What goes around comes around: cognitive impairment as prodromal parkinsonism?** *NATURE REVIEWS NEUROLOGY.* 13(12):709-710. I.F.: 20.257

GRANTS FOR RESEARCH IN PROGRESS

Compta Y. **FAIR-PARK-II A multicentre, parallel group, randomized, placebo-controlled trial of deferiprone (DFP) 15 mg/kg BID.**
Sponsored by: European commission H2020-PHC-2014
Duration: 01/05/2015-30/04/2020

Ezquerra M. **Epigenetic analysis of iPSC-derived dopaminergic neurons and blood cells in Parkinson disease.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00426
Duration: 01/01/2015-31/12/2018

Ezquerra M. **MicroRNAs as biomarkers of the prodromal stage of Parkinson disease.**
Sponsored bay: Michael J. Fox Foundation for Parkinson. MJFF_2015
Duration: 16/06/2016-15/06/2018

Fernández Santiago R. **MicroRNAs as biomarkers of the prodromal stage of Parkinson disease.**
Sponsored by: Michael J. Fox Foundation for Parkinson. MJFF_2015
Duration: 16/06/2016-15/06/2018

Fernández Santiago R. **The beginnings of Parkinson Disease: a study of early disease mechanisms in a humanized in-vitro model.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO). SAF2015-73508-JIN
Duration: 01/01/2017-31/12/2019

Martí MJ. **Fox Trial Finder.**
Sponsored by: Michael J. Fox Foundation for Parkinson. MJFF_2014_01-11937
Duration: 01/09/2015-30/06/2017

Martí MJ. **Catalan Network of Multiple System Atrophy: Biomarkers and Pathophysiology.**
Sponsored by: Fundació Marató TV3. 20142730
Duration: 03/06/2015-30/09/2018

Martí MJ. **LRRK2 peripheral blood mononuclear cells and urine bisample collection.**
Sponsored by: Michael J. Fox Foundation for Parkinson. MJFF_2015
Duration: 01/02/2016-31/01/2018

Martí MJ. **Identification of pathophysiological pathways and candidate biomarkers in the prediagnostic phase of Parkinson's disease.** Instituto de Salud Carlos III (ISCIII). CIBERNED
Duration: 02/03/2016-01/03/2018

Tolosa E. **The Parkinson's progression Markers Initiative (PPMI).**
Sponsored by: Michael J. Fox Foundation for Parkinson. MJFF_2013
Duration: 21/05/2013-31/12/2018

Valldeoriola F. **El sistema nervioso autónomo entérico como biomarcador precoz en la Enfermedad de Parkinson.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01455
Duration: 01/01/2014-31/12/2017

4.4 Neurophysiology and functional studies of the nervous system

LOCATION
HCB building
UB Medical School

WEB
www.ub.edu/neurofisiologia

KEYWORDS
1. **Neurophysiology**
2. **Motor control and sensorimotor integration**
3. **Neuropathic pain**
4. **Sleep**
5. **Epilepsy**
6. **Glutamate receptors**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	110.97	27	11	12
2016	129.87	28	15	8
2017	123.29	20	15	2

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OFTARED
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AGAUR_SGR17

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Jordi Pales (UB)
Ana Tercero (HCB)

STRATEGIC OBJECTIVES

Our goal is to expand on scientific knowledge of functional aspects of the nervous system, with maximum integration of basic and clinical aspects, fundamentally using neurophysiological techniques. Key words of our research include motor control, sensory perception, pain, sleep, epilepsy, neuronal excitability, ion channels, dry eye and glaucoma.

MAIN LINES OF RESEARCH

1. The participation of subcortical motor systems in the execution of movements, postural maintenance and reflex control. Startle and prepulse phenomena.
2. Physiology and physiopathology of neuropathic pain. Nociceptive evoked

TEAM Josep Valls Solé

potentials and reflex reactions to pain. Conscious sensory perception.

3. Study of sleep and its disturbances. Narcolepsy. Excessive daytime sleepiness and REM sleep behaviour disorder. 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.
5. Characterization of ion channels involved in neuronal excitability. Study of sensory transduction and the generation of inflammatory and neuropathic pain.
6. Physiology of aqueous humour drainage and physiopathology of glaucoma. Ocular pathology in aging. Physiology of the ocular trabecular meshwork. Physiopathology of dry eye.
7. Axonal excitability and physiology of peripheral nerve reactions to local anaesthetics or other types of axonal blocks.
8. Role of glutamate receptors and new accessory proteins. Role of mutations in these proteins producing neurological diseases.

RESEARCH GROUP
NEUROPHYSIOLOGY

GROUP LEADER
Xavier Gasull (UB)

Within the field of neurophysiology, the group is interested in establishing the role of different ion channels implicated in shaping the excitability of sensory neurons of the dorsal root and trigeminal ganglia, and determining which alterations occur during inflammatory and neuropathic pain states. We are especially interested 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 and intraocular pressure, we are exploring the role of ion channels that regulate contraction, shape and cell volume and how this is related to the physiopathology of glaucoma.

PUBLICATIONS

Originals / I.F.: 123.287

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2. Iranzo, Alex; Santamaria, Joan; Valldeoriola, Francesc; Serradell, Monica; Salamero, Manel; Gaig, Carles; Ninerola-Baizan, Aida; Sanchez-Valle, Raquel; Llado, Albert; De Marzi, Roberto; Stefani, Ambra; Seppi, Klaus; Pavia, Javier; Hoegl, Birgit; Poewe, Werner; Tolosa, Eduard; Lomena, Francisco. **Dopamine Transporter Imaging Deficit Predicts Early Transition to Synucleinopathy in Idiopathic Rapid Eye Movement Sleep Behavior Disorder.** *ANNALS OF NEUROLOGY.* 82(3):419-428. I.F.: 9.890

3. Toledano P., Orueta R., Rodríguez-Pintó I., Valls-Solé J., Cervera R., Espinosa G. **Peripheral nervous system involvement in systemic lupus erythematosus: Prevalence, clinical and immunological characteristics, treatment and outcome of a large cohort from a single centre.** *AUTOIMMUNITY REVIEWS.* 16(7):750-755. I.F.: 8.961

4. Gaig C, Graus F, Compta Y, Högl B, Bataller L, Brüggemann N, Giordana C, Heidbreder A, Kotschet K, Lewerenz J, Macher S, Martí MJ, Montojo T, Pérez-Pérez J, Puertas I, Seitz C, Simabukuro M, Téllez N, Wandinger KP, Iranzo A, Ercilla G, Sabater L, Santamaría J, Dalmau J. **Clinical manifestations of the anti-IgLON5 disease.** *NEUROLOGY.* 88(18):1736-1743. I.F.: 8.320

5. Iranzo A, Stefani A, Serradell M, Martí MJ, Lomeña F, Mahlknecht P, Stockner H, Gaig C, Fernández-Arcos A, Poewe W, Tolosa E, Högl B, Santamaria J, SINBAR (Sleep Innsbruck Barcelona) group. **Characterization of patients with longstanding idiopathic REM sleep behavior disorder.** *NEUROLOGY.* 89(3):242-248. I.F.: 8.320

6. Amara AW, Chahine LM, Caspell-Garcia C, Long JD, Coffey C, Högl B, Videnovic A, Iranzo A, Mayer G, Foldvary-Schaefer N, Postuma R, Oertel W, Lasch S, Marek K, Simuni T, Parkinson's Progression Markers Initiative. **Longitudinal assessment of excessive daytime sleepiness in early Parkinson's disease.** *JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY.* 88(8):653-662. I.F.: 7.349

7. Padilla, Nelly; Fransson, Peter; Donaire, Antonio; Figueras, Francesc; Arranz, Angela; Sanz-Cortes, Magdalena; Tenorio, Violeta; Bargallo, Nuria; Junque, Carme; Lagercrantz, Hugo; Aden, Ulrika; Gratacos, Eduard. **Intrinsic Functional Connectivity in Preterm Infants with Fetal Growth Restriction Evaluated at 12 Months Corrected Age.** *CEREBRAL CORTEX.* 27(10):4750-4758. I.F.: 6.559

8. Sirisi S, Elorza-Vidal X, Arnedo T, Armand-Ugón M, Callejo G, Capdevila-Nortes X, López-Hernández T, Schulte U, Barrallo-Gimeno A, Nunes V, Gasull X, Estévez R. **Depolarization causes the formation of a ternary complex between GlialCAM, MLC1 and ClC-2 in astrocytes: implications in megalencephalic leukoencephalopathy.** *HUMAN MOLECULAR GENETICS.* 26(13):2436-2450. I.F.: 5.340

9. Fernández-Arcos A, Iranzo A, Serradell M, Gaig C, Guaita M, Salamero M, Santamaria J. **Diagnostic Value of Isolated Mentalis Versus Mentalis Plus Upper Limb Electromyography in Idiopathic REM Sleep Behavior Disorder Patients Eventually Developing a Neurodegenerative Syndrome.** *SLEEP.* 40(4). I.F.: 4.923

10. Gaig, Carles; Iranzo, Alex; Pujol, Montserrat; Perez, Hernando; Santamaria, Joan. **Periodic Limb Movements During Sleep Mimicking REM Sleep Behavior Disorder: A New Form of Periodic Limb Movement Disorder.** *SLEEP.* 40(3). I.F.: 4.923

11. Martinez-Nicolas A, Guaita M, Santamaría J, Montserrat JM, Rol MÁ, Madrid JA. **Circadian impairment of distal skin temperature rhythm in patients with sleep disordered breathing: The effect of CPAP.** *SLEEP.* 40(6). I.F.: 4.923

12. Gaitán-Peñas H, Apaja PM, Arnedo T, Castellanos A, Elorza-Vidal X, Soto D, Gasull X, Lukacs GL, Estévez R. **Leukoencephalopathy -causing CLCN2 mutations are associated with impaired Cl-**

channel function and trafficking. *JOURNAL OF PHYSIOLOGY.* 595(22):6993-7008. I.F.: 4.739

13. Carreon, Teresia A.; Castellanos, Aida; Gasull, Xavier; Bhattacharya, Sanjoy K. **Interaction of cochlin and mechanosensitive channel TREK-1 in trabecular meshwork cells influences the regulation of intraocular pressure.** *SCIENTIFIC REPORTS.* 7(1):452. I.F.: 4.259

14. Mirallave, Ana; Morales, Merche; Cabib, Christopher; Munoz, Esteban J.; Santacruz, Pilar; Gasull, Xavier; Valls-Sole, Josep. **Sensory processing in Huntington's disease.** *CLINICAL NEUROPHYSIOLOGY.* 128(5):689-696. I.F.: 3.866

15. Pujol M., Pujol J., Alonso T., Fuentes A., Pallerola M., Freixenet J., Barbé F., Salamero M., Santamaría J., Iranzo A. **Idiopathic REM sleep behavior disorder in the elderly Spanish community: A primary care center study with a two-stage design using video-polysomnography.** *SLEEP MEDICINE.* 40:116-121. I.F.: 3.391

16. Barrantes S, Sánchez Egea AJ, González Rojas HA, Martí MJ, Compta Y, Valldeoriola F, Simo Mezquita E, Tolosa E, Valls-Solè J. **Differential diagnosis between Parkinson's disease and essential tremor using the smartphone's accelerometer.** *PLOS ONE.* 12(8):e0183843. I.F.: 2.806

17. Carreño M., Bien C., Asadi-Pooya A., Marusic P., Pimentel J., Wehner T., Mohanraj R., Uranga J., Gómez-Ibáñez A., Bargalló N., Rumià J., Setoain X., Pintor L., Bailles E., Falip M., Dalmau J., Gil F., Sperling M., Elisak M., Villanueva V., Roldán P., Boget T., Donaire A., Aparicio J., Graus F. **Epilepsy surgery in drug resistant temporal lobe epilepsy associated with neuronal antibodies.** *EPILEPSY RESEARCH.* 129:101-105. I.F.: 2.367

18. Cisternas A, Aguilar F, Montserrat JM, Àvila M, Torres M, Iranzo A, Berenguer J, Vilaseca I. **Effects of CPAP in patients with obstructive apnoea: is the presence of allergic rhinitis relevant?** *SLEEP AND BREATHING.* 21(4):893-900. I.F.: 2.288

19. Casajuana C, López-Pelayo H, Mercedes Balcells M, Miquel L, Teixidó L, Colom J, Gual A. **Working on a Standard Joint Unit: A pilot test.** *ADICCIONES.* 29(4):227-232. I.F.: 2.077

20. Moren, C.; Gonzalez-Casacuberta, I.; Navarro-Otano, J.; Juarez-Flores, D.; Vilas, D.; Garrabou, G.; Milisenda, J. C.; Pont-Sunyer, C.; Catalan-Garcia, M.; Guitart-Mampel, M.; Tobias, E.; Cardellach, F.; Valldeoriola, F.; Iranzo, A.; Tolosa, E. **Colonic Oxidative and Mitochondrial Function in Parkinson's Disease and Idiopathic REM Sleep Behavior Disorder.** *PARKINSONS DISEASE.* 9816095. I.F.: 1.702

Review / I.F.: 2.605

1. Leote J, Pereira P, Valls-Sole J. **Double peak sensory nerve action potentials to single stimuli in nerve conduction studies.** *MUSCLE AND NERVE.* 55(5):619-625. I.F.: 2.605

Letters / I.F.: 9.846

1. Iranzo, Alex; Serradell, Monica; Santamaria, Joan. **Excessive Daytime Sleepiness Does Not Predict Neurodegeneration in Idiopathic REM Sleep Behavior Disorder.** *SLEEP.* 40(12). I.F.: 4.923

2. Mahlknecht, Philipp; Iranzo, Alex; Stefani, Ambra; Serradell, Monica; Santamaria, Joan; Tolosa, Eduardo; Hogl, Birgit; Poewe, Werner. **Caveats of Neurodegenerative Risk Stratification in Idiopathic REM Sleep Behavior Disorder by Use of the MDS Research for Prodromal Parkinson's Disease.** *SLEEP.* 40(10). I.F.: 4.923

Editorial / I.F.: 10.463

1. Iranzo A., Silber M. **Stop, look, and listen: Sleep in movement disorders.** *MOVEMENT DISORDERS.* 32(5):633-635. I.F.: 7.072

2. Stefani A, Iranzo A, Santamaria J, Högl B, SINBAR (Sleep Innsbruck Barcelona) group. **Description of sleep paralysis in The Brothers Karamazov by Dostoevsky.** *SLEEP MEDICINE.* 32:198-200. I.F.: 3.391

Case Reports / I.F.: 13.564

1. Perez-Carbonell, L.; Silva, C.; Matos, N.; Gaig, C.; Iranzo, A.; Santamaria, J. **Actigraphy: a useful tool to monitor sleep-related hypermotor seizures.** *SLEEP MEDICINE.* 40:1-3. I.F.: 3.391

2. Pérez-Carbonell L., Silva C., Gaig C., Carreño M., Santamaria J., Iranzo A. **Periodic neck myoclonus during sleep.** *SLEEP* MEDICINE. 38:71-72. I.F.: 3.391

3. Matos, Nuria; Gaig, Carles; Santamaria, Joan; Iranzo, Alex. **Cataplexy causing subdural hematomas.** *SLEEP MEDICINE.* 30:15-16. I.F.: 3.391

4. Ramos-Campoy, Oscar; Gaig, Carles; Villas, Monica; Iranzo, Alex; Santamaria, Joan. **REM sleep behavior disorder causing subdural hematoma.** *SLEEP MEDICINE.* 30:43-44. I.F.: 3.391

GRANTS FOR RESEARCH IN PROGRESS

Carreño MM. **Eficacia y seguridad de la estimulación trigeminal externa como tratamiento de la epilepsia resistente a fármacos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00509
Duration: 01/01/2014-30/06/2018

Casanova-Molla J. **Caracterización del daño axonal en la neuropatía por quimioterapia: perfil temporal de la degeneración y regeneración axonal y su repercusión en los diferentes sistemas funcionales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI 16/00984
Duration: 01/01/2017-31/12/2019

Gasull X. **Bases fisiopatológicas del dolor crónico: foco en enfermedades inflamatorias crónicas de la superficie ocular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00141
Duration: 01/01/2015-31/12/2017

Gasull X. RETIC Oftared: **Prevencion, deteccion precoz, tratamiento y rehabilitacion de las patologias oculares.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0008/0014
Duration: 01/01/2017-31/12/2021

Iranzo A. **Detección in-vivo de alfa-sinucleina en biopsia de glándulas salivares menores en pacientes con trastorno de conducta del sueño REM, como modelo premotor de la enfermedad de Parkinson.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/01050
Duration: 01/01/2017-31/12/2019

Valls-Sole J. **Estudio de respuestas preconscientes y conscientes al dolor evocado en sujetos sanos y en pacien.tes con polineuropatía de fibra fina.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13 0526
Duration: 01/01/2014-30/09/2017

Santamaria J. **Ictal brain SPECT in the premotor stage of Parkinson disease.**
Sponsored by: Fundació la Marató TV3. 20143910
Duration: 1/8/2015-31/07/2017

Soto D. **Modulación de receptores AMPA por CPT1C: papel en la fisiología neuronal.**
Sponsored by: Ministerio de Economía y Competitividad. BFU2014-57562-P
Duration: 01/01/2015-31/12/2017

DOCTORAL THESES

Gasull X. **Role of K2p channel TRESK in nocicepive and chronic pain.**
PhDstudent: Aida Castellanos Esparraguera

4.5 Muscle research and mitochondrial function

LOCATION
CELLEX building 4B
Faculty of Medicine
University of Barcelona

KEYWORDS
1. **Muscle**
2. **Mitochondria**
3. **Cardiomyopathy**
4. **Chronic fatigue syndrome**
5. **Septic shock**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	89.97	15	11	2
2016	62.86	15	9	6
2017	60.31	16	9	4

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POST-DOCTORAL RESEARCHERS
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Anna Sandra Hernández (HCB)
Constanza Isabel Morén (CIBER)

PRE-DOCTORAL RESEARCHERS
Sara Fernández (HCB)
Laura García (HCB)
Ingrid González (FCRB)
Mariona Guitart (IDIBAPS)
Diana Luz Juárez (CONACYT)
José Milisenda (HCB)
Pedro Juan Moreno (HCB)
Anna Peguero (HCB)

TECHNICIANS
Esther Tobias (UB)

COLLABORATORS
Xavier Bosch (HCB)

VISITING SCIENTISTS
Sofya Pozdniakova (Institute of Gender in Medicine, Center for Cardiovascular Research, Charite, Germany)

STRATEGIC OBJECTIVES

1. Management of patients with rare diseases (metabolic, mitochondrial and neuromuscular).
2. Mitochondrial, inflammatory, autoimmune and toxic muscle disease.
3. Mitotoxicity.
4. Mitochondrial involvement in neurodegeneration and psychiatrics.
5. Mitochondrial basis of obstetric outcome.
6. Cardiomyopathy in alcoholism and hypertension.
7. Chronic fatigue syndrome (CFS).
8. Septic shock and organ failure.
9. Journalology.

MAIN LINES OF RESEARCH

1. Diagnosis and management of patients with rare diseases, inborn errors of metabolism or neuromuscular disorders (coordinating 42 groups). Research, training, register and biobanking.

TEAM. Josep M. Grau Junyent

2. Etiology, biomarkers and therapeutics in muscle pathology; special focus in inclusion body myositis, myopathy secondary to statins and mtDNA mantainance-syndromes.
3. Mitochondrial toxicity induced by drugs (antiretrovirals, antibiotics, antipsychotics) or toxic agents (HIV, CO, tobacco).
4. Etiology, biomarkers and therapeutics in neurodegeneration and psychiatrics: Parkinson disease (familial Parkin and LRRK2 or idiopathic forms), X-Fragile syndrome, schizophrenia and autism.
5. Etiology, biomarkers and therapeutics in preeclampsia.and intrauterine growth restriction with associated cardiovascular fetal remodeling.
6. Pathological mechanisms of alcohol and hypertension at cardiocirculatory level: (i) Prognosis of myocardiopathy and management options; (ii) Muscle and myocardial apoptosis; (iii) Myocardial regeneration and fibrosis; (iv) and Myocyte hyperthrophy (myostatin, IGF-1, Titin, FGF-21).
7. Clinical and functional repercussions of CFS. (i) Long-term multidisciplinar therapy, (ii) Role of co-morbidity, (iii) Influence of chemicals and environment.
8. Clinical and translational research on septic shock and multiorgan failure. Research on antibiotic policies in critically-ill patients. Critical care issues of special populations: elderly patients, hemato-oncological patients, patients with autoimmune diseases, patients with Human Immunodeficiency infection, patients with imported tropical diseases and others.
9. Journalology of biomedical journals: research of editorial and ethical policies of biomedical journals.

PUBLICATIONS

Originals / I.F.: 60.311

1. Chamorro, Antonio J.; Roson-Hernandez, Beatriz; Medina-Garcia, Jose-A.; Muga-Bustamante, Roberto; Fernandez-Sola, Joaquin; Martin-Gonzalez, M. -Candelaria; Seco-Hernandez, Elena; Novo-Veleiro, Ignacio; Suarez-Cuervo, Carlos; Mateos-Diaz, Ana M.; Monte-Secades, Rafael; Machado-Prieto, Begona; Puerta-Louro, Ruben; Prada-Gonzalez, Cristina; Fernandez-Rial, Alvaro; Sabio-Repiso, Patricia; Vazquez-Vigo, Rocio; Antoli-Royo, Ana-C.; Gomila-Grange, Aina; Felipe-Perez, Nieves-C.; Sanvisens-Berge, Arantza; Antunez-Jorge, Emilia; Fernandez-Rodriguez, Camino-M.; Alvela-Suarez, Lucia; Fidalgo-Navarro, Alba; Marcos, Miguel;Wernicke-SEMI Grp; Alcohol Alcoholism Grp; Spanish Soc Internal Med SEMI. **Differences Between Alcoholic and Nonalcoholic Patients With Wernicke Encephalopathy: A Multicenter Observational Study.** *MAYO CLINIC PROCEEDINGS.* 92(6):899-907. I.F.: 6.686

2. Alvarez-Mora MI; Rodriguez-Revenga L; Madrigal I; Guitart-Mampel M; Garrabou G; Mila M. **Impaired Mitochondrial Function and Dynamics in the Pathogenesis of FXTAS.** *MOLECULAR NEUROBIOLOGY.* 54(9):6896-6902. I.F.: 6.190

3. Romero-Moya D, Santos-Ocaña C, Santos-Ocaña C, Castaño J, Garrabou G, Garrabou G, Rodríguez-Gómez JA, Ruiz-Bonilla V, Ruiz-Bonilla V, Bueno C, González-Rodríguez P, González-Rodríguez P, Giorgetti A, Perdiguero E, Perdiguero E, Prieto C, Moren-Nuñez C, Moren-Nuñez C, Fernández-Ayala DJ, Fernández-Ayala DJ, Victoria Cascajo M, Victoria Cascajo M, Velasco I, Velasco I, Canals JM, Canals JM, Canals JM, Canals JM, Montero R, Montero R, Yubero D, Jou C, Jou C, López-Barneo J, López-Barneo J, Cardellach F, Cardellach F, Muñoz-Cánoves P, Muñoz-Cánoves P, Muñoz-Cánoves P, Muñoz-Cánoves P, Artuch R, Artuch R, Navas P, Navas P, Menendez P, Menendez P, Menendez P. **Genetic rescue of Mitochondrial and Skeletal Muscle Impairment in an IPSCs Model of Coenzyme Q10 Deficiency.** *STEM CELLS.* 35(7):1687-1703. I.F.: 5.599

4. Hernandez S., Moren C., Catalán-García M., Lopez M., Guitart-Mampel M., Coll O., Garcia L., Milisenda J., Justamante A., Gatell J., Cardellach F., Gratacos E., Miro Ò., Garrabou G. **Mitochondrial toxicity and caspase activation in HIV pregnant women**. *JOURNAL OF CELLULAR AND MOLECULAR MEDICINE.* 21(1):26-34. I.F.: 4.499

5. Morén C., González-Casacuberta I., Álvarez-Fernández C., Bañó M., Catalán-Garcia M., Guitart-Mampel M., Juárez-Flores D., Tobías E., Milisenda J., Cardellach F., Gatell J., Sánchez-Palomino S., Garrabou G. **HIV-1 promonocytic and lymphoid cell lines: An in vitro model of in vivo mitochondrial and apoptotic lesion.** *JOURNAL OF CELLULAR AND MOLECULAR MEDICINE.* 21(2):402-409. I.F.: 4.499

6. Garrabou G, Soriano À, Pinós T, Casanova-Mollà J, Pacheu-Grau D, Morén C, García-Arumí E, Morales M, Ruiz-Pesini E, Catalán-Garcia M, Milisenda JC, Lozano E, Andreu AL, Montoya J, Mensa J, Cardellach F. **Influence of Mitochondrial Genetics on the Mitochondrial Toxicity of Linezolid in Blood Cells and Skin Nerve Fibers.** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY.* 61(9): e00542-17. I.F.: 4.302

7. Suárez-Calvet X., Gallardo E., Pinal-Fernandez I., De Luna N., Lleixà C., Díaz-Manera J., Rojas-García R., Castellví I., Martínez M., Grau J., Selva-O'Callaghan A., Illa I. **RIG-I expression in perifascicular myofibers is a reliable biomarker of dermatomyositis.** *ARTHRITIS RESEARCH AND THERAPY.* 19(1):174. I.F.: 4.121

8. Hernández S, Catalán-García M, Morén C, García-Otero L, López M, Guitart-Mampel M, Milisenda J, Coll O, Cardellach F, Gratacós E, Miró Ò, Garrabou G. **Placental Mitochondrial Toxicity, Oxidative Stress, Apoptosis And Adverse Perinatal Outcomes In Hiv-Pregnancies Under Antiretroviral Treatment Containing Zidovudine.** *JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES.* 75(4):E113-E119. I.F.: 3.935

9. Santacatterina F., Sánchez-Aragó M., Catalán-García M., Garrabou G., Arenas C., Grau J., Cardellach F., Cuezva J. **Pyruvate kinase M2 and the mitochondrial ATPase Inhibitory Factor 1 provide novel biomarkers of dermatomyositis: A metabolic link to oncogenesis.** *JOURNAL OF TRANSLATIONAL MEDICINE.* 15(1):29. I.F.: 3.786

10. Torrell H., Alonso Y., Garrabou G., Mulet D., Catalán M., Valiente-Pallejà A., Carreño-Gago L., García-Arumí E., Montaña E., Vilella E., Martorell L. **Mitochondrial dysfunction in a family with psychosis and chronic fatigue syndrome.** *MITOCHONDRION.* 34:1-8. I.F.: 3.704

11. Bosch X, Montori E, Guerra-García M, Costa-Rodríguez J, Quintanilla MH, Tolosa-Chapasian PE, Moreno P, Guasch N, López-Soto A. **A comprehensive evaluation of the gastrointestinal tract in iron-deficiency anemia with predefined hemoglobin below 9mg/dL: A prospective cohort study.** *DIGESTIVE AND LIVER DISEASE.* 49(4):417-426. I.F.: 3.061

12. Bosch X., Monclús E., Escoda O., Guerra-García M., Moreno P., Guasch N., López-Soto A. **Unintentional weight loss: Clinical characteristics and outcomes in a prospective cohort of 2677 patients.** *PLOS ONE.* 12(4):e0175125. I.F.: 2.806

13. Bosch X., Montori E., Guerra-García M., Costa-Rodríguez J., Quintanilla M., Tolosa-Chapasian P., Moreno P., Guasch N., López-Soto A. **Haemoglobin responses to transfusion in severe iron deficiency anaemia: potential impact of gastrointestinal disorders.** *VOX SANGUINIS.* 112(3):257-267. I.F.: 2.192

14. Santolaya M, Aldea M, Grau J, Estrada M, Barau M, Buron A, Francesc M, Castell A, Rodriguez C, Gascón P, Rius P, Guayta-Escolies R, PROCOLON research group (all members of this group are listed in Author Note). **Evaluating the appropriateness of a community pharmacy model for a colorectal cancer screening program in Catalonia (Spain).** *JOURNAL OF ONCOLOGY PHARMACY PRACTICE.* 23(1):26-32. I.F.: 1.735

15. Moren, C.; Gonzalez-Casacuberta, I.; Navarro-Otano, J.; Juarez-Flores, D.; Vilas, D.; Garrabou, G.; Milisenda, J. C.; Pont-Sunyer, C.; Catalan-Garcia, M.; Guitart-Mampel, M.; Tobias, E.; Cardellach, F.; Valldeoriola, F.; Iranzo, A.; Tolosa, E. **Colonic Oxidative and Mitochondrial Function in Parkinson's Disease and Idiopathic REM Sleep Behavior Disorder.** *PARKINSONS DISEASE.* 9816095. I.F.: 1.702

16. Cochon L, Ovalle A, Nicolás JM, Baez AA. **Acute Care Diagnostic Collaboration: Bayesian modeling comparative diagnostic assessment of lactate, procalcitonin and CRP in risk stratified population by Mortality in ED (MEDS) score.** *AMERICAN JOURNAL OF EMERGENCY MEDICINE.* 35(4):564-568. I.F.: 1.494

Review / I.F.: 1.47

1. Planavila, Anna; Fernandez-Sola, Joaquim; Villarroya, Francesc. **Cardiokines as Modulators of Stress-Induced Cardiac Disorders.** *ADVANCES IN PROTEIN CHEMISTRY AND STRUCTURAL BIOLOGY.* 108:227-256. I.F.: 1.470

Letters / I.F.: 8.306

1. Puigví L, Baumann T, Fernández S, Castro P, Pereira A, Merino A. **Massive erythrophagocytosis by peripheral monocytes and neutrophils in parvovirus-B19 autoimmune hemolytic anemia.** *ANNALS OF HEMATOLOGY.* 96(5):881-882. I.F.: 3.083

2. Fernandez, Sara; Nicolas, David; Pericas, Juan M.; Castro Rebollo, Pedro; Vila, Jordi; Miro, Josep M.; Blanco, Jose L.; Nicolas, Josep M. **A case of Mycoplasma hominis disseminated infection in a human immunodeficiency virus-1-infected pregnant woman with hypogammaglobulinemia.** *JOURNAL OF MICROBIOLOGY, IMMUNOLOGY AND INFECTION.* 50(1):118-119. I.F.: 2.973

3. Zamora C; Tomas X; Milisenda J. **Focal myositis associated to radiculopathy.** *MEDICINA CLINICA.* 149(8):371-372. I.F.: 1.125

4. Poch E; Garrabou G; Alcubilla-Prats P. **Reply.** *MEDICINA CLINICA.* 149(6):271-272. I.F.: 1.125

Case Reports / I.F.: 8.538

1. Gomez-Junyent, Joan; Jesus Pinazo, Maria; Castro, Pedro; Fernandez, Sara; Mas, Jordi; Chaguaceda, Cristian; Pellice, Martina; Gascon, Joaquim; Munoz, Jose. **Human African Trypanosomiasis in a Spanish traveler returning from Tanzania.** *PLOS NEGLECTED TROPICAL DISEASES.* 11(3):e0005324. I.F.: 3.834

2. Fervienza A., Bodro M., Castro P., Hernández S., Teixidó I., Espinosa G., Cervera R. **Brain abscess due to Listeria monocytogenes after HELLP syndrome in a patient with antiphospholipid syndrome.** *LUPUS.* 26(9):1002-1004. I.F.: 2.454

3. Milisenda J., Rico Caballero V., García A., Tomás X., Grau J. **«Extended» Beevor's sing as a new clinical sign in sporadic inclusion body myositis.** *MEDICINA CLINICA.* 148(8):e43. I.F.: 1.125

4. Alcubilla-Prats, Pau; Sole, Manel; Botey, Albert; Maria Grau, Josep; Garrabou, Gloria; Poch, Esteban. **Kidney involvement in MELAS syndrome: Description of 2 cases.** *MEDICINA CLINICA.* 148(8):357-361. I.F.: 1.125

GRANTS FOR RESEARCH IN PROGRESS

Cardellach F. **Molecular links between diabetes and neurodegenerative disorders.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE14/00061
Duration: 01/01/2015-31/12/2018

Cardellach F. **Influencia de la dieta en la modulación mitocondrial y de cardiomiocinas del remodelado cardiovascular fetal asociado al crecimiento intrauterino restringido.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00817
Duration: 01/01/2016-31/12/2018

Cardellach F. **Elaboración de un modelo in vitro de neuonas dopaminérgicas derivadas de pacientes con enfermedad de Parkinson: plataforma para estudios moleculares y terapéuticos Investigador.**
Sponsored by: Fundación Privada Cellex. 17/420
Duration: 29/05/2017-31/12/2018

Castro P. **Caracterización de la disfunción endotelial en los síndromes sépticos e influencia del defibrotide.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00832
Duration: 01/01/2013-31/06/2017

Fernandez-Solà J. **Cell Death in Alcoholic Heart and Muscle.**
Sponsored by: National Institutes of Health (NIH). 1U01AA021122
Duration: 01/05/2015-30/04/2017

Fernàndez-Solà J. **Paper de les noves cardiomiocines FGF21 i Metrnl en el dany cardíac induït per l'alcoholisme i la hipertensió arterial.**
Sponsored by: Fundació la Marató de TV3. 20153331
Duration: 29/06/2016-28/06/2019

Garrabou G, Moren C. **Alteraciones mitocondriales en modelos celular de la Enfermedad de Parkinson.**
Sponsored by: Consejo Nacional de Ciencia y Tecnología (CONACYT). 328988
Duration: 01/01/2014-31/12/2017

Grau JM. **Identificación de nuevos antígenos en pacientes con miopatía inflamatoria.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). 15/02100
Duration: 01/01/2015-31/12/2018

DOCTORAL THESES

Grau JM, Garrabou G. **Mitochondrial profile and amyloidogenic molecules in sporadic inclusion body myositis.**
PhD student: Marc Catalán Garcia

Coll O, Garrabou G. **Perinatal outcomes, mitochondrial toxicity and apoptosis in hiv-treated pregnant women and in utero exposed newborns.**
PhD student: Anna Sandra Hernández Aguado

4.6 Pathophysiology and treatment of neurodegenerative disorders

LOCATION
CELLEX building 3B
UB School of Medicine

KEYWORDS
1. **Huntington's disease**
2. **Motor and cognitive function**
3. **Psychiatric disturbances**
4. **Neuroprotection**
5. **Trophic factors**
6. **Stem cells**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	49.83	9	8	1
2016	73.96	15	11	4
2017	91.75	14	13	1

TEAM INVOLVED IN
CIBERNED
HD-iPSCs Consortium
AGAUR_SGR14

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Albert Giralt (UB)
Giovanni Iacono (IDIBAPS)
Mercè Massana (IDIBAPS)
Andrés Míguez (IDIBAPS)
Ana Saavedra (CIBER)
Philip Gordon Thomas Sanders (IDIBAPS)

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Andrea Comella (UB)
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Sara Fernández (UB)
Gerardo García (UB)
Marta García (UB)
Ened Rodríguez (UB)
Cristina Salado (UB)
Nuria Suelves (UB)

TECHNICIANS
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Mireia Galofré (IDIBAPS)
Cristina Herranz (UB)
Ana López (CIBER)
Maite Muñoz (UB)
Unai Perpiña (UB)

STRATEGIC OBJECTIVES

1. Study of the cellular and molecular bases involved in neuronal dysfunction and death associated to motor, psychiatric and cognitive alterations in basal ganglia neurodegenerative disorders.
2. Use of stem cell technology to differentiate neurons for using in regenerative medicine for neurodegenerative disorders.

MAIN LINES OF RESEARCH

1. **Group of neuroprotection and neuronal plasticity in Huntington's disease.** PI: Jordi Alberch: To study the mechanisms that modulate cortico-striatal connectivity for understanding the intracellular mechanisms to develop molecules that modulate neuronal plasticity for the treatment of Huntington's disease.

TEAM Jordi Alberch

2. **Group of kinases and phosphatases in neuronal function and dysfunction.** PI: Esther Pérez-Navarro: The group is interested in studying the involvement of kinases and phosphatases in the control of motor and cognitive processes in Huntington's disease.
3. **Group of neurodegeneration and cognitive dysfunction in Huntington's Disease.** PI: Silvia Ginés: The research group is interested in defining the molecular mechanisms involved in depressive, cognitive and motor disorders in Huntington's disease.
4. **Group of stem cells and regenerative medicine.** PI: Josep M. Canals: To study the mechanisms underlying the differentiation of stem cells into neurons, for exploring the cellular mechanisms involved in Huntington's and Parkinson's disease. Another line of research is the characterization of extrinsic factors and new transcription factors of human and mouse brain development.

PUBLICATIONS

Originals / I.F.: 91.748

1. Lim R., Salazar L., Wilton D., King A., Stocksdale J., Sharifabad D., Lau A., Stevens B., Reidling J., Winokur S., Casale M., Thompson L., Pardo M., Díaz-Barriga A., Straccia M., Sanders P., Alberch J., Canals J., Kaye J., Dunlap M., Jo L., May H., Mount E., Anderson-Bergman C., Haston K., Finkbeiner S., Kedaigle A., Gipson T., Yildirim F., Ng C., Milani P., Housman D., Fraenkel E., Allen N., Kemp P., Atwal R., Biagioli M., Gusella J., MacDonald M., Akimov S., Lim R., Salazar L., Wilton D., King A., Stocksdale J., Sharifabad D., Lau A., Stevens B., Reidling J., Winokur S., Casale M. **Developmental alterations in Huntington's disease neural cells and pharmacological rescue in cells and mice.** *NATURE NEUROSCIENCE.* 20(5):648-660. I.F.: 17.839

2. Giralt A, Brito V, Chevy Q, Simonnet C, Otsu Y, Cifuentes-Díaz C, de Pins B, Coura R, Alberch J, Ginés S, Poncer JC, Girault JA. **Pyk2 modulates hippocampal excitatory synapses and contributes to cognitive deficits in a Huntington's disease model.** *NATURE COMMUNICATIONS.* 8:15592. I.F.: 12.124

3. Cariulo C., Azzollini L., Verani M., Martufi P., Boggio R., Chiki A., Deguire S., Cherubini M., Gines S., Lawrence Marsh J., Conforti P., Cattaneo E., Santimone I., Squitieri F., Lashuel H., Petricca L., Caricasole A. **Phosphorylation of huntingtin at residue T3 is decreased in Huntington's disease and modulates mutant huntingtin protein conformation.** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA.* 114(50):E10809-E10818. I.F.: 9.661

4. Martín-Ibáñez R., Pardo M., Giralt A., Miguez A., Guardia I., Marion-Poll L., Herranz C., Esgleas M., Barriga G., Edel M., Vicario-Abejón C., Alberch J., Girault J., Chan S., Kastner P., Canals J. **Helios expression coordinates the development of a subset of striatopallidal medium spiny neurons.** *DEVELOPMENT.* 144(8):1566-1577. I.F.: 5.843

5. Romero-Moya D, Santos-Ocaña C, Santos-Ocaña C, Castaño J, Garrabou G, Garrabou G, Rodríguez-Gómez JA, Ruiz-Bonilla V, Ruiz-Bonilla V, Bueno C, González-Rodríguez P, González-Rodríguez P, Giorgetti A, Perdiguero E, Perdiguero E, Prieto C, Moren-Nuñez C, Moren-Nuñez C, Fernández-Ayala DJ, Fernández-Ayala DJ, Victoria Cascajo M, Victoria Cascajo M, Velasco I, Velasco I, Canals JM, Canals JM, Canals JM, Canals JM, Montero R, Montero R, Yubero D, Jou C, Jou C, López-Barneo J, López-Barneo J, Cardellach F, Cardellach F, Muñoz-Cánoves P, Muñoz-Cánoves P, Muñoz-Cánoves P, Muñoz-Cánoves P, Artuch R, Artuch R, Navas P, Navas P, Menendez P, Menendez P, Menendez P. **Genetic rescue of Mitochondrial and Skeletal Muscle Impairment in an IPSCs Model of Coenzyme Q10 Deficiency.** *STEM CELLS.* 35(7):1687-1703. I.F.: 5.599

6. García-Díaz Barriga G, Giralt A, Anglada-Huguet M, Gaja-Capdevila N, Orlandi JG, Soriano J, Canals JM, Alberch J. **7,8 Dihydroxyflavone ameliorates cognitive and motor deficits in a Huntington's disease mouse model through specific activation of the PLCγ1 pathway.** *HUMAN MOLECULAR GENETICS.* 26(16):3144-3160. I.F.: 5.340

7. Pulido-Salgado M., Vidal-Taboada J., Garcia Diaz-Barriga G., Serratosa J., Valente T., Castillo P., Matalonga J., Straccia M., Canals J., Valledor A., Solà C., Saura J. **Myeloid C/EBPβ deficiency reshapes microglial gene expression and is protective in experimental autoimmune encephalomyelitis.** *JOURNAL OF NEUROINFLAMMATION.* 14(1):54. I.F.: 5.102

8. Giralt A., Gómez-Climent M., Alcalá R., Bretin S., Bertrand D., María Delgado-García J., Pérez-Navarro E., Alberch J., Gruart A. **The AMPA receptor positive allosteric modulator S 47445 rescues in vivo CA3-CA1 long-term potentiation and structural synaptic changes in old mice**. *NEUROPHARMACOLOGY.* 123:395-409. I.F.: 5.012

9. Martín-Ibáñez R, Guardia I, Pardo M, Herranz C, Zietlow R, Vinh NN, Rosser A, Canals JM. **Insights in spatio-temporal characterization of human fetal neural stem cells.** *EXPERIMENTAL NEUROLOGY.* 291:20-35. I.F.: 4.706

10. Saavedra A, Fernández-García S, Cases S, Puigdellívol M, Alcalá-Vida R, Martín-Flores N, Alberch J, Ginés S, Malagelada C, Pérez-Navarro E. **Chelerythrine promotes Ca(2+)-dependent calpain activation in neuronal cells in a PKC-independent manner.** *BIOCHIMICA ET BIOPHYSICA ACTA-GENERAL SUBJECTS.* 1861(4):922-935. I.F.: 4.702

11. Lao-Peregrín C., Ballesteros J., Fernández M., Zamora-Moratalla A., Saavedra A., Gómez Lázaro M., Pérez-Navarro E., Burks D., Martín E. **Caffeine-mediated BDNF release regulates long-term synaptic plasticity through activation of IRS2 signaling.** *ADDICTION BIOLOGY.* 22(6):1706-1718. I.F.: 4.603

12. Suelves N, Kirkham-McCarthy L, Lahue RS, Ginés S. **A selective inhibitor of histone deacetylase 3 prevents cognitive deficits and suppresses striatal CAG repeat expansions in Huntington's disease mice.** *SCIENTIFIC REPORTS.* 7(1):6082. I.F.: 4.259

13. Daldin M., Fodale V., Cariulo C., Azzollini L., Verani M., Martufi P., Spiezia M., Deguire S., Cherubini M., MacDonald D., Weiss A., Bresciani A., Vonsattel J., Petricca L., Marsh J., Gines S., Santimone I., Marano M., Lashuel H., Squitieri F., Caricasole A. **Polyglutamine expansion affects huntingtin conformation in multiple Huntington's disease models.** *SCIENTIFIC REPORTS.* 7(1):5070. I.F.: 4.259

14. Illa M., Brito V., Pla L., Eixarch E., Arbat-Plana A., Batallé D., Muñoz-Moreno E., Crispi F., Udina E., Figueras F., Ginés S., Gratacós E. **Early Environmental**

Enrichment Enhances Abnormal Brain Connectivity in a Rabbit Model of Intrauterine Growth Restriction. *FETAL DIAGNOSIS AND THERAPY*. I.F.: 2.699

Review / I.F.: 2.466

1. Cherubini M., Ginés S. **Mitochondrial fragmentation in neuronal degeneration: Toward an understanding of HD striatal susceptibility.** *BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS*. 483(4):1063-1068. I.F.: 2.466

GRANTS FOR RESEARCH IN PROGRESS

Alberch J. **Enfermedades neurodegenerativas: enfermedad de Huntington.**
Sponsored by: Ministerio de Economía y Competitividad. CIBERNED
Duration: 01/01/2006-31/12/2019

Alberch J. **Modulation of synaptic plasticity deficits as a therapeutic strategy for Huntington's disease.**
Sponsored by: Fundació la Marató de TV3.
Duration: 04/03/2015-28/02/2018

Canals JM. **Desarrollo, diferenciación y maduración neuronal en la enfermedad de Huntington.**
Sponsored by: Ministerio de Ciencia e Innovación. SAF2015-66505-R
Duration: 01/01/2016-31/12/2019

Canals JM. **Centre per a la producció i validació de teràpies avançades - ub (cat-ub).**
Sponsored by: Agència per a la Competitivitat de l'Empresa (ACCIÓ). TECDTP15-1-0022
Duration: 01/01/2016-31/12/2017

Canals JM. **ADVANCECAT: acceleradora pel desenvolupament de teràpies avançades a Catalunya (ADVANCECAT: accelerating development for advanced therapies in Catalonia).**
Sponsored by: Agència per a la Competitivitat de l'Empresa. RIS3CAT
Duration: 01/01/2016-31/12/2019

Canals JM. **Red de Terapia Celular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0011/0012
Duration: 01/01/2017-31/12/2021

Gines S. **Cdk5 como nueva diana terapéutica y biomarcador del trastorno depresivo en la enfermedad de Huntington.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2015-67474-R
Duration: 01/12/2015-31/01/2018

Pérez E. **Optimización y desarrollo de un agente terapéutico basado en ácidos nucleicos para el tratamiento de la enfermedad de Huntington.**
Sponsored by: Ministerio de Economía y Competitividad. RTC-2015-3731-1
Duration: 29/09/2015-31/12/2017

Pérez E. **Evaluación de la eficacia de inhibidores epigenéticos en modelos experimentales de patologías humanas.**
Sponsored by: Ministerio de Economía y Competitividad. RTC-2015-3898-1
Duration: 29/09/2015-31/12/2017

Pérez E. **Alteraciones de la lámina nuclear y de la traducción proteica como nuevos mecanismos patogénicos en la enfermedad de Huntington.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2016-0873R
Duration: 30/12/2016-30/12/2019

DOCTORAL THESES

Pérez E. **PKC and nuclear lamina alterations: Involvement in Huntington's disease pathophysiology.**
PhD student: Rafael Alcalá Vida

Canals JM, Martín R. **Caracterización de factores implicados en el desarrollo estriatal.**
PhD student: Inés Guardia Pena

4.7 Biological bases of psychiatric disorders and nuclear psychiatry

LOCATION
HCB building

KEYWORDS
1. **Schizophrenia**
2. **Bipolar disorders**
3. **Psychiatry**
4. **Addiction**
5. **Child and adolescent psychiatry and psychology**
6. **Depression**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	243.58	66	32	27
2016	424.43	89	62	14
2017	301.37	84	51	28

TEAM INVOLVED IN
CIBERSAM
AGAUR_SGR14
Red de Trastornos Adictivos (RTA-RETICS)

AWARDS

Premi excel.lència professional
Institution: Col·legi Oficial de Metges de Barcelona (COMB)
Awardee/s: Miquel Bernardo

2017 Research award in the area of biological psychiatry
Institution: World Federation of Societies of Biological Psychiatry (WFSBP)
Awardee/s: Eduard Vieta

The 2017 Simon Bolivar Award on behalf of the APA - APAF
Institution: The American Psychiatric Association (APA) Awardee/s: Eduard Vieta

The Samuel Gershon Awards for Junior Investigators
Institution: International Society for Bipolar Disorders
Awardee/s: Esther Jimenez Martinez

NARSAD Young Investigator Award
Institution: Brain and Behaviour Research Foundation, US.
Awardee/s: Gisela Sugranyes

Emili Letang 2017-2018
Institution: HCB
Awardee/s: Giovanni Oriolo

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STRATEGIC OBJECTIVES

Our group study severe psychiatric disorders from the differents perspectives: neurobiological, anatomofunctional mechanisms involved in the development of the disease (genetics, neuromodulators, hormone factors, molecular psychiatry and neuroimaging), as well as psychological and therapeutical approaches.

MAIN LINES OF RESEARCH

- The bipolar disorders group investigates the neurobiological mechanisms and the efficacy of treatments for the early detection and prevention of recurrences.
- The Schizophrenia and related disorders unit focuses on first and second psychotic episodes, resistant and comorbid schizophrenia.
- The child and adolescent psychiatry and psychology focuses on: psychotic disorders, eating disorders, obsessive-compulsive disorder, neurodevelopmental disorders, and the study of the neural mechanisms underlying the development of psychotic disorders in children and adolescents.
- The depression group studies the neurobiological bases and clinical indicators associated with treatment response and the course of the illness.
- The addiction group focuses on early detection and brief inteventions in alcohol use disorders, as well as on developing novel therapeutic approaches and biomarkers of brain impairment in cannabis use disorders. The liaison psychiatry focuses on psychiatric and psychological aspects in the main neurological diseases.
- Other main research lines focuses on personality disorders (diagnostic systems, their relationship to environmental adjustment and validation of new instruments), perinatal and gender related psychiatric disorders.

GROUP Miquel Bernardo

GROUP Josefina Castro-Fornieles

RESEARCH GROUP
SCHIZOPHRENIA

GROUP LEADER
Miquel Bernardo (HCB)

This interdisciplinary group focuses on schizophrenia and related disorders in clinical care, research and teaching.
The research is centered on the study of first episodes, childhood and adolescent-onset, resistant and comorbid schizophrenia. We have active collaboration (multicenter studies in translational and innovative investigation) with other IDIBAPS, CIBERSAM, and international research groups.
We collaborate with a European network of research in schizophrenia and maintain close relationship to American research networks.

RESEARCH GROUP
CHILD AND ADOLESCENT PSYCHIATRY AND PSYCHOLOGY

GROUP LEADER
Josefina Castro-Fornieles (HCB)

This research group is integrated in the Department of Child and Adolescent Psychiatry of the Neuroscience Institute of the

Hospital Clinic of Barcelona. The aim is to facilitate clinical research and to collaborate with groups specialized in genetics, neuroimaging and neurobiology.
The group has established important collaborations with other neuroscience departments in the same center as well as with other centers within the CIBERSAM.
At the international level the group collaborates with the European College of Neuopsychopharmacology, the University of Pittsburgh (United States), and the Child and Adolescent Psychiatry Center of Yale.

RESEARCH GROUP
ADDICTIONS GROUP

GROUP LEADER
Antoni Gual (HCB)

Our group focuses mainly on alcohol use and cannabis use disorders (AUD and CUD respectively). More specifically, we work on early detection and brief interventions in AUD, as well as on novel therapeutic methods for treating cognitive impairments commonly found in alcoholic patients.
In CUD, we aim to define the concept of "risky use" that might lead to physical, mental and social health problems, together with identifying biomarkers of chronic cannabis misuse for treatment monitorization and rehabilitation of cannabis dependent individuals.

50/50 PROGRAM
MULTIMODAL NEUROIMAGING IN HIGH RISK AND EARLY PSYCHOSIS

GROUP LEADER
Gisela Sugranyes (HCB-IDIBAPS)

Dr. Sugranyes' group aims to understand the neural mechanisms underlying the development of psychotic disorders in youth. We have described age-related changes in brain function in healthy participants, and group-related changes in function and structure in children and adolescents in the early stages of psychosis in brain areas related to higher cognitive functions.
We have now set out to explore the neurochemical underpinnings of these findings, and to explore the relationship between neuroimaging measures and clinical and cognitive phenotypes. On a translational level, priority is given to the identification of factors predicting transition to psychosis and functional outcomes.

GROUP Antoni Gual

GROUP Gisela Sugranyes

RESEARCH GROUP
BIPOLAR DISORDERS

GROUP LEADER
Eduard Vieta (HCB)

The bipolar disorders program mainly investigates the neurobiological and anatomofunctional mechanisms involved 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.

GROUP Eduard Vieta

PUBLICATIONS

Originals / I.F.: 301.369

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2. Sugranyes G, de la Serna E, Borras R, Sanchez-Gistau V, Pariente JC, Romero S, Baeza I, Díaz-Caneja CM, Rodriguez-Toscano E, Moreno C, Bernardo M, Moreno D, Vieta E, Castro-Fornieles J. **Clinical, Cognitive, and Neuroimaging Evidence of a Neurodevelopmental Continuum in Offspring of Probands With Schizophrenia and Bipolar Disorder.** *SCHIZOPHRENIA BULLETIN.* 43(6):1208-1219. I.F.: 7.575

3. Verdolini N, Perugi G, Samalin L, Murru A, Angst J, Azorin JM, Bowden CL, Mosolov S, Young AH, Barbuti M, Guiso G, Popovic D, Vieta E, Pacchiarotti I, BRIDGE-II-Mix Study Group. **Aggressiveness in depression: a neglected symptom possibly associated with bipolarity and mixed features.** *ACTA PSYCHIATRICA SCANDINAVICA.* 136(4):362-372. I.F.: 6.790

4. Bachmann CJ, Aagaard L, Bernardo M, Brandt L, Cartabia M, Clavenna A, Coma Fusté A, Furu K, Garuoliené K, Hoffmann F, Hollingworth S, Huybrechts KF, Kalverdijk LJ, Kawakami K, Kieler H, Kinoshita T, López SC, Machado-Alba JE, Machado-Duque ME, Mahesri M, Nishtala PS, Piovani D, Reutfors J, Saastamoinen LK, Sato I, Schuiling-Veninga CCM, Shyu YC, Siskind D, Skurtveit S, Verdoux H, Wang LJ, Zara Yahni C, Zoëga H, Taylor D. **International trends in clozapine use: a study in 17 countries.** *ACTA PSYCHIATRICA SCANDINAVICA.* 136(1):37-51. I.F.: 6.790

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7. Puig O, Baeza I, de la Serna E, Cabrera B, Mezquida G, Bioque M, Lobo A, González-Pinto A, Parellada M, Corripio I, Vieta E, Bobes J, Usall J, Contreras F, Cuesta MJ, Bernardo M, Castro-Fornieles J, PEPs Group. **Persistent Negative Symptoms in First-Episode Psychosis: Early Cognitive and Social Functioning Correlates and Differences Between Early and Adult Onset.** *JOURNAL OF CLINICAL PSYCHIATRY.* 78(9):1414-1422. I.F.: 5.291

8. Rodríguez N., Morer A., González-Navarro E., Serra-Pages C., Boloc D., Torres T., García-Cerro S., Mas S., Gassó P., Lázaro L. **Inflammatory dysregulation of monocytes in pediatric patients with obsessive-compulsive disorder.** *JOURNAL OF NEUROINFLAMMATION.* 14(1):261. I.F.: 5.102

9. Anderson, Peter; Coulton, Simon; Kaner, Eileen; Bendtsen, Preben; Kloda, Karolina; Reynolds, Jillian; Segura, Lidia; Wojnar, Marcin; Mierzecki, Artur; Deluca, Paolo; Newbury-Birch, Dorothy; Parkinson, Kathryn; Okulicz-Kozaryn, Katarzyna; Drummond, Colin; Gual, Antoni. **Delivery of Brief Interventions for Heavy Drinking in Primary Care: Outcomes of the ODHIN 5-Country Cluster Randomized Trial.** *ANNALS OF FAMILY MEDICINE.* 15(4):335-340. I.F.: 4.917

10. Blanco-Hinojo L, Pujol J, Harrison BJ, Macià D, Batalla A, Nogué S, Torrens M, Farré M, Deus J, Martín-Santos R. **Attenuated frontal and sensory inputs to the basal ganglia in cannabis users.** *ADDICTION BIOLOGY.* 22(4):1036-1047. I.F.: 4.603

11. Jimenez, Esther; Sole, Brisa; Arias, Barbara;

Mitjans, Marina; Varo, Cristina; Reinares, Maria; del Mar Bonnin, Caterina; Ruiz, Victoria; Alejandra Saiz, Pilar; Paz Garcia-Portilla, M.; Buron, Patricia; Bobes, Julio; Amann, Benedikt L.; Martinez-Aran, Anabel; Torrent, Carla; Vieta, Eduard; Benabarre, Antoni. I**mpact of childhood trauma on cognitive profile in bipolar disorder.** *BIPOLAR DISORDERS.* 19(5):363-374. I.F.: 4.531

12. Torres I, Sole B, Corrales M, Jiménez E, Rotger S, Serra-Pla JF, Forcada I, Richarte V, Mora E, Jacas C, Gómez N, Mur M, Colom F, Vieta E, Casas M, Martinez-Aran A, Goikolea JM, Ramos-Quiroga JA. **Are patients with bipolar disorder and comorbid attention-deficit hyperactivity disorder more neurocognitively impaired?** *BIPOLAR DISORDERS.* 19(8):637-650. I.F.: 4.531

13. Petri E, Bacci O, Barbuti M, Pacchiarotti I, Azorin JM, Angst J, Bowden CL, Mosolov S, Vieta E, Young AH, Perugi G, BRIDGE-II-Mix Study Group. **Obesity in patients with major depression is related to bipolarity and mixed features: evidence from the BRIDGE-II-Mix study.** *BIPOLAR DISORDERS.* 19(6):458-464. I.F.: 4.531

14. Miskowiak KW, Kjaerstad HL, Støttrup MM, Svendsen AM, Demant KM, Hoeffding LK, Werge TM, Burdick KE, Domschke K, Carvalho AF, Vieta E, Vinberg M, Kessing LV, Siebner HR, Macoveanu J. **The catechol-O-methyltransferase (COMT) Val158Met genotype modulates working memory-related dorsolateral prefrontal response and performance in bipolar disorder.** *BIPOLAR DISORDERS.* 19(3):214-224. I.F.: 4.531

15. Lopez-Jaramillo, Carlos; Vargas, Cristian; Diaz-Zuluaga, Ana M.; Palacio, Juan David; Castrillon, Gabriel; Bearden, Carrie; Vieta, Eduard. **Increased hippocampal, thalamus and amygdala volume in long-term lithium-treated bipolar I disorder patients compared with unmedicated patients and healthy subjects.** *BIPOLAR DISORDERS.* 19(1):41-49. I.F.: 4.531

16. Rodríguez-Cano E., Alonso-Lana S., Sarró S., Fernández-Corcuera P., Goikolea J., Vieta E., Maristany T., Salvador R., McKenna P., Pomarol-Clotet E. **Differential failure to deactivate the default mode network in unipolar and bipolar depression.** *BIPOLAR DISORDERS.* 19(5):386-395. I.F.: 4.531

17. Garriga M, Solé E, González-Pinto A, Selva-Vera G, Arranz B, Amann BL, Saiz-Ruiz J, Pérez-Blanco J, Vieta E. **Efficacy of quetiapine XR vs. placebo as concomitant treatment to mood stabilizers in the control of subthreshold symptoms of bipolar disorder: Results from a pilot, randomized controlled trial.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(10):959-969. I.F.: 4.239

18. Vieta E., Loft H., Florea I. **Effectiveness of long-term vortioxetine treatment of patients with major depressive disorder.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(9):877-884. I.F.: 4.239

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20. Thase ME, Danchenko N, Brignone M, Florea I, Diamand F, Jacobsen PL, Vieta E. **Comparative evaluation of vortioxetine as a switch therapy in patients with major depressive disorder.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(8):773-781. I.F.: 4.239

21. Sanchez-Moreno J., Bonnín C., González-Pinto A., Amann B., Solé B., Balanzá-Martínez V., Arango C., Jimenez E., Tabarés-Seisdedos R., Garcia-Portilla M., Ibáñez A., Crespo J., Ayuso-Mateos J., Vieta E., Alegría A., Martinez-Aran A., Al-Halabi S., Torrent C., Alonso-Lana S., Anaya C., Barbeito S., Bobes J., Chiclana G., Cerrillo E., Colom F., Correa P., Custal N., Fernández P., Fernández M., Fuentes-Durá I., Galván G., González-Ortega I., Isella S., Landín-Romero R., Manuel Menchón J., Merchan-Naranjo J., Ortiz-Gil J., Pacchiarotti I., Reyes R., Rosa A., Sanchez-Moreno J., Bonnín C., González-Pinto A., Amann B., Solé B., Balanzá-Martínez V., Arango C., Jimenez E., Tabarés-Seisdedos R., Garcia-Portilla M., Ibáñez A., Crespo J. **Do patients with bipolar disorder and subsyndromal symptoms benefit from functional remediation? A 12-month follow-up study.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(4):350-359. I.F.: 4.239

22. Parellada, Mara; Llorente, Cloe; Calvo, Rosa; Gutierrez, Silvia; Lazaro, Luisa; Graell, Montserrat; Guisasola, Maria; Luisa Dorado, Maria; Boada, Leticia; Romo, Jose; Dulin, Elena; Sanz, Inmaculada; Arango, Celso; Moreno, Carmen. **Randomized trial of omega-3 for autism spectrum disorders: Effect on cell membrane composition and behavior.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(12):1319-1330. I.F.: 4.239

23. Mas S., Gassó P., Torra M., Bioque M., Lobo A., González-Pinto A., Olmeda M., Corripio I., Vieta E., Castro-Fornieles J., Rodriguez-Jimenez R., Bobes J., Usall J., Llerena A., Saiz-Ruiz J., Bernardo M., Lafuente A., PEPs Group. **Intuitive pharmacogenetic dosing of risperidone according to CYP2D6 phenotype extrapolated from genotype in a cohort of first episode psychosis patients.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(7):647-656. I.F.: 4.239

24. Hálfdánarson Ó., Zoëga H., Aagaard L., Bernardo M., Brandt L., Fusté A., Furu K., Garuoliené K., Hoffmann F., Huybrechts K., Kalverdijk L., Kawakami K., Kieler H., Kinoshita T., Litchfield M., López S., Machado-Alba J., Machado-Duque M., Mahesri M., Nishtala P., Pearson S., Reutfors J., Saastamoinen L., Sato I., Schuiling-Veninga C., Shyu Y., Skurtveit S., Verdoux H., Wang L., Yahni C., Bachmann C. **International trends in antipsychotic use: A study in 16 countries, 2005-2014.** *EUROPEAN NEUROPSYCHOPHARMACOLOGY.* 27(10):1064-1076. I.F.: 4.239

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26. Chye Y, Solowij N, Ganella EP, Suo C, Yücel M, Batalla A, Cousijn J, Goudriaan AE, Martin-Santos R, Whittle S, Bartholomeusz CF, Lorenzetti V. **Role of orbitofrontal sulcogyral pattern on lifetime cannabis use and depressive symptoms.** *PROGRESS IN NEURO-PSYCHOPHARMACOLOGY AND BIOLOGICAL PSYCHIATRY.* 79(pt B):392-400. I.F.: 4.187

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31. Bernardo M., Bioque M., Cabrera B., Lobo A., González-Pinto A., Pina L., Corripio I., Sanjuán J., Mané A., Castro-Fornieles J., Vieta E., Arango C., Mezquida G., Gassó P., Parellada M., Saiz-Ruiz J., Cuesta M., Mas S. **Modelling gene-environment interaction in first episodes of psychosis.** *SCHIZOPHRENIA RESEARCH.* 189:181-189. I.F.: 3.986

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GRANTS FOR RESEARCH IN PROGRESS

Baeza I. **Estudio multicéntrico longitudinal sobre marcadores neurobiológicos de estrés en niños y adolescentes con síndrome de riesgo de psicosis y la transición a psicosis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00444
Duration: 01/01/2016-31/12/2018

Benabarre A. **Identificación de variables predictoras clínicas, neurocognitivas y genéticas en la emergencia y recurrencia de la conducta suicida en el trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00906
Duration: 01/01/2013-30/06/2017

Bernardo 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: 01/01/2012-27/03/2017

Bernardo M. **Estudio de aplicabilidad clínica de un modelo predictivo en recaídas en primeros episodios de esquizofrenia.**
Sponsoredby: Instituto de Salud Carlos III (ISCIII). PI14/00612
Duration: 01/01/2015-30/06/2019

Catalán R. **Diferencias de género en la respuesta a antipsicóticos: analizando el rol de la menopausia, los cambios epigenéticos en los receptores de estrógenos y los niveles de hormones sexuales.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/01029
Duration: 01/01/2017-31/12/2019

Castro J. **Aggression subtyping for improved insight and treatment innovation in psychiatric disorders.**
Sponsored by: European Commission FP7_HEALTH_13
Duration: 01/11/2013-31/10/2018

Castro J. **Multidisciplinary Approaches to Translational Research In Conduct Syndromes.**
Sponsored by: European Commission FP7_HEALTH_13
Duration: 01/03/2014-28/02/2019

Castro J. **Estudio de seguimiento a 8 años de la primera evaluación de niños y adolescents hijos de pacientes con esquizofrenia o trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00467
Duration: 01/01/2016-31/12/2018

Garcia Rizo C. **Evolución metabólica e inmune del tratamiento con clozapina: implicaciones terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00753
Duration: 01/01/2015-31/12/2017

Goikolea JM. **Bases cerebrales de dos intervenciones psicoterapéuticas eficaces en el trastorno bipolar: la psicoeducación grupal y la rehabilitación funcional. Un estudio de neuroimagen multimodal.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00723
Duration: 01/01/2015-30/06/2019

Grande I. **Disbiosis en el trastorno bipolar: MicrObiota Bipolar study (MOB study).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00187
Duration: 01/01/2017-31/12/2019

Gual A. **Red de Trastornos Adictivos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0028/0016
Duration: 01/01/2013-31/07/2017

Gual A. **Estudio controlado aleatorizado de no-inferioridad para el acceso facilitado desde Atención Primaria a una Intervención Breve Virtual para la reducción de consumo de alcohol (EFAR-Spain).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00540
Duration: 01/01/2014-31/12/2017

Gual A. **SCALA - Scale-up of Prevention and Management of Alcohol Use Disorders and Comorbid Depression in Latin America.**
Sponsored by: European commission CE_H2020-SC1_17
Duration: 01/12/2017-30/11/2021

Gual A. **RTA - Red de Trastornos Adictivos 2017.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0017/0009
Duration: 01/01/2017-31/12/2021

Gual A**. Capacity building in the application of EU drug research # Training With Stakeholders.**
Sponsored by: European commission JUST-2016-AG-DRU
Duration: 01/06/2017-30/04/2018

Gutiérrez F. **Un modelo integrado para la patología de la personalidad: estructura jerárquica, significación e impacto biográfico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00536
Duration: 01/01/2016-31/12/2018

Lafuente A. **Mecanismos moleculares implicados en la Farmacogenética del síndrome metabólico inducido por antipsicóticos.**
Sponsored by: Instituto de Salud Carlos III

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Duration: 01/01/2017-31/12/2019

Lázaro ML. **Genética, epigenética y desregulación de la microglia derivada de monocitos en pacientes con trastorno obsesivo compulsivo de inicio en la infancia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01767
Duration: 01/01/2014-31/12/2017

Lázaro ML. **Influencia de la genética y la epigenética en la eficacia del tratamiento del trastorno obsesivo-Compulsivo con terapia cognitivo-conductual o tratamiento farmacológico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/01086
Duration: 01/01/2017- 31/12/2019

Martin-Santos R. **Estudio de la actividad y conectividad cerebral en el Trastorno de ansiedad social: búsqueda de nuevos endofenotipos a través de la comparación con el S. Williams-Beuren". Estudio TASWI.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/01411
Duration: 01/01/2015- 31/12/2018

Martínez-Arán A. **Eficacia de un módulo e-neurocognitivo como coadyudante a la rehabilitación funcional para pacientes con trastorno bipolar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00330
Duration: 01/01/2016-31/12/2018

Morer A. **European Multicentre Tics in Children Studies.**
Sponsored by: European commission FP7-HEALTH-11
Duration: 01/12/2011-31/05/2018

Pacchiarotti I. **Bioequivalencia, aplicabilidad clínica y utilidad terapéutica de la monitorización salivar de litio y valproato en pacientes bipolares.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00910
Duration: 01/01/2013-31/12/2017

Romero S. **Estudio multicéntrico del maltrato infantil en niños y adolescentes con trastornos psiquiátricos: Modificaciones epigenéticas y correlatos con marcadores periféricos de inmunidad innata.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00685
Duration: 01/01/2016-31/12/2018

Sugranyes G. **Estudio longitudinal de primeros episodios psicóticos en la infancia y adolescencia.**
Seguimiento a 10 años.
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00614
Duration: 01/01/2014-30/06/2018

Torrent C. **Efectos de la rehabilitación funcional en la neuroplasticidad de pacientes bipolares.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/01498
Duration: 20/10/2015-30/06/2017

Vieta E. **Especificidad de los síntomas prodrómicos en el trastorno bipolar y predicción del curso clínico de la enfermedad.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00912
Duration: 01/01/2013-30/06/2017

Vieta E. **Implicación de variantes del gen DDR1 en la integridad de la mielina y en la velocidad de procesamiento cognitivo en pacientes con trastorno bipolar en fase eutímica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00283
Duration: 01/01/2015-31/12/2018

DOCTORAL THESES

Bernardo M, Penadés R. **Fenotipo y Genotipo de los Síntomas Negativos en la Esquizofrenia: Conceptualización, Evaluación y su Relación con el Polimorfismo VAL66MET del BDNF.**
PhD student: Gisela Mezquida Mateos

Goikolea JM, Martinez-Aran A. **Comorbilidad entre el trastorno bipolar y el trastorno por déficit de atención e hiperactividad en el adulto.**
PhD student: Imma Torres Vilamajo

Gual A, Vieta E. **Ethylglucuruoide replacing ethanol in the routine screening of alcohol depenent outpatients: clinical implications.**
PhD student: Pablo Barrio Gimenez

Martín-Santos R, Navinés R. **Health related quality of life and risk factors in hepatitis C patients.**
PhD student: Elfi Egmond

Bernardo M. **Neurocognición y Biomarcadores Inflamatorios en Primeros Episodios Psicóticos.**
PhD student: Bibiana Cabrera Llorca

Bernardo M. **Frecuencia y factores de riesgo de enfermedad cerebrovascular en pacientes con esquizofrenia y trastornos relacionados.**
PhD student: Nuria Berrocal Izquierdo

Calvo R, Lázaro L. **Caracterísitiques clíniques i neuropsicològiques en nens i adolescents amb trastorn de l'espectre autista d'alt funcionament i en els seus germans.**
PhD: Mireia Rosa Justicia

Penadés R, Barrios MT**. Estudi de l'eficàcia d'un programa de rehabilitació neuropsicològica en pacients amb esquizofrènia.**
PhD student: Gemma Garrido García

Vieta E. **Impacto del trastorno bipolar en pacientes de edad avanzada.**
PhD student: Mercè Comes Forastero

Vieta E. **Neuropsicologia i factors neurobiològics en el trastorn bipolar.**
PhD student: Ester Mora Claramunt

4.8 Neuropsychology

LOCATION
UB School of Medicine

WEB
www.ub.edu/neuropsychology/html/portada.html

KEYWORDS
1. **Magnetic resonance imaging**
2. **Structural and functional connectivity**
3. **Aging and degenerative illness**
4. **Non-invasive brain stimulation**
5. **Brain plasticity**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	152.00	32	27	5
2016	125.59	29	24	3
2017	94.34	22	14	6

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Cristina Sánchez (UB)
Bárbara Segura (UB)
Cristina Solé (UB)

PRE-DOCTORAL RESEARCHERS
Kilian Abellaneda (UB)
Alexandra Abós (UB)
Anna Campabadal (IDIBAPS)
Juan Pablo Martín (UB)
Carme Uribe (UB)

STRATEGIC OBJECTIVES

1. To study the consequences of cerebral lesions and dysfunctions in behavior and cognition.
2. We are involved in the Barcelona Brain Health Initiative project which is framed within the strategic research line towards a better understanding of the risk and protective factors, as well as the brain mechanisms, related to preserved cognitive function and mental health in late life.

MAIN LINES OF RESEARCH

1. **Neuropsychology and neuroimaging in Parkinson's disease:** This line of research makes use of combined structural and functional magnetic resonance imaging to detect early alterations in brain connectivity and its evolution during the degenerative process.
2. **Cerebral plasticity:** In the field we study changes in brain structure and function induced by transcranial electric and magnetic stimulation through magnetic resonance imaging.
3. **Development of imaging techniques to study the brain areas** implicated in higher cognitive function impairment in epileptic patients, based on functional magnetic resonance imaging.

TEAM Carme Junqué

4. **Brain changes related to life style in normal aging.** The objective is to build a prospective study cohort of >3.000 volunteers aged 40 to 65 years to obtain information as regards lifestyles, and to follow up a group of 1.500 yearly (including measures of MRI, EEG,...) and undertake a non-pharmacological trial intervention to modify the brain health related habits.

PUBLICATIONS

Originals / I.F.: 94.342

1. Grothe MJ, Villeneuve S, Dyrba M, Bartrés-Faz D, Wirth M, Alzheimer's Disease Neuroimaging Initiative. **Multimodal characterization of older APOE2 carriers reveals selective reduction of amyloid load.** *NEUROLOGY.* 88(6):569-576. I.F.: 8.320

2. Paillère-Martinot M., Galinowski A., Plaze M., Andoh J., Bartrés-Faz D., Bellivier F., Lefaucheur J., Rivière D., Gallarda T., Martinot J., Artiges E. **Active and placebo transcranial magnetic stimulation effects on external and internal auditory hallucinations of schizophrenia.** *ACTA PSYCHIATRICA SCANDINAVICA.* 135(3):228-238. I.F.: 6.790

3. Padilla, Nelly; Fransson, Peter; Donaire, Antonio; Figueras, Francesc; Arranz, Angela; Sanz-Cortes, Magdalena; Tenorio, Violeta; Bargallo, Nuria; Junque, Carme; Lagercrantz, Hugo; Aden, Ulrika; Gratacos, Eduard. **Intrinsic Functional Connectivity in Preterm Infants with Fetal Growth Restriction Evaluated at 12 Months Corrected Age.** *CEREBRAL CORTEX.* 27(10):4750-4758. I.F.: 6.559

4. Sugranyes G, Solé-Padullés C, de la Serna E, Borras R, Romero S, Sanchez-Gistau V, Garcia-Rizo C, Goikolea JM, Bargallo N, Moreno D, Baeza I, Castro-Fornieles J. **Cortical Morphology Characteristics of Young Offspring of Patients With Schizophrenia or Bipolar Disorder.** *J AM ACAD CHILD ADOLESC PSYCHIATRY.* 56(1):79-88. I.F.: 6.442

5. Simões RV, Muñoz-Moreno E, Cruz-Lemini M, Eixarch E, Bargalló N, Sanz-Cortés M, Gratacós E. **Brain metabolite alterations in infants born preterm with intrauterine growth restriction: association with structural changes and neurodevelopmental outcome.** *AM J OBSTET GYNECOL.* 216(1):62.e1-62.e14. I.F.: 5.226

6. Nathan PJ, Lim YY, Abbott R, Galluzzi S, Marizzoni M, Babiloni C, Albani D, Bartres-Faz D, Didic M, Farotti L, Parnetti L, Salvadori N, Müller BW, Forloni G, Girtler N, Hensch T, Jovicich J, Leeuwis A, Marra C, Molinuevo JL, Nobili F, Pariente J, Payoux P, Ranjeva JP, Rolandi E, Rossini PM, Schönknecht P, Soricelli A, Tsolaki M, Visser PJ, Wiltfang J, Richardson JC, Bordet R, Blin O, Frisoni GB, PharmaCog Consortium. **Association between CSF biomarkers, hippocampal volume and cognitive function in patients with amnestic mild cognitive impairment (MCI).** *NEUROBIOL AGING.* 53:1-10. I.F.: 5.117

7. Ballester-Plané J., Schmidt R., Laporta-Hoyos O., Junqué C., Vázquez É., Delgado I., Zubiaurre-Elorza L., Macaya A., Póo P., Toro E., de Reus M., van den Heuvel M., Pueyo R. **Whole-brain structural connectivity in dyskinetic cerebral palsy and its association with motor and cognitive function.** *HUMAN BRAIN MAPPING.* 38(9):4594-4612. I.F.: 4.530

8. Albi A, Pasternak O, Minati L, Marizzoni M, Bartrés-Faz D, Bargalló N, Bosch B, Rossini PM, Marra C, Müller B, Fiedler U, Wiltfang J, Roccatagliata L, Picco A, Nobili FM, Blin O, Sein J, Ranjeva JP, Didic M, Bombois S, Lopes R, Bordet R, Gros-Dagnac H, Payoux P, Zoccatelli G, Alessandrini F, Beltramello A, Ferretti A, Caulo M, Aiello M, Cavaliere C, Soricelli A, Parnetti L, Tarducci R, Floridi P, Tsolaki M, Constantinidis M, Drevelegas A, Frisoni G, Jovicich J, PharmaCog Consortium. **Free water elimination improves test-retest reproducibility of diffusion tensor imaging indices in the brain: A longitudinal multisite study of healthy elderly subjects.** *HUM BRAIN MAPP.* 38(1):12-26. I.F.: 4.530

9. Campabadal A., Uribe C., Segura B., Baggio H., Abos A., Garcia-Diaz A., Marti M., Valldeoriola F., Compta Y., Bargallo N., Junque C. **Brain correlates of progressive olfactory loss in Parkinson's disease.** *PARKINSONISM AND RELATED DISORDERS.* 41:44-50. I.F.: 4.484

10. Laporta-Hoyos O., Pannek K., Ballester-Plané J., Reid L., Vázquez É., Delgado I., Zubiaurre-Elorza L., Macaya A., Póo P., Meléndez-Plumed M., Junqué C., Boyd R., Pueyo R. **White matter integrity in dyskinetic cerebral palsy: Relationship with intelligence quotient and executive function.** *NEUROIMAGE: CLINICAL.* 15:789-800. I.F.: 4.348

11. Abós A, Baggio HC, Segura B, García-Díaz AI, Compta Y, Martí MJ, Valldeoriola F, Junqué C. **Discriminating cognitive status in Parkinson's disease through functional connectomics and machine learning.** *SCIENTIFIC REPORTS.* 7:45347. I.F.: 4.259

12. Cordova-Palomera, Aldo; de Reus, Marcel A.; Fatjo-Vilas, Mar; Falcon, Carles; Bargallo, Nuria; van den Heuvel, Martijn P.; Fananas, Lourdes. **FKBP5 modulates the hippocampal connectivity deficits in depression: a study in twins.** *BRAIN IMAGING AND BEHAVIOR.* 11(1):62-75. I.F.: 3.985

13. Vaqué-Alcázar L., Sala-Llonch R., Valls-Pedret C., Vidal-Piñeiro D., Fernández-Cabello S., Bargalló N., Ros E., Bartrés-Faz D. **Differential age-related gray and white matter impact mediates educational influence on elders' cognition.** *BRAIN IMAGING AND BEHAVIOR.* 11(2):318-332. I.F.: 3.985

14. Grau-Rivera O, Calvo A, Bargalló N, Monté GC, Nos C, Lladó A, Molinuevo JL, Gelpi E, Sánchez-Valle R. **Quantitative Magnetic Resonance Abnormalities in Creutzfeldt-Jakob Disease and Fatal Insomnia.** *JOURNAL OF ALZHEIMER'S DISEASE.* 55(1):431-443. I.F.: 3.731

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16. Solé-Padullés C, Castro-Fornieles J, de la Serna E, Sánchez-Gistau V, Romero S, Puig O, Calvo A, Bargalló N, Baeza I, Sugranyes G. **Intrinsic functional connectivity of fronto-temporal networks in adolescents with early psychosis.** *EUR CHILD ADOLESC PSYCHIATRY.* 26(6):669-679. I.F.: 3.295

17. Ottino-Gonzalez, Jonatan; Jurado, Maria A.; Garcia-Garcia, Isabel; Segura, Barbara; Marques-Iturria, Idoia; Sender-Palacios, Maria

J.; Tor, Encarnacio; Prats-Soteras, Xavier; Caldu, Xavier; Junque, Carme; Garolera, Maite. **Allostatic Load Is Linked to Cortical Thickness Changes Depending on Body-Weight Status.** *FRONTIERS IN HUMAN NEUROSCIENCE.* 11:639. I.F.: 3.209

18. Sanz Cortes M, Bargallo N, Arranz A, Simoes R, Figueras F, Gratacos E. **Feasibility and Success Rate of a Fetal MRI and MR Spectroscopy Research Protocol Performed at Term Using a 3.0-Tesla Scanner.** *FETAL DIAGNOSIS AND THERAPY.* 41(2):127-135. I.F.: 2.699

19. Sarbu N, Toledano P, Calvo A, Roura E, Sarbu MI, Espinosa G, Lladó X, Cervera R, Bargalló N. A**dvanced MRI techniques: biomarkers in neuropsychiatric lupus.** *LUPUS.* 26(5):510-516. I.F.: 2.454

20. Brugulat-Serrat A., Rojas S., Bargalló N., Conesa G., Minguillón C., Fauria K., Gramunt N., Molinuevo J., Gispert J. **Incidental findings on brain MRI of cognitively normal first-degree descendants of patients with Alzheimer's disease: A cross-sectional analysis from the ALFA (Alzheimer and Families) project.** *BMJ OPEN.* 7(3):e013215. I.F.: 2.369

21. Carreño M., Bien C., Asadi-Pooya A., Marusic P., Pimentel J., Wehner T., Mohanraj R., Uranga J., Gómez-Ibáñez A., Bargalló N., Rumià J., Setoain X., Pintor L., Bailles E., Falip M., Dalmau J., Gil F., Sperling M., Elisak M., Villanueva V., Roldán P., Boget T., Donaire A., Aparicio J., Graus F. **Epilepsy surgery in drug resistant temporal lobe epilepsy associated with neuronal antibodies.** *EPILEPSY RESEARCH.* 129:101-105. I.F.: 2.367

22. Server A., Bargalló N., Fløisand Y., Sponheim J., Graus F., Hald J. **Imaging spectrum of central nervous system complications of hematopoietic stem cell and solid organ transplantation.** *NEURORADIOLOGY.* 59(2):105-126. I.F.: 2.093

Letters / I.F.: 1.532

1. Guasp-Verdaguer, Mar; Grau-Rivera, Oriol; Prats-Galino, Alberto; Bargallo, Nuria; Sanchez-Valle, Raquel; Gelpi, Ellen; Soria, Guadalupe. **Clinical Neuropathology image 4-2017: High-resolution 7 Tesla MRI of postmortem brain specimens: improving neuroimaging-neuropathology correlations.** *CLINICAL NEUROPATHOLOGY.* 36(4):162-163. I.F.: 1.532

GRANTS FOR RESEARCH IN PROGRESS

Bartres D. **Efectos del entrenamiento cognitivo combinado con estimulación cerebral no-invasiva guiada por información funcional cerebral en el deterioro cognitivo leve.**
Sponsored by: Ministerio de Economia y Competitividad (MINECO). PSI2015-64227-R
Duration: 01/01/2016-31/12/2018

Bartres D. **Barcelona Brain Health Initiative.**
Sponsored by: Obra social La Caixa (Fundació Abertis).
Duration: 1/07/2016-1/07/2019

Bartres D. **Breaking new ground in lifespan cognitive neuroscience.**
Sponsored by: European commission. H2020
Duration: 01/01/2017-31/12/2018

Junqué C. **Reorganización de las redes cerebrales implicadas en la cognición durante el proceso degenerativo en la enfermedad de Parkinson.**
Sponsored by: Ministerio de Economia y Competitividad (MINECO). PSI-2013-41393-P
Duration: 01/01/2014-31/12/2017

Junqué C. **Brain connectivity changes during the degenerative process in Parkinson's disease.**
Sponsored by: Fundació la marató TV3. 20142310
Duration: 22/05/2015-21/05/2018

DOCTORAL THESES

Bargalló N. **Advanced and conventional magnetic resonance imaging techniques: biomarkers in reurolupus.**
PhD student: Nicola Sarbu

Bargalló N. **Resonancia magnética funcional aplicada al manejo de tumores cerebrales en el entorno clínico.**
PhD student: Sofía González Ortiz

4.9 Systems neuroscience

LOCATION
CEK building

WEB
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neuro.fcrb.es/complab
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KEYWORDS
1. **Cerebral cortex**
2. **Computational neuroscience**
3. **Oscillations**
4. **Virtual reality**
5. **Body representation**
6. **Working memory**
7. **Spatial memory**
8. **Desision-making**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	55.34	9	6	3
2016	48.56	8	8	-
2017	68.79	11	10	1

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TEAM María Victoria Sánchez Vives

STRATEGIC OBJECTIVES

The growing knowledge of synaptic physiology and brain circuits, together with the development of new instruments with which to record, analyze and model the activity of a large number of neurons has made it possible to address one of the great pending challenges in neuroscience: to understand the relationship between the activity of the neuronal population and behavioral performance.
The general objective of the Systems Neuroscience group is to address this challenge by combining experimental studies in cerebral cortex networks with a combined experimental and theoretical approach.

MAIN LINES OF RESEARCH

1. **Cortical networks and EVENT Lab. Headed by Dr. Sánchez-Vives:**
   We study different aspects of spontaneous and evoked cortical activity: the mechanisms that regulate it, the information it encodes, its spatiotemporal properties and its consequences on the network. Moreover, we explore cortical activity in transgenic mouse models of neurological disease in the search for the underlying altered mechanisms and their possible reversion.
   In addition, we are interested in the integration of cortical information that gives rise to body representation and in the combination of brain-computer interfaces and virtual reality to understand these processes (EVENT lab, www.event-lab.org).

2. **Theoretical neurobiology of cortical circuits. Headed by Dr. Compte:**
   - Circuit mechanisms of spatial and feature working memory.
   - Network basis of cognitive and perceptual alterations in anti- NMDAr encephalitis patients.
   - Mechanisms of spatial working memory deficits in schizophrenia.

3. **Cortical circuit dynamics. Headed by Dr. de la Rocha:**
   - Neural circuit dynamics during perceptual decision making and Working Memory tasks.
   - Network mechanisms underlying spontaneous activity and brain state changes.
   - The role of hippocampal circuits during spatial long term memory acquisition and retrieval.

By building computational models of cognitive function and testing model-derived hypotheses experimentally, we aim at providing links between specific synaptic, cellular and circuit mechanisms and cognitive and perceptual functions and dysfunctions.

RESEARCH GROUP
THEORETICAL NEUROBIOLOGY OF CORTICAL CIRCUITS

GROUP LEADER
Albert Compte (IDIBAPS)

We investigate the circuit mechanisms that operate in the cerebral cortex during perceptual and cognitive processes.
We focus our efforts on cortical mechanisms for working memory, and their failure in anti-NMDAR encephalitis and schizophrenia patients.
Our methods include biologically plausible computational modelling, together with behavioral, electrophysiological and neuroimaging experiments in healthy human participants and in patients.

GROUP Albert Compte

RESEARCH GROUP
CORTICAL CIRCUIT DYNAMICS

GROUP LEADER
Jaime de la Rocha (IDIBAPS)

We study the neuronal circuit mechanisms underlying cognitive functions such as perception, decision making and memory. For this, (1) we train rodents to perform perceptual discrimination and memory tasks, (2) we quantitatively characterize the variables that determine their behavior and (3) identify the brain areas where these variables are represented and the detailed circuit dynamics underlying their processing.
We investigate how expectation is formed from recent experiences and how it impacts the representation of sensory stimuli.
We use pharmacology, population neural recordings, quantitative analysis and computational modeling to address these questions.
We moreover apply these methods to understand neural disorders such as anti-NMDAR encephalitis.

PUBLICATIONS

Originals / I.F.: 68.788

1. Nogueira R., Abolafia J., Drugowitsch J., Balaguer-Ballester E., Sanchez-Vives M., Moreno-Bote R. **Lateral orbitofrontal cortex anticipates choices and integrates prior with current information.** *NATURE COMMUNICATIONS.* 8:14823. I.F.: 12.124

2. D'Amico D, Gener T, de Lagrán MM, Sanchez-Vives MV, Santos M, Dierssen M. **Infralimbic Neurotrophin-3 Infusion Rescues Fear Extinction Impairment in a Mouse Model of Pathological Fear.** *BIOLOGICAL PSYCHIATRY.* 42(2):462-472. I.F.: 11.412

3. Jercog D, Roxin A, Barthó P, Luczak A, Compte A, de la Rocha J. **UP-DOWN cortical dynamics reflect state transitions in a bistable network.** *ELIFE.* 6:e22425. I.F.: 7.725

4. Blaschke, Benno M.; Tort-Colet, Nuria; Guimera-Brunet, Anton; Weinert, Julia; Rousseau, Lionel; Heimann, Axel; Drieschner, Simon; Kempski, Oliver; Villa, Rosa; Sanchez-Vives, Maria V.; Garrido, Jose A. **Mapping brain activity with flexible graphene micro-transistors.** *2D MATERIALS.* 4(2):21-37. I.F.: 6.937

5. Ramirez-Mahaluf JP, Roxin A, Mayberg HS, Compte A. **A Computational Model of Major Depression: the Role of Glutamate Dysfunction on Cingulo-Frontal Network Dynamics.** *CEREBRAL CORTEX.* 27(1):660-679. I.F.: 6.559

6. Capone C, Rebollo B, Muñoz A, Illa X, Del Giudice P, Sanchez-Vives MV, Mattia M. **Slow Waves in Cortical Slices: How Spontaneous Activity is Shaped by Laminar Structure.** *CEREBRAL CORTEX.* 28:1-17. I.F.: 6.559

7. Nierula B, Martini M, Matamala-Gomez M, Slater M, Sanchez-Vives MV. **Seeing an Embodied Virtual Hand is Analgesic Contingent on Colocation.** *JOURNAL OF PAIN.* 18(6):645-655. I.F.: 4.519

8. Castano-Prat P., Perez-Zabalza M., Perez-Mendez L., Escorihuela R., Sanchez-Vives M. **Slow and fast neocortical oscillations in the senescence-accelerated mouse model SAMP8.** *FRONTIERS IN AGING NEUROSCIENCE.* 9(MAY):141. I.F.: 4.504

9. Brotons-Mas, R.; Schaffelhofer, S.; Guger, C.; O'Mara, S. M.; Sanchez-Vives, M. V. **Heterogeneous spatial representation by different subpopulations of neurons in the subiculum.** *NEUROSCIENCE.* 343:174-189. I.F.: 3.277

10. Agustí A., Compte A., Faner R., Garcia-Aymerich J., Noell G., Cosio B., Rodriguez-Roisin R., Celli B., Anto J. **The EASI model: A first integrative computational approximation to the natural history of COPD.** *PLOS ONE.* 12(10):e0185502. I.F.: 2.806

11. Nykamp D., Friedman D., Shaker S., Shinn M., Vella M., Compte A., Roxin A. **Mean-field equations for neuronal networks with arbitrary degree distributions.** *PHYSICAL REVIEW E - STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS.* 95(4):042323. I.F.: 2.366

Review / I.F.: 14.024

1. Sanchez-Vives MV, Massimini M, Mattia M. **Shaping the Default Activity Pattern of the Cortical Network.** *NEURON.* 94(5):993-1001. I.F.: 14.024

Letters / I.F.: 5.988

1. Barbosa, Joao. **Working Memories Are Maintained in a Stable Code.** *JOURNAL OF NEUROSCIENCE.* 37(35):8309-8311.I.F.: 5.988

GROUP Jaime de la Rocha

GRANTS FOR RESEARCH IN PROGRESS

Compte A. **Prefrontal network mechanisms of working memory dynamics: from dopamine neuromodulation to network dysfunction in anti-NMDAR encephalitis.**
Sponsored by: Ministerio de Economia y Competitividad. BFU2015-65318-R
Duration: 01/01/2016-31/12/2018

De la Rocha J. **Neural circuit dynamics underlying expectation and their impact on the variability of perceptual choices.**
Sponsored by: European commission H2020 ERC Consolidator Grant 2015.
Duration: 01/09/2016-31/08/2021

De la Rocha J. **La dinámica de los circuitos neuronales durante la toma de decisiones perceptuales.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2015-70324-R
Duration: 01/01/2016-31/12/2018

Sanchez-Vives MV. **Cortical organization generated in transgenic models of cognitive deficit and reversal exploration. (COGITARE).**
Sponsored by: Ministerio de Economia y Competitividad. BFU2014-52467R
Duration: 01/01/2015-31/12/2017

Sanchez-Vives MV. **Dinámica de las oscilaciones lentas: experimentos, análisis, modelos e intervenciones terapéuticas (SloW-Dyn).**
Sponsored by: Ministerio de Economia y Competividad (MINECO).
PCIN-2015-162-C02-01
Duration: 01/12/2015-30/11/2018

Sanchez-Vives MV. **Graphene-based disruptive technologies.**
Sponsored by: European commission H2020-Adhoc-14-20
Dutarion: 01/04/2016-31/03/2018

Sanchez-Vives MV. **Human Brain Project Specific Grant Agreement 1.**
Sponsored by: European commission HBP_SCN15
Duration: 01/04/2016-31/03/2018

DOCTORAL THESES

Sanchez Vives MV. **Synaptic and non-synaptic propagation of slow waves and their modulation by endogenous electric fields.**
PhD student: Beatriz Rebollo González

Sanchez Vives MV. **The use of immersive virtual reality in neurorehabilitation and its impact on neuroplasticity.**
PhD student: Marta Matamala Gomez

Sanchez Vives MV. **Oscilaciones lentas en la red cortical alterada:una caracterización de los modelos murinos 3xTg-AD, SAMP8 y Fmr1KO.**
PhD student: Patricia Castaño Prat

Sanchez Vives MV, Slater M. **Multisensory processing and agency in VR embodiment; interactions through BCI and their therapeutic applications.**
PhD student: Birgit Nierula

Sanchez Vives MV, Slater M. **Improving empathy in domestic violence offenders through perspective-taking in immersive virtual reality.**
PhD student: Sofia Seinfeld

Sanchez Vives MV, Mattia M. **Emergent rhythmic activity and functional connectivity in the thalamocortical circuit at different brain states.**
PhD student: Núria Tort Colet

4.10 Clinical and experimental neuroimmunology

LOCATION
CELLEX building 3A

WEB
www.neuroimmunologybcn.org

KEYWORDS
1. **Autoantibodies**
2. **Encephalitis**
3. **Multiple sclerosis**
4. **Paraneoplastic**
5. **Cancer**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	185.55	35	25	5
2016	199.30	32	21	6
2017	127.24	23	18	2

TEAM INVOLVED IN
REEM
CIBERER
AGAUR_SGR14

AWARDS
Premio Rey Jaime I in Medical Research/ Clinical Medicine
Institution: Fundación Premios Rey Jaime I
Awardee/s: Josep Dalmau

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Víctor López (CIBER)
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Simone Matozzi (AOU-Sassari, Italy)
Benedict Rieger (Heidelberg University, Germany)
Gabriella Secondi (Hospital Sant Joan de Déu, Spain)

STRATEGIC OBJECTIVES

The principal objective of the Neuroimmunology Group is the study of autoimmune (inflammatory) diseases of the nervous system and the elucidation of the underlying immunopathogenic mechanisms involved in the inflammatory response. Diseases under study include multiple sclerosis, neuromyelitis optica, autoimmune encephalitis and paraneoplastic neurological disorders.

MAIN LINES OF RESEARCH

1. Identification of novel autoimmune diseases of the nervous system in adults and children and the development of diagnostic tests for these disorders.

2. Development of biomarkers and new therapies for multiple sclerosis, neuromyelitis optica and other demyelinating diseases.

3. Characterization of the immunopathogenic mechanisms that result in autoimmune encephalitis and paraneoplastic neurologic disorders.

4. To elucidate how autoimmunity affects synaptic function and brain networks using advanced neuroimaging, electrophysiology, behavioral and in-silico models.

5. The development of models of autoimmune diseases of the nervous system.

6. The use of systems biology and functional brain imaging to dissect the immunological mechanisms leading to brain damage in demyelinating diseases.

RESEARCH GROUP
PATHOGENESIS OF AUTOIMMUNE NEURONAL DISORDERS

GROUP LEADER
Josep Dalmau (ICREA-IDIBAPS)

Our research focuses on immune-mediated diseases of the synapse and autoimmune brain diseases triggered by cancer. Studies include the description of novel syndromes and immune-mechanisms, isolation of the target antigens and development of diagnostic tests and new treatments.
We have shown that these diseases associate with antibodies that target neuronal proteins and synaptic receptors that play important roles in synaptic transmission, signaling and plasticity.
We are investigating the mechanisms that underlie the disorders by examining how the antibodies modify the levels and function of the target proteins and receptors, and by in vitro, in vivo, and in-silico modeling.

TEAM Josep Dalmau

TEAM Sara Llufriu

50/50 PROGRAM
ADVANCED IMAGING IN NEUROIMMUNOLOGICAL DISEASES (IMAGINEM)

GROUP LEADER
Sara Llufriu (IDIBAPS)

Our research is focused on the understanding of the basis of disease evolution in multiple sclerosis and other neuroimmunological diseases, through the use of advanced magnetic resonance techniques.
We aim to identify imaging biomarkers of physical and cognitive disability and of response to conventional and new therapies.
Recently, we are interested in the study of mechanisms of neural reorganization as a response of disease evolution and after cognitive rehabilitation.
We have developed technical improvements with new sequences and novel image processing to use in the translation of the research to the patient.
We are part of the European network MAGNIMS (Magnetic Resonance Imaging in Multiple Sclerosis).

RESEARCH GROUP
PATHOGENESIS AND NEW TREATMENTS IN MULTIPLE SCLEROSIS

GROUP LEADER
Pablo Villoslada (IDIBAPS)

Our team is pioneering the application of Systems Medicine to the study of Multiple Sclerosis (MS) and the development of new tools for personalized medicine. We are developing new therapies such as the trophic factor like drug BN201 or antigen-specific tolerization. We have developed new diagnostic tools such as molecular imaging of the retina to monitor disease progression. Another of our strategic objectives is the diffusion of knowledge and optimum use of synergies, with a view to transferring the advances in research to clinical practice. Lastly, the group has a commitment to innovation, both in terms of the generation of patents and as regards the creation of spin-off companies.

PUBLICATIONS

Originals / I.F.: 127.124

1. Jézéquel J., Johansson E., Dupuis J., Rogemond V., Gréa H., Kellermayer B., Hamdani N., Le Guen E., Rabu C., Lepleux M., Spatola M., Mathias E., Bouchet D., Ramsey A., Yolken R., Tamouza R., Dalmau J., Honnorat J., Leboyer M., Groc L. **Dynamic disorganization of synaptic NMDA receptors triggered by autoantibodies from psychotic patients.** *NATURE COMMUNICATIONS.* 8(1):1791. I.F.: 12.124

2. Muraro, Paolo A.; Pasquini, Marcelo; Atkins, Harold L.; Bowen, James D.; Farge, Dominique; Fassas, Athanasios; Freedman, Mark S.; Georges, George E.; Gualandi, Francesca; Hamerschlak, Nelson; Havrdova, Eva; Kimiskidis, Vassilios K.; Kozak, Tomas; Mancardi, Giovanni L.; Massacesi, Luca; Moraes, Daniela A.; Nash, Richard A.; Pavletic, Steven; Ouyang, Jian; Rovira, Montserrat; Saiz, Albert; Simoes, Belinda; Trneny, Marek; Zhu, Lin; Badoglio, Manuela; Zhong, Xiaobo; Sormani, Maria Pia; Saccardi, Riccardo; Multiple Sclerosis-Autologou. **Long-term Outcomes After Autologous Hematopoietic Stem Cell Transplantation for Multiple Sclerosis.** *JAMA NEUROLOGY.* 74(4):459-469. I.F.: 10.029

3. Escudero, Domingo; Guasp, Mar; Arino, Helena; Gaig, Carles; Martinez-Hernandez, Eugenia; Dalmau, Josep; Graus, Francesc. **Antibody-associated CNS syndromes without signs of inflammation in the elderly.** *NEUROLOGY.* 89(14):1471-1475. I.F.: 8.320

4. Hara, Makoto; Arino, Helena; Petit-Pedrol, Mar; Sabater, Lidia; Titulaer, Maarten J.; Martinez-Hernandez, Eugenia; Schreurs, Marco W. J.; Rosenfeld, Myrna R.; Graus, Francesc; Dalmau, Josep. **DPPX antibody-associated encephalitis Main syndrome and antibody effects.** *NEUROLOGY.* 88(14):1340-1348. I.F.: 8.320

5. Torres-Vega, Estefania; Mancheno, Nuria; Cebrian-Silla, Arantxa; Herranz-Perez, Vicente; Chumillas, Maria J.; Moris, German; Joubert, Bastien; Honnorat, Jerome; Sevilla, Teresa; Vilchez, Juan J.; Dalmau, Josep; Graus, Francesc; Manuel Garcia-Verdugo, Jose; Bataller, Luis. **Netrin-1 receptor antibodies in thymoma-associated neuromyotonia with myasthenia gravis.** *NEUROLOGY.* 88(13):1235-1242. I.F.: 8.320

6. Spatola, Marianna; Petit-Pedrol, Mar; Simabukuro, Mateus Mistieri; Armangue, Thas; Castro, Fernanda J.; Barcelo Artigues, Maria I.; Julia Benique, Maria R.; Benson, Leslie; Gorman, Mark; Felipe, Ana; Oblitas, Ruben L. Caparo; Rosenfeld, Myrna R.; Graus, Francesc; Dalmau, Josep. **Investigations in GABAA receptor antibody-associated encephalitis.** *NEUROLOGY.* 88(11):1012-1020. I.F.: 8.320

7. Gaig C, Graus F, Compta Y, Högl B, Bataller L, Brüggemann N, Giordana C, Heidbreder A, Kotschet K, Lewerenz J, Macher S, Martí MJ, Montojo T, Pérez-Pérez J, Puertas I, Seitz C, Simabukuro M, Téllez N, Wandinger KP, Iranzo A, Ercilla G, Sabater L, Santamaría J, Dalmau J. **Clinical manifestations of the anti-IgLON5 disease.** *NEUROLOGY.* 88(18):1736-1743. I.F.: 8.320

8. Moreno M., Pedrosa L., Paré L., Pineda E., Bejarano L., Martínez J., Balasubramaniyan V., Ezhilarasan R., Kallarackal N., Kim S., Wang J., Audia A., Conroy S., Marin M., Ribalta T., Pujol T., Herreros A., Tortosa A., Mira H., Alonso M., Gómez-Manzano C., Graus F., Sulman E., Piao X., Nakano I., Prat A., Bhat K., de la Iglesia N. **GPR56/ADGRG1 Inhibits Mesenchymal Differentiation and Radioresistance in Glioblastoma.** *CELL REPORTS.* 21(8):2183-2197. I.F.: 8.282

9. Peschl P; Schanda K; Zeka B; Given K; Böhm D; Ruprecht K; Saiz A; Lutterotti A; Rostásy K; Hoftberger R; Berger T; Macklin W; Lassmann H; Bradl M; Bennett JL; Reindl M. **Human antibodies against the myelin oligodendrocyte glycoprotein can cause complement-dependent demyelination.** *JOURNAL OF NEUROINFLAMMATION.* 14(1):208-1120. I.F.: 5.102

10. Sepúlveda M, Fernández-Diez B, Martínez-Lapiscina EH, Llufriu S, Sola-Valls N, Zubizarreta I, Blanco Y, Saiz A, Levy D, Glimcher P, Villoslada P. **Impairment of decision-making in multiple sclerosis: A neuroeconomic approach.** *MULTIPLE SCLEROSIS.* 23(13):1762-1771. I.F.: 4.840

11. Sepúlveda M, Aldea M, Escudero D, Llufriu S, Arrambide G, Otero-Romero S, Sastre-Garriga J, Romero-Pinel L, Martínez-Yélamos S, Sola-Valls N, Armangué T, Sotoca J, Escartín A, Robles-Cedeño R, Ramió-Torrentà L, Presas-Rodríguez S, Ramo-Tello C, Munteis E, Pelayo R, Gubieras L, Brieva L, Ortiz N, Hervás M, Mañé-Martínez MA, Cano A, Vela E, Tintoré M, Blanco Y, Montalban X, Graus F, Saiz A. **Epidemiology of NMOSD in Catalonia: Influence of the new 2015 criteria in incidence and prevalence estimates.** *MULTIPLE SCLEROSIS.* 1:1352458517735191. I.F.: 4.840

12. Sepúlveda M, Sola-Valls N, Escudero D, Rojc B, Barón M, Hernández-Echebarría L, Gómez B, Dalmau J, Saiz A, Graus F. **Clinical profile of patients with paraneoplastic neuromyelitis optica spectrum disorder and aquaporin-4 antibodies.** *MULTIPLE SCLEROSIS.*:1352458517731914-1352458517731914. I.F.: 4.840

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16. Van Coevorden-Hameete M; van Beuningen S; Perrenoud M; Will L; Hulsenboom E; Demonet J; Sabater L; Kros J; Verschuuren J; Titulaer M; de Graaff E; Sillevis Smitt P; Hoogenraad C. **Antibodies to TRIM46 are associated with paraneoplastic neurological syndromes.** *ANNALS OF CLINICAL AND TRANSLATIONAL NEUROLOGY.* 4(9):680-686. I.F.: 3.901

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19. Baeza-Yates R, Sangal PM, Villoslada P, Villoslada P. **Burden of neurological diseases in the US revealed by web searches.** *PLOS ONE.* 12(5):e0178019. I.F.: 2.806

20. Carreño M., Bien C., Asadi-Pooya A., Marusic P., Pimentel J., Wehner T., Mohanraj R., Uranga J., Gómez-Ibáñez A., Bargalló N., Rumià J., Setoain X., Pintor L., Bailles E., Falip M., Dalmau J., Gil F., Sperling M., Elisak M., Villanueva V., Roldán P., Boget T., Donaire A., Aparicio J., Graus F. **Epilepsy surgery in drug resistant temporal lobe epilepsy associated with neuronal antibodies.** *EPILEPSY RESEARCH.* 129:101-105. I.F.: 2.367

21. Melia U, Gabarron E, Agustí M, Souto N, Pineda P, Fontanet J, Vallverdu M, Jensen EW, Gambus P. **Comparison of the qCON and qNOX indices for the assessment of unconsciousness level and noxious stimulation response during surgery.** *JOURNAL OF CLINICAL MONITORING AND COMPUTING.* 31:1-9. I.F.: 2.178

22. Curbelo J., Romeo J., Galván-Román J., Vega-Villar J., Martinez-Lapiscina E., Jiménez-Fonseca P., Villacampa T., Sánchez-Lasheras F., Fernández-Somoano A., Baladrón J. **The popularity of neurology in Spain: An analysis of specialty selection.** *NEUROLOGIA.* I.F.: 2.103

23. Server A., Bargalló N., Fløisand Y., Sponheim J., Graus F., Hald J. **Imaging spectrum of central nervous system complications of hematopoietic stem cell and solid organ transplantation.** *NEURORADIOLOGY.* 59(2):105-126. I.F.: 2.093

Review / I.F.: 85.127

1. Dalmau, Josep; Geis, Christian; Graus, Francesc. **Autoantibodies to synaptic receptors and neuronal cell surface proteins in autoimmune diseases of the central nervous system.** *PHYSIOLOGICAL REVIEWS.* 97(2):839-887. I.F.: 27.312

2. Petzold A, Balcer LJ, Calabresi PA, Costello F, Frohman TC, Frohman EM, Martinez-Lapiscina EH, Green AJ, Kardon R, Outteryck O, Paul F, Schippling S, Vermersch P, Villoslada P, Balk LJ, ERN-EYE IMSVISUAL. **Retinal layer segmentation in multiple sclerosis: a systematic review and meta-analysis.** *LANCET NEUROLOGY, THE.* 16(10):797-812. I.F.: 26.284

3. Van Sonderen A, Petit-Pedrol M, Dalmau J, Titulaer MJ . **The value of LGI1, Caspr2 and voltage-gated potassium channel antibodies in encephalitis.** *NATURE REVIEWS NEUROLOGY.* 13(5):290-301-301. I.F.: 20.257

4. Spatola M, Dalmau J. **Seizures and risk of epilepsy in autoimmune and other inflammatory encephalitis**. *CURRENT OPINION IN NEUROLOGY.* 30(3):345-353. I.F.: 4.699

5. Almeida J., Solà-Valls N., Pose E., Blanco Y., Sepúlveda M., Llufriu S., Gines P., Saiz A. **Liver injury and glatiramer acetate, an uncommon association: Case report and literature review.** *THERAPEUTIC ADVANCES IN NEUROLOGICAL DISORDERS.* 10(11):367-372. I.F.: 4.192

6. Brandt, Alexander U.; Martinez-Lapiscina, Elena H.; Nolan, Rachel; Saidha, Shiv. **Monitoring the Course of MS With Optical Coherence Tomography.** *CURRENT TREATMENT OPTIONS IN NEUROLOGY.* 19(4):15-1120. I.F.: 2.383

Letters / I.F.: 10.292

1. Dalmau, Josep. **In vitro effects of a human monoclonal antibody against the N-methyl-D-aspartate receptor.** *BRAIN; A JOURNAL OF NEUROLOGY.* 140(2):e9. I.F.: 10.292

Editorial / I.F.: 34.499

1. Gross R., Worrall B., Amato A., Cascino G., Ciccarelli O., Corboy J., Dalmau J., Gottesman R., Grossman M., Millichap J., Mink J., Pulst S., Uitti R. **Message from the Editors to our Reviewers.** *NEUROLOGY.* 89(1):2-10. I.F.: 8.320

2. Dalmau J, Vincent A. **Do we need to measure specific antibodies in patients with limbic encephalitis?** *NEUROLOGY.* 88(6):508-509. I.F.: 8.320

3. Toosy AT, Naismith RT, Villoslada P. **OCT as a window to the MS brain: The view becomes slightly clearer.** *NEUROLOGY.* 89(24):2404-2405. I.F.: 8.320

4. Villoslada P, Martinez-Lapiscina E. **Time is vision: The importance of the early discovery and diagnosis of optic neuritis.** *MULTIPLE SCLEROSIS.* 23(14):1806-1807. I.F.: 4.840

5. Graus F. **Widening the spectrum of inflammatory disorders of the central nervous system.** *CURRENT OPINION IN NEUROLOGY.* 30(3):292-294-294. I.F.: 4.699

Case Reports / I.F.: 3.983

1. Sepúlveda M., Martinez-Hernandez E., Gaba L., Victoria I., Sola-Valls N., Falgàs N., Casanova-Molla J., Graus F. **Motor polyradiculopathy during pembrolizumab treatment of metastatic melanoma.** *MUSCLE AND NERVE.* 56(6):E162-E167. I.F.: 2.605

2. Tavasoli, Ali; Armangue, Thais; Ho, Cheng-Ying; Whitehead, Matthew; Bornhorst, Miriam; Rhee, Jullie; Hwang, Eugene I.; Wells, Elizabeth M.; Packer, Roger; van der Knaap, Marjo S.; Bugiani, Marianna; Vanderver, Adeline. **Alexander Disease: A Leukodystrophy That May Mimic Brain Tumor.** *JOURNAL OF CHILD NEUROLOGY.* 32(2):184-187. I.F.: 1.378

GRANTS FOR RESEARCH IN PROGRESS

Armangué T. **Autoinmunidad en encefalitis herpética en la infancia: coreoatetosis post-herpética, anticuerpos NMDAR e interferon.**
Sponsored by: Fundación de investigación médica mutua madrileña. AP162572016
Duration: 18/07/2016-17/07/2019

Dalmau J. **New syndromes, antigens, and mechanisms of synaptic autoimmunity.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00203
Duration: 01/01/2015-31/12/2017

Dalmau J. **Resources for human Studies" vinculat al Projecte "Imaging Synaptic Networks in Freely Behaving Mice.**
Sponsored by: Fundación Privada Cellex. 17/553
Duration: 01/11/2016-31/12/2018

Dalmau J. **Imaging Synaptic Networks in Freely Behaving Mice.**
Sponsored by: Fundación Privada Cellex. 17/554
Duration: 30/06/2017-31/12/2018

Dalmau J. **Inmune-mediated diseases of the synapse: symptoms, brain networks, and the link to human memory.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE16/00014
Duration: 01/01/2017-31/12/2019

Gambús PL. **PREDICTHEON: A project to develop predictive Monitoring Systems for clinical applications.**
Sponsored by: Programa CaixaImpulse. CI16-00053
Duration: 01/01/2017-30/09/2018

Graus F. **Diagnostic and prognostic biomarkers in pediatric multiple sclerosis and related demyelinating disorders.**
Sponsored by: Fundació La Marató TV3. 20141830
Duration: 22/05/2015-22/11/2018

Graus F. **Mecanismos patogénicos de los anticuerpos IgG4 contra antígenos de superficie neuronal en encefalitis autoinmunes.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00377
Duration: 01/01/2016-31/12/2018

Llufriu S. **Rehabilitación cognitiva y plasticidad cerebral en la Esclerosis Múltiple: evaluación a través de un ensayo clínico aleatorizado y controlado.**
Sponsored by: Fundació salud 2000. 17-EM-010
Duration: 01/06/2017-01/06/2020

Martinez-Lapiscina E. **Molecular imaging of the retina in patients with Multiple Sclerosis by Raman Spectroscopy.**
Sponsored by: Fundació La Marató de TV3. 20142030
Duration: 03/06/2015-02/06/2018

Saiz A. **Biomarcadores de resonancia magnética avanzada en esclerosis múltiple: asociación con el perfil clínico evolutivo y sustrato genético.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00587
Duration: 01/01/2016-31/12/2018

Saiz A. REEM: **Red española de esclerosis múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD16/0015/0002
Duration: 01/01/2017-31/12/2021

Villoslada P. **Advancing human antigen-specific t-regulatory cell expanding nanomedicines for autoimmune disease: translational studies in humanized mice.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE14/00027
Duration: 01/05/2015-31/05/2017

VillosladaP. **Estudio del daño axonal en esclerosis múltiple mediante estudios de neuroimagen de la vía óptica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00061
Duration: 01/01/2016-31/12/2018

Villoslada P. **Cuidado personalizado de salud en la Esclerosis Múltiple usando herramientas de medicina de sistemas (Sys4MS).**
Sponsored by: European commission.
Duration: 01/05/2016-31/12/2018

Villoslada P. **Estudio del daño axonal en esclerosis múltiple mediante esudios de neuroimagen de la vía óptica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC15/00052
Duration: 01/01/2016-31/12/2018

Villoslada P. **Multiple manifestations of genetic and non-genetic factors in Multiple Sclerosis disentangled with a multi-omics approach to accelerate personalized medicine (MultipleMS).**
Sponsored by: European commission. H2020-SC1_16
Duration: 01/01/2017-31/12/2021

DOCTORAL THESES

Graus F, Saiz A. **Neurological syndromes associated with antibodies against the glutamic acid decarboxylase (GAD).**
PhD student: Helena Ariño Rodríguez

Llufriu S, Prats A. **Desarrollo de una metodología de reconstrucción de fibras de sustancia blanca en difusión por RM y su aplicación al estudio de la relación entre la conectividad estructural cerebral y el rendimiento cognitivo en pacientes con EM.**
PhD student: Eloy Martínez de las Heras

4.11 Neurobiology Unit

LOCATION
IIBB-CSIC labs
UB Biomedical Sciences

KEYWORDS
1. **Neurodegeneration**
2. **Alzheimer's disease**
3. **Mitochondrial DNA**
4. **Microglia**
5. **Neuronal pentraxin**
6. **Neuronal deat**
7. **Mitochondrial dynamics**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	22.52	6	2	3
2016	39.09	5	4	1
2017	7.37	2	1	1

TEAM INVOLVED IN
CIBERNED
AGAUR_SGR14
AGAUR_SGR17

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Nicole Mahy (UB)
Petar Podlesniy (CIBER)
Manuel Jose Rodriguez (UB)

PRE-DOCTORAL RESEARCHERS
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Margalida Puigròs (CIBER)
Vicente Roca (IIBB-CSIC)

TECHNICIANS
Carmen Andrade (UB)
Núria Serra (CIBER)

STRATEGIC OBJECTIVES

1. To determine the role of mitochondrial DNA, mitochondrial dynamics and mitophagy on synapse elimination and neuronal death in models of neurodegenerative dementias and Parkinson's disease.
2. To gain knowledge on the mechanisms regulating neuroinflammation in neurodegenerative disorders.
3. To characterize cell-free mitochondrial DNA as a biomarker for neurodegenerative diseases.

MAIN LINES OF RESEARCH

The Neurobiology Unit group investigates the molecular mechanisms of neurodegeneration to identify new targets for therapeutic intervention. Specific lines of research aim to:

1. Characterize cell-free mitochondrial DNA in cerebrospinal fluid as a biomarker for the early detection of Alzheimer's and Parkinson's diseases.
2. Investigate the function of Neuronal Pentraxin 1 in the neuronal death program, with the hypothesis that inhibition of this protein may constitute a new treatment for chronic neurodegenerative disorders.

TEAM Ramon Trullàs

3. Study the role of mitochondrial DNA and mitochondrial dynamics in fibroblasts from patients with Parkinson's disease and other cellular models of neurodegeneration.

4. Study the mechanism by which KATP channel participates in the control of microglial activity in different neurological disorders.

5. Investigate the mechanisms whereby CX3CR1 regulates microglial activation in amyotrophic lateral sclerosis.

6. Study the mechanisms that alter the main proteolytic systems, including autophagy, involved in the maintenance of intracellular proteostasis.

7. Study the role of mitochondrial function in neuroinflammation and amyloid beta-induced cell death.

PUBLICATIONS

Originals / I.F.: 7.369

1. Podlesniy P, Trullas R. **Absolute measurement of gene transcripts with Selfie-digital PCR.** *SCIENTIFIC REPORTS.* 7(1):8328. I.F.: 4.259

2. Jorba I., Menal M., Torres M., Gozal D., Piñol-Ripoll G., Colell A., Montserrat J., Navajas D., Farré R., Almendros I. **Ageing and chronic intermittent hypoxia mimicking sleep apnea do not modify local brain tissue stiffness in healthy mice.** *JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS.* 71:106-113. I.F.: 3.110

GRANTS FOR RESEARCH IN PROGRESS

Colell A. **Papel del colesterol en la eliminación de beta-amiloide como diana terapéutica en la Enfermedad de Alzheimer.**
Sponsored by: Ministerio de Economia y Competitividad. SAF2013-47246-R
Duration: 01/01/2014-30/09/2017

Colell A. **Cholesterol and Ab-induced mitochondrial oxidative stress as a causal factors and therapeutic targets in Alzheimer's Disease.**
Sponsored by: Fundació La Marató de TV3
Duration: 01/07/2015-31/12/2018

Trullas R. **Mecanismos de regulación del número de copias de ADN mitocondrial para el tratamiento del Alzheimer.**
Sponsored by Ministerio de Economía y competitividad. SAF2014-56644-R
Duration 01/01/2015-31/12/2017

4.12 Alzheimer's disease and other cognitive disorders

LOCATION
HCB building
CELLEX building 3B

KEYWORDS
1. **Alzheimer disease**
2. **Degenerative neurological deiseases**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	-	-	-	-
2016	144.23	24	17	5
2017	140.93	25	17	8

TEAM INVOLVED IN
AGAUR_SGR17

AWARDS
Premios CLÍNIC- MSD
Institution: Hospital Clínic
Awardee/s: Neus Falgàs Martínez

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Neus Falgàs (FCRB)
Jaume Olives (FCRB)
Adrià Tort (FCRB)

TECHNICIANS
Cristina Munoz (IDIBAPS)

NURSING STAFF
Clara Coquard (FCRB)
Guadalupe Fernández (FCRB)

STRATEGIC OBJECTIVES

- Investigation to improve diagnosis and treatment of neurodegenerative diseases.
- Investigations on clinical, molecular and imaging biomarkers that characterize the preclinical phase of Alzheimer disease.
- Investigation of biological pathways involved in the pathogenesis of Alzheimer's disease and detection of new cognitive, biochemical and neuroimaging markers in preclinical and prodromal patients

MAIN LINES OF RESEARCH

The main research lines of the Alzheimer's Disease and other Cognitive Disorders Unit (ADCDU) team are:
- Healthy aging-Alzheimer's disease continuum (subjective cognitive decline, preclinical and prodromal Alzheimer's disease).
- Study of genetic dementias in preclinical and early clinical phases.
- Biomarkers for sporadic early onset Alzheimer's disease.
- Biomarkers for non-Alzheimer dementias (prion diseases, frontotemporal dementia, primary progressive aphasia, Lewy body dem.).
- Non-pharmacological interventions in neurodegenerative cognitive disorders.

PUBLICATIONS

Originals / I.F.: 140.93

1. De Roeck A, Van den Bossche T, van der Zee J, Verheijen J, De Coster W, Van Dongen J, Dillen L, Baradaran-Heravi Y, Heeman B, Sanchez-Valle R, Lladó A, Nacmias B, Sorbi S, Gelpi E, Grau-Rivera O, Gómez-Tortosa E, Pastor P, Ortega-Cubero S, Pastor MA, Graff C, Thonberg H, Benussi L, Ghidoni R, Binetti G, de Mendonça A, Martins M, Borroni B, Padovani A, Almeida MR, Santana I, Diehl-Schmid J, Alexopoulos P, Clarimon J, Lleó A, Fortea J, Tsolaki M, Koutroumani M, Mat?j R, Rohan Z, De Deyn P, Engelborghs S, Cras P, Van Broeckhoven C, Sleegers K, European Early-Onset Dementia (EU EOD) consortium. **Deleterious ABCA7 mutations and transcript rescue mechanisms in early onset Alzheimer's disease.** *ACTA NEUROPATHOLOGICA*. 134(3):475-487. I.F.: 12.213

2. Iranzo, Alex; Santamaria, Joan; Valldeoriola, Francesc; Serradell, Monica; Salamero, Manel; Gaig, Carles; Ninerola-Baizan, Aida; Sanchez-Valle, Raquel; Llado, Albert; De Marzi, Roberto; Stefani, Ambra; Seppi, Klaus; Pavia, Javier; Hoegl, Birgit; Poewe, Werner; Tolosa, Eduard; Lomena, Francisco. **Dopamine Transporter Imaging Deficit Predicts Early Transition to Synucleinopathy in Idiopathic Rapid Eye Movement Sleep Behavior Disorder.** *ANNALS OF NEUROLOGY*. 82(3):419-428. I.F.: 9.890

3. Carmona-Iragui M, Balasa M, Benejam B, Alcolea D, Fernández S, Videla L, Sala I, Sánchez-Saudinós MB, Morenas-Rodriguez E, Ribosa-Nogué R, Illán-Gala I, Gonzalez-Ortiz S, Clarimón J, Schmitt F, Powell DK, Bosch B, Lladó A, Rafii MS, Head E, Molinuevo JL, Blesa R, Videla S, Lleó A, Sánchez-Valle R, Fortea J. **Cerebral amyloid angiopathy in Down syndrome and**

sporadic and autosomal-dominant Alzheimer's disease. *ALZHEIMERS AND DEMENTIA.* 13(11):1251-1260. I.F.: 9.478

4. Molinuevo JL, Rabin LA, Amariglio R, Buckley R, Dubois B, Ellis KA, Ewers M, Hampel H, Klöppel S, Rami L, Reisberg B, Saykin AJ, Sikkes S, Smart CM, Snitz BE, Sperling R, van der Flier WM, Wagner M, Jessen F, Subjective Cognitive Decline Initiative (SCD-I) Working Group. **Implementation of subjective cognitive decline criteria in research studies.** *ALZHEIMER'S AND DEMENTIA.* 13(3):296-311. I.F.: 9.478

5. Bosco P., Redolfi A., Bocchetta M., Ferrari C., Mega A., Galluzzi S., Austin M., Chincarini A., Collins D., Duchesne S., Maréchal B., Roche A., Sensi F., Wolz R., Alegret M., Assal F., Balasa M., Bastin C., Bougea A., Emek-Sava? D., Engelborghs S., Grimmer T., Grosu G., Kramberger M., Lawlor B., Mandic Stojmenovic G., Marinescu M., Mecocci P., Molinuevo J., Morais R., Niemantsverdriet E., Nobili F., Ntovas K., O'Dwyer S., Paraskevas G., Pelini L., Picco A., Salmon E., Santana I., Sotolongo-Grau O., Bosco P., Redolfi A., Bocchetta M., Ferrari C., Mega A., Galluzzi S., Austin M. **The impact of automated hippocampal volumetry on diagnostic confidence in patients with suspected Alzheimer's disease: An EADC study.** *ALZHEIMERS AND DEMENTIA.* 13(9):1013-1023. I.F.: 9.478

6. Alcolea D, Vilaplana E, Suárez-Calvet M, Illán-Gala I, Blesa R, Clarimón J, Lladó A, Sánchez-Valle R, Molinuevo JL, García-Ribas G, Compta Y, Martí MJ, Piñol-Ripoll G, Amer-Ferrer G, Noguera A, García-Martín A, Fortea J, Lleó A. **CSF sAPPβ, YKL-40, and neurofilament light in frontotemporal lobar degeneration.** *NEUROLOGY.* 89(2):178-188. I.F.: 8.320

7. Llorens F, Thüne K, Tahir W, Kanata E, Diaz-Lucena D, Xanthopoulos K, Kovatsi E, Pleschka C, Garcia-Esparcia P, Schmitz M, Ozbay D, Correia S, Correia Â, Milosevic I, Andréoletti O, Fernández-Borges N, Vorberg IM, Glatzel M, Sklaviadis T, Torres JM, Krasemann S, Sánchez-Valle R, Ferrer I, Zerr I. **YKL-40 in the brain and cerebrospinal fluid of neurodegenerative dementias.** *MOLECULAR NEURODEGENERATION.* 12(1):83-83. I.F.: 6.780

8. Cosín-Tomás M., Antonell A., Lladó A., Alcolea D., Fortea J., Ezquerra M., Lleó A., Martí M., Pallàs M., Sanchez-Valle R., Molinuevo J., Sanfeliu C., Kaliman P. **Plasma miR-34a-5p and miR-545-3p as Early Biomarkers of Alzheimer's Disease: Potential and Limitations.** *MOLECULAR NEUROBIOLOGY.* 54(7):5550-5562. I.F.: 6.190

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GRANTS FOR RESEARCH IN PROGRESS

Lladó A. **Clinical phenotypes and new physiopathological, diagnostic and prognostic biomarkers for early onset Alzheimer's disease and behavioural variant of frontotemporal dementia.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00282
Duration:01/01/2015-31/12/2018

Molinuevo JL, Rami L. **AETIONOMY – Organising knowledge about neurodegenerative disease mechanisms for the improvement of drug development and therapy.**
Sponsored by: European commission IMI_12
Duration: 01/01/2014-31/12/2018

Molinuevo JL. **MEDIT-AGEING: Investigating the impact of meditation training on mental health and wellbeing in the ageing population.**
Sponsored by: European commission H2020-PHC_15
Duration: 01/01/2015-31/12/2020

Rami 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: 01/01/2012-30/06/2018

Rami L**. Efectos de la pérdida de peso mediante dieta mediterránea hipocalórica y aumento de la actividad física sobre la congnición y la estructura y función cerebrales determinados por resonancia magnética funcional en individuos obesos con síndrome metabólico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00563
Duration: 01/01/2015-31/12/2017

Rami L. **Subjective cognitive decline in preclinical Alzheimer's Disease: European initiative on harmonization and on a lifestyle-based prevention strategy.(EURO-SCD)**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC14/00014
Duration: 01/01/2015-31/12/2018

Sanchez-Valle R. **Estudio de portadores de mutaciones determinantes de enfermedad de Alzheimer genética en fases preclínicas cognición, neuroimagen estructural y funcional y marcadores bioquímicos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00013
Duration: 01/01/2013-30/06/2017

Sanchez-Valle R. **Organising Knowledge about Neurodegenerative Disease Mechanisms for the Improvement of Drug Development and Therapy.**
Sponsored by: European commission IMI_12
Duration: 01/01/2014-31/12/2018

Sánchez-Valle R. **Searching for therapeutic interventions in frontotemporal dementia with C9ORF72 repeat expansions in the presymptomatic stage (PreFrontALS).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC14/00013
Duration: 01/01/2015-30/06/2019

Sánchez-Valle R. **Study of genetic frontotemporal dementia in preclinical and early stages of the disease: cognitive performance, structural and functional neuroimaging and biochemical markers (GENFI2-Barcelona site).**
Sponsored by: Fundació La Marató de TV3. 20143810
Duration: 12/05/2015-11/05/2020

Sánchez-Valle R. **Genetic dementia (autosomal dominant Alzheimer's disease and genetic prion disease) in preclinical and early stages of the disease: cognitive performance, neuroimaging and biochemical markers.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/000235
Duration:01/01/2017-31/12/2019

DOCTORAL THESES

Molinuevo J, Rami L. **Nuevos instrumentos subjetivos y objetivos para evaluar la fase preclínica de la enfermedad de Alzheimer.**
PhD student: Maria Antonella Mollica

Sanchez-Valle R, Gelpi E.**Enfermedades priónicas y otras demencias rápidamente progresivas: caracterización clínico-patológica, neuroinmunológica y mediante neuroimagen por resonancia magnética.**
PhD student: Oriol Grau Rivera

ANNUAL
SCIENTIFIC REPORT
2017

AREA 5

ONCOLOGY AND HAEMATOLOGY

5

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AREA 5

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5.1 Oncological molecular pathology

LOCATION
CEK building floor 2

KEYWORDS
1. **Lymphoid neoplasms**
2. **Epigenome**
3. **Transcriptional regulation**
4. **Molecular pathology**
5. **Solid tumors**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	338.96	43	35	6
2016	333.82	45	36	5
2017	421.05	57	46	6

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STRATEGIC OBJECTIVES

Identification of genetic and molecular mechanisms implicated in the development and progression of human neoplasms. Development of strategies to transfer to clinical practice the knowledge generated by basic research on human tumours. 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 to identify parameters that may improve the diagnosis of these disease, stratify patients according to biological risk, and define possible therapeutic targets.
b) To define the complete catalogue of somatic genomic alterations in several lymphoid neoplasm and their clinical and functional relevance.

Molecular Pathology of Solid neoplasms

a) To study the molecular mechanisms of invasion and metastasis, transcriptional expression profiles implicated in the development and progression of different human tumours in relation to biological aggressivity and therapeutic options. We focus mainly on breast and prostate tumours as neoplasms under hormone influence, and skin, digestive, urological and airway neoplasms.
b) Study of the possible criteria of treatment response and prognosis in neurological tumours.

Transcriptional Regulation of Gene Expression

a) Study the molecular mechanisms regulating gene expression during normal cell differentiation and in cancer.

b) Characterization of the transcription factors ZEB1 and ZEB2 as prognostic and predictive biomarkers in cancer (e.g., carcinomas, lymphomas) and other diseases (e.g. muscular dystrophies).

Biomedical Epigenomics

a) To understand the epigenetic mechanisms involved both in normal differentiation and neoplastic cell transformation. In particular, focusing on B cells as cellular model, we aim at characterizing and understanding gene regulation alterations in the initiation and evolution of lymphoid malignancies.

b) To identify novel biomarkers for a better classification and estimation of prognosis in lymphoid neoplasms as well as to reveal novel molecular targets for therapeutic interventions.

RESEARCH GROUP
MOLECULAR PATHOLOGY OF LYMPHOID NEOPLASMS

GROUP LEADER
Elías Campo (HCB)

Lymphoid neoplasias are a very heterogeneous group of tumors with remarkable variability in their biological behaviour and clinical manifestations.
Our group aims to understand the genetic, epigenetic, and molecular mechanisms underlying the biological diversity of these tumors and how they may influence the clinical evolution of the patients.
The use of new genomic technologies is providing new perspectives on the tumors we concentrate our research, particularly chronic lymphocytic leukemia, mantle cell lymphoma, follicular lymphoma and diffuse large B-cell lymphoma. In addition to better understand the pathogenesis of these tumors we are generating new approaches to translate this new information into the clinics.

GROUP Elías Campo

RESEARCH GROUP
MOLECULAR PATHOLOGY OF SOLID TUMORS

GROUP LEADER
Pedro Luis Fernández (HCB)

Our study of solid neoplasms is mainly focused on breast, urological, digestive, skin, H&N and neurological cancers. We have started massive genomic analysis of breast carcinomas with NGS techniques with special interest in triple-negative tumours and we plan to correlate genomic abnormalities with clinicopathological parameters of the cases. This type of genomic studies is also being applied to bladder cancer in addition to FISH experiments in order to subclassify transitional carcinomas in advanced stages.

GROUP Pedro Luis Fernández

RESEARCH GROUP
TRANSCRIPTIONAL REGULATION OF GENE EXPRESSION

GROUP LEADER
Antonio Postigo (ICREA-IDIBAPS)

Our group investigates the regulation of gene expression by the ZEB family of transcription factors (ZEB1 and ZEB2). We use cell lines, transgenic mice and human samples to study the role of ZEB factors in the regulation of cell stemness and differentiation and tumor progression using epithelial (colon, ovarian, breast, lung), skeletal muscle and hematopoietic systems as models. The group has received funding from the Spanish and Catalan governments and the EU as well as from national and international private foundations (e.g., AECC, La Marató de TV3, Leukemia Research Foundation, Avon SAU, Cosmetics, ACMCB, FOT).

GROUP Antonio Postigo

RESEARCH GROUP
BIOMEDICAL EPIGENOMICS

GROUP LEADER
José Ignacio Martín-Subero (IDIBAPS)

The biomedical epigenomics group is focused on the application of whole-genome technologies to characterize epigenomic dynamics during cell differentiation and neoplastic transformation, with particular emphasis on studying normal and neoplastic B cells. A major goal of the group is to understand the molecular determinants of gene deregulation in lymphoid tumors through the integration of different layers of information, i.e., genetic alterations, DNA methylation, histone modifications, chromatin accessibility and 3D chromatin structure. The ultimate goal is to translate the generated epigenomic knowledge into a benefit for patients, in terms of improved diagnosis, estimation of prognosis and treatment.

GROUP José Ignacio Martín-Subero

PUBLICATIONS

Originals / I.F.: 421.050

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53. Nomdedeu, Meritxell; Pereira, Arturo; Calvo, Xavier; Colomer, Joan; Sole, Francesc; Arias, Amparo; Gomez, Candida; Luno, Elisa; Cervera, Jose; Arnan, Montserrat; Pomares, Helena; Ramos, Fernando; Oiartzabal, Itziar; Espinet, Blanca; Pedro, Carme; Arrizabalaga, Beatriz; Laura Blanco, Maria; Tormo, Mar; Maria Hernandez-Rivas, Jesus; Diez-Campelo, Maria; Ortega, Margarita; Valcarcel, David; Cedena, Maria-Teresa; Collado, Rosa; Grau, Javier; Granada, Isabel; Sanz, Guillermo; Campo, Elias; Esteve, Jordi; Costa, Dolors;Spanish MDS Grp. **Clinical and biological significance of isolated Y chromosome loss in myelodysplastic syndromes and chronic myelomonocytic leukemia. A report from the Spanish MDS Group.** *LEUKEMIA RESEARCH.* 63:85-89. I.F.: 2.501

54. Dlouhy I, Filella X, Rovira J, Magnano L, Rivas-Delgado A, Baumann T, Martínez-Trillos A, Balagué O, Martínez A, González-Farre B, Karube K, Gine E, Delgado J, Campo E, López-Guillermo A. **High serum levels of soluble interleukin-2 receptor (sIL2-R), interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF) are associated with adverse clinical features and predict poor outcome in diffuse large B-cell lymphoma.** *LEUKEMIA RESEARCH.* 59:20-25. I.F.: 2.501

55. Moisés J, Navarro A, Santasusagna S, Viñolas N, Molins L, Ramirez J, Osorio J, Saco A, Castellano JJ, Muñoz C, Morales S, Monzó M, Marrades RM. **NKX2-1 expression as a prognostic marker in early-stage non-small-cell lung cancer.** *BMC PULMONARY MEDICINE.* 17(1):197. I.F.: 2.435

56. El Hadi H, Abdellaoui-Maane I, Kottwitz D, El Amrani M, Bouchoutrouch N, Qmichou Z, Karkouri M, ElAttar H, Errihani H, Fernandez PL, Bakri Y, Sefrioui H, Moumen A. **Development and evaluation of a novel RT-qPCR based test for the quantification of HER2 gene expression in breast cancer.** *GENE.* 605:114-122. I.F.: 2.415

57. Beardo P., Truan Cacho D., Izquierdo L., Alcover-Garcia J., Alcaraz A., Extramiana J., Mallofré C. **Cancer-Specific Survival Stratification Derived from Tumor Expression of Tissue Inhibitor of Metalloproteinase-2 in Non-Metastatic Renal Cell Carcinoma.** *PATHOLOGY ONCOLOGY RESEARCH.* I.F.: 1.736

Review / I.F.: 13.706

1. Rosenquist R, Beà S, Du MQ, Nadel B, Pan-Hammarström Q. **Genetic landscape and deregulated pathways in B-cell lymphoid malignancies.** *JOURNAL OF INTERNAL MEDICINE.* 282(5):371-394. I.F.: 7.980

2. Campo E. **Pathology and classification of aggressive mature B-cell lymphomas.** *HEMATOLOGICAL ONCOLOGY.* 35(S1):80-83. I.F.: 3.118

3. Beà S, Amador V. **Role of SOX11 and Genetic Events Cooperating with Cyclin D1 in Mantle Cell Lymphoma.** *CURRENT ONCOLOGY REPORTS.* 19(6):43. I.F.: 2.608

Letters / I.F.: 15.475

1. Navarro A, Clot G, Martínez-Trillos A, Pinyol M, Jares P, González-Farré B, Martínez D, Trim N, Fernández V, Villamor N, Colomer D, Costa D, Salaverria I, Martín-Garcia D, Erber W, López C, Jayne S, Siebert R, Dyer MJS, Wiestner A, Wilson WH, Aymerich M, López-Guillermo A, Sánchez À, Campo E, Matutes E, Beà S. **Improved classification of leukemic B-cell lymphoproliferative disorders using a transcriptional and genetic classifier.** *HAEMATOLOGICA.* 102(9):e360-e363. I.F.: 7.702

2. Ortiz-Maldonado V, Villamor N, Baumann T, Aymerich M, Magnano L, Mozas P, Rivas-Delgado A, Martínez-Trillos A, Giné E, Campo E, López-Guillermo A, Delgado J. **Is there a role for minimal residual disease monitoring in the management of patients with hairy-cell leukaemia?** BRITISH JOURNAL OF HAEMATOLOGY. I.F.: 5.670

3. Morollón N., Rodríguez F., Duarte J., Sánchez R., Camacho F., Campo E. **Brain lesions in a long-term kidney transplant recipient: Primary cerebral lymphoma or cerebral toxoplasmosis?** *NEUROLOGIA.* 32(4):268-270. I.F.: 2.103

Editorial / I.F.: 11.855

1. Balagué O, Campo E. **Refining The Prognostic Impact of the Cell Of Origin in Diffuse Large B-Cell Lymphoma.** *ANNALS OF ONCOLOGY.* 28(5):918-920. I.F.: 11.855

Case Reports / I.F.: 1.401

1. Castro, Jesus; Cuatrecasas, Miriam; Balaguer, Francesc; Ricart, Elena; Pellise, Maria. **Serrated polyposis syndrome associated with long-standing inflammatory bowel disease.** *REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS.* 109(11):796-798. I.F.: 1.401

Clinical Guidelines / I.F.: 11.855

1. Dreyling M; Campo E; Hermine O; Jerkeman M; Le Gouill S; Rule S; Shpilberg O; Walewski J; Ladetto M. **Newly diagnosed and relapsed mantle cell lymphoma: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up.** *ANNALS OF ONCOLOGY.* 28(suppl_4):iv62-iv71. I.F.: 11.855

GRANTS FOR RESEARCH IN PROGRESS

Amador V. **Characterization of the oncogenic molecular mechanisms of the SOX11 transcription factor in aggressive mantle cell lymphomas.**
Sponsored by: Fundació La Marató de TV3.
I3/20130110
Duration: 15/04/2014-14/04/2017

Amador V. **Descifrando las redes moleculares del microambiente protector y de las células madre en los linfomas de células del manto agresivos para innovar en estrategias terapéuticas.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
BFU2015-64879-R
Duration: 01/01/2016-31/12/2018

Beà S. **Comprehensive whole genome and exome sequence analysis in mantle cell lymphoma primary tumors.**
Sponsored by: Fundació La Marató de TV3.
20130410
Duration: 15/04/2014-14/04/2017

Beà S. **Estudio genético y molecular de los linfomas B. Caracterización de entidades y subtipos, clonalidad y significado pronóstico.**
Sponsored by: Instituto de Salud Carlos II (ISCIII). PI14/00571
Duration: 01/01/2015-31/12/2017

Campo E. **Red Temática de Investigación Cooperativa en Cáncer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0036/0036
Duration: 01/01/2013-30/06/2017

Campo E. **Microenvironment Interactions in the Pathogenesis of Lymphoid Neoplasms and Chronic Inflammatory Disorders.Identification of Biomarkers and Design of New Therapeutic Strategies.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PIE13/00033
Duration: 01/01/2014-30/06/2017

Campo E. **Genetic and cellular intratumor heterogeneity as predictor of chronic lymphocytic leukemia outcome and treatment.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). AC15/00028
Duration: 01/01/2016- 31/12/2018

Campo E. **Functional and Clinical Impact of Genomics Analysis in CLL.**
Sponsored by: Instituto de Salud Carlos III. PMP15/00007
Duration: 01/01/2016- 31/12/2019

Campo E. **Impacto Clínico de la Heterogeneidad Genómica y Evolución Clonal en Neoplasias Linfoides B. Definición de Nuevos Modelos Diagnósticos y Pronósticos.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
SAF2015-64885-R
Duration: 01/01/2016- 31/12/2018

Campo E. **Study of the tumor heterogeneity and tracking clonal evolution of mutations in TP53 and other driver genes in B-cell lymphoid neoplasms using targeted ultra-deep Next Generation Sequencing. GLD15/00288.**
Sponsored by: Gilead España
Duration: 01/03/2016- 31/03/2018

Campo E. **La Medicina Personalitzada a Catalunya-Càncer (MedPerCan). Estudi pilot sobre l'impacte de l'anàlisi genòmica en la presa de decisions en oncologia.**
Sponsored by: Generalitat de Catalunya (PERIS). SLT002/16/00374
Duration: 27/03/2017-31/12/2019

Campo E. **Impacto clínico y biológico de las alteraciones genómicas en neoplasias linfoides.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
SAF2016-81860-REDT
Duration: 01/07/2017-30/06/2019

Cuatrecasas M (and Camps J.). **Nuevas estrategias para la estratificación del riesgo de recidiva en pacientes con cáncer de colon en estadio II: Integración de perfiles genómicos y carga tumoral ganglionar.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI17/01304.
Duration: 01/01/2018-31/12/2020

Hernández L. **Búsqueda de lncRNAs relacionados con la polarización de macrófagos pro-tumorogénicos (M2-TAM) en linfomas foliculares/difusos de células grandes y evaluación de su valor clínico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00551
Duration: 01/01/2016-31/12/2018

Jares P. **Nuevos mecanismos oncogénicos de ciclina D1 en linfoma de células del manto (LCM): Implicación en la regulación transcripcional, la respuesta al daño en el ADN y el estrés eplicativo.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00355
Duration: 01/01/2015- 31/12/2017

Martin-Subero JI. **Functional and clinical impact of enhancer DNA methylation in mantle cell lymphoma.**
Sponsored by: European Hematology Association. EHA_FELLOW13SEPT_02
Duration: 16/11/2014- 15/11/2017

Martinez A. **SLPC asociados a inmunodeficiencia: estudio de la transformación secretora y de la activación litica de los herpesvirus como nuevas dianas terapéuticas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00333
Duration: 01/01/2015- 31/12/2017

Postigo A. **ZEB proteins and tumor progression. Role of ZEB1 and ZEB2 in oncogenic transformation benign-malignant transition and cancer cell proliferation and survival.**
Sponsored by: Fundació La Marató de TV3. 20133010
Duration: 15/04/2014-31/01/2018

Postigo A. **Papel de los factores ZEB en la especificación y activación hematopoyética y en la interacción célula maligna- microambiente en neoplasias hematológicas.**
Sponsored by: Ministerio de Economia y Competitividad (MINECO). SAF2014-52874-R
Duration: 01/01/2015-31/10/2018

Salaverria I. **Caracterización molecular, genética e inmunofenotípica de los linfomas de centro germinal en pacientes pediátricos, adolescentes y jóvenes adultos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00580
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Campo E, Martínez A. **Síndromes linfoproliferativos asociados a inmunodeficiencias secundarias: papel de la infección por virus herpes oncogénicos y la diferenciación plasmocelular.**
PhD student: Blanca González Farré

Campo E, Jares P . **Mantle Cell Lymphoma pathogenesis: another turn of the screw to cyclin D1 overexpression.**
PhD student: Robert Albero Gallego

Campo E, Perez-Galan P. **Targeting the crosstalk between tumor cells and microenvironment: a new therapeutic approach for the treatment of lymphoid neoplasms.**
PhD student: Anna Vidal Crespo

Hernández L, Slavutsky I. **Análisis de los perfiles de expresión de genes codificantes y no codificantes en linfomas no- Hodgkin.**
PhD student: Alejandro Roisman

Martinez A, Roué G. **Diferenciación plasmocelular en linfomas no-Hodgkin de células B: implicaciones clínicas y terapéuticas.**
PhD Student: Carla Solé Cañadas

Ordi J,Ramirez J. **Microscopía virtual en diagnóstico y docencia en un hospital universitario.**
PhD student: Adela Saco Álvarez

Postigo A, Castells A. **Role of ZEB1 in tumor progression: Regulation of cell invasion and senescence.**
PhD student: Oriol de Barrios Barri

Postigo A. **Role of ZEB1 in macrophages during homeostasis, inflammation and cancer.**
PhD Student: Marlies Cortes Hinojosa

Postigo A. **Role of ZEB1 in skeletal muscle: regulation of cell differentiation, response to tissue damage and regeneration.**
PhD Student: Laura Siles Mena

5.2 Diagnosis and therapy in oncology

LOCATION
HCB building

KEYWORDS
1. **Oncology molecular studies**
2. **Radiotherapy**
3. **Breast cancer diagnosis**
4. **Sentinel lymph node**
5. **Positron emission tomography**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	93.83	23	12	6
2016	70.70	17	13	2
2017	133.53	16	8	5

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Eugènia Verger (HCB)

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.** Comparison of microRNA patterns in embryonic and tumor tissues, with a view to selecting more specific treatments.

2. **Effects of synchrotron radiation upon the neoplastic cell.** Carried out jointly with UAB, comparison is made of the biological action of synchrotron radiation with conventional X-rays used in radiotherapy.

3. **Breast MRI.** Tumour uptake and diffusion to predict pathological response to primary systemic treatment in breast cancer.

TEAM Francesca Pons

4. **Functional mRI techniques.** Studies of perfusion, diffusion and spectroscopy applied to the staging and treatment monitoring of brain and head and neck tumours.

5. **Scintigraphic detection of the sentinel node and hybrid tracers in radioguided surgery,** applied in different tumours to avoid unnecessary lymphadenectomies. Radioguided surgery approaches with new tracers and methodologies.

6. **Positron Emission Tomography (PET/CT)** for the staging and control of treatment response in different types of tumors.

7. **Study of bacterial radiosensitivity** in E. coli, S. epidermidis and S. aureus.

PUBLICATIONS

Originals / I.F.: 133.534

1. Faries, M. B.; Thompson, J. F.; Cochran, A. J.; Andtbacka, R. H.; Mozzillo, N.; Zager, J. S.; Jahkola, T.; Bowles, T. L.; Testori, A.; Beitsch, P. D.; ... ...; Elashoff, R. M. **Completion Dissection or Observation for Sentinel-Node Metastasis in Melanoma.** *NEW ENGLAND JOURNAL OF MEDICINE.* 376(23):2211-2222. I.F.: 72.406

2. Paredes P, Vidal-Sicart S, Campos F, Tapias A, Sánchez N, Martínez S, Carballo L, Pahisa J, Torné A, Ordi J, Carmona F, Lomeña F. **Role of ICG-(99m)Tc-nanocolloid for sentinel lymph node detection in cervical cancer: a pilot study.** *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING.* 44(11):1853-1861. I.F.: 7.277

3. Renú A, Laredo C, Lopez-Rueda A, Llull L, Tudela R, San-Roman L, Urra X, Blasco J, Macho J, Oleaga L, Chamorro A, Amaro S. **Vessel Wall Enhancement and Blood-Cerebrospinal Fluid Barrier Disruption After Mechanical Thrombectomy in Acute Ischemic Stroke.** *STROKE.* 48(3):651-657. I.F.: 6.032

4. Urra X., Laredo C., Zhao Y., Amaro S., Rudilosso S., Renú A., Prats-Galino A., Planas A., Oleaga L., Chamorro Á. **Neuroanatomical correlates of stroke-associated infection and stroke-induced immunodepression.** *BRAIN, BEHAVIOR, AND IMMUNITY.* 60:142-150. I.F.: 5.964

5. Rabbie R, Rashid M, Arance AM, Sánchez M, Tell-Marti G, Potrony M, Conill C, van Doorn R, Dentro S, Gruis NA, Corrie P, Iyer V, Robles-Espinoza CD, Puig-Butille JA, Puig S, Adams DJ. **Genomic analysis and clinical management of adolescent cutaneous melanoma.** *PIGMENT CELL AND MELANOMA RESEARCH.* 30(3):307-316. I.F.: 5.170

6. Monzo M, Santasusagna S, Moreno I, Martinez F, Hernández R, Muñoz C, Castellano JJ, Moreno J, Navarro A. **Exosomal microRNAs isolated from plasma of mesenteric veins linked to liver metastases in resected patients with colon cancer.** *ONCOTARGET.* 8(19):30859-30869. I.F.: 5.168

7. Renu, Arturo; Laredo, Carlos; Tudela, Raul; Urra, Xabier; Lopez-Rueda, Antonio; Llull, Laura; Oleaga, Laura; Amaro, Sergio; Chamorro, Angel. **Brain hemorrhage after endovascular reperfusion therapy of ischemic stroke: a threshold-finding whole-brain perfusion CT study.** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM.* 37(1):153-165. I.F.: 5.081

8. Pericàs JM, García-de-la-Mària C, Brunet M, Armero Y, García-González J, Casals G, Almela M, Quintana E, Falces C, Ninot S, Fuster D, Llopis J, Marco F, Moreno A, Miró JM, Hospital Clinic Endocarditis Study Group. **Early in vitro development of daptomycin non-susceptibility in high-level aminoglycoside-resistant Enterococcus faecalis predicts the efficacy of the combination of high-dose daptomycin plus ampicillin in an in vivo model of experimental endocarditis.** *J ANTIMICROB CHEMOTHER.* 72(6):1714-1722. I.F.: 5.071

9. Gifre, L.; Ruiz-Gaspa, S.; Carrasco, J. L.; Portell, E.; Vidal, J.; Muxi, A.; Monegal, A.; Guanabens, N.; Peris, P. **Effect of recent spinal cord injury on the OPG/RANKL system and its relationship with bone loss and the response to denosumab therapy.** *OSTEOPOROSIS INTERNATIONAL.* 28(9):2707-2715. I.F.: 3.591

10. Balaña C, Capellades J, Pineda E, Estival A, Puig J, Domenech S, Verger E, Pujol T, Martinez-García M, Oleaga L, Velarde J, Mesia C, Fuentes R, Marruecos J, Del Barco S, Villà S, Carrato C, Gallego O, Gil-Gil M, Craven-Bartle J, Alameda F, GLIOCAT Group. **Pseudoprogression as an adverse event of glioblastoma therapy.** *CANCER MEDICINE.* 6(12):2858-2866. I.F.: 3.362

11. Carrera C., Gual A., Dláz A., Puig-Butillé J., Noguès S., Vilalta A., Conill C., Rull R., Vilana R., Arguis P., Vidal-Sicart S., Alós L., Palou J., Castel T., Malvehy J., Puig S. **Prognostic role of the histological subtype of melanoma on the hands and feet in Caucasians.** *MELANOMA RESEARCH.* 27(4):315-320. I.F.: 2.615

12. Garcia, Sergio; Rincon-Torroella, Jordina; Benet, Arnau; Oleaga, Laura; Gonzalez Sanchez, Jose Juan. **Assessment of White Matter Transgression During Neuroendoscopic Procedures Using Diffusion Tensor Image Fiber Tracking.** *WORLD NEUROSURGERY.* 99:232-240. I.F.: 2.592

13. Moisés J, Navarro A, Santasusagna S, Viñolas N, Molins L, Ramirez J, Osorio J, Saco A, Castellano JJ, Muñoz C, Morales S, Monzó M, Marrades RM. **NKX2-1 expression as a prognostic marker in early-stage non-small-cell lung cancer.** *BMC PULMONARY MEDICINE.* 17(1):197. I.F.: 2.435

14. Carreño M., Bien C., Asadi-Pooya A., Marusic P., Pimentel J., Wehner T., Mohanraj R., Uranga J., Gómez-Ibáñez A., Bargalló N., Rumià J., Setoain X., Pintor L., Bailles E., Falip M., Dalmau J., Gil F., Sperling M., Elisak M., Villanueva V., Roldán P., Boget T., Donaire A., Aparicio J., Graus F. **Epilepsy surgery in drug resistant temporal lobe epilepsy associated with neuronal antibodies.** *EPILEPSY RESEARCH.* 129:101-105. I.F.: 2.367

15. Biete A, Holub K. **Haemoglobin monitoring in endometrial cancer patients undergoing radiotherapy.** *CLINICAL AND TRANSLATIONAL ONCOLOGY.* 19(12):1518-1523. I.F.: 2.353

16. Valduvieco I, Biete A, Moreno LA, Gallart X, Rovirosa A, Saez J, Plana C, Peris P. **Is anti-inflammatory radiotherapy an effective treatment in trochanteritis?** *BR J RADIOL.* 90(1069):20160520. I.F.: 2.050

Review / I.F.: 21.972

1. Wit, Esther M. K.; Acar, Cenk; Grivas, Nikolaos; Yuan, Cathy; Horenblas, Simon; Liedberg, Fredrik; Olmos, Renato A. Valdes; van Leeuwen, Fijs W. B.; van den Berg, Nynke S.; Winter, Alexander; Wawroschek, Friedhelm; Hruby, Stephan; Janetschek, Guenter; Vidal-Sicart, Sergi; MacLennan, Steven; Lam, Thomas B.; van der Poel, Henk G. **Sentinel Node Procedure in Prostate**

Cancer: A Systematic Review to Assess Diagnostic Accuracy. *EUROPEAN UROLOGY.* 71(4):596-605. I.F.: 16.265

2. Cordeiro, Anna; Monzo, Mariano; Navarro, Alfons**. Non-Coding RNAs in Hodgkin Lymphoma.** *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES.* 18(6):1154. I.F.: 3.226

3. Valdes Olmos, Renato A.; Vidal-Sicart, Sergi; Manca, Gianpiero; Mariani, Giuliano; Leon-Ramirez, Luisa F.; Rubelo, Domenico; Giammarile, Francesco. **Advances in radioguided surgery in oncology.** *THE QUARTERLY JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING.* 61(3):247-270. I.F.: 2.481

Editorial / I.F.: 1.125

1. Valdes Olmos, Renato A.; Vidal-Sicart, Sergi. **Sentinel node in lung cancer.** *MEDICINA CLINICA.* 148(6):260-261. I.F.: 1.125

GRANTS FOR RESEARCH IN PROGRESS

Fuster D. **Evaluación de la PET/TC integrada con TC colonografía en el cáncer colorrectal obstructivo preoperatorio diagnosticado mediante colonoscopia óptica.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00555.
Duration: 01/01/2015-31/12/2017

Oleaga L. **Predictive geometrical model for personalized flow diverter sizing and interventional planning (PoroVIEW).**
Sponsored by: Ministerio de Economía y Competitividad (MINECO). RTC-2016-5073-1.
Duration: 01/11/2016-31/12/2018

DOCTORAL THESES

Bargalló N, Oleaga L. **Resonancia Magnética Funcional aplicada al manejo de tumores cerebrales en el entorno clínico.**
Phd Student: Sofía González Ortiz

Fuster D, Pons F. **Utilidad de PET/TC con 18F-fluorodesoxiglucosa en la detección de infecciones cardiovasculares y embolias sépticas hematógenas.**
Phd student: Ulises Granados Oliveros

5.3 Molecular biology of reproduction and development

LOCATION
UB School of Medicine

KEYWORDS
1. **Germinal cell line**
2. **Male infertility**
3. **Proteomics**
4. **Epigenetics**
5. **Cancer**
6. **Endocrine system**
7. **iPSC**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	11.33	4	2	-
2016	10.95	3	2	1
2017	11.86	3	2	1

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Meritxell Jodar (IDIBAPS)
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PRE-DOCTORAL RESEARCHERS
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Alberto de la Iglesia (IDIBAPS)
Montserrat Pau (UB)
Ada Soler (UB)

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Marta Guimerà (HCB)

STRATEGIC OBJECTIVES

The mechanisms involved in cell differentiation during reproduction and development, with a particular focus on the germinal cell line and the paternal contribution to the embryo, and the study of the endocrine disorders and cancer cell progression and regression are the main objectives of our research group.

MAIN LINES OF RESEARCH

1. **Genomics, proteomics and epigenetics of the germinal cell line.**
   Our interests include the study of the human sperm and seminal plasma proteomes,small RNA content, and the sperm cell epigenome to further understand the function and mechanisms operating in the sperm cell, fertilization and early embryo development, and to enable translational research in male infertility.

2. **Genetics of endocrine disorders.**
   We are studying the genetic aspects of hereditary endocrine disorders (multiple endocrine neoplasia, congenital adrenal hyperplasia and monogenic diabetes) for which we are a reference centre. Our interest also contribute to a better understanding of the genotype-phenotype correlations in these syndromes.

TEAM Rafael Oliva

3. **Mechanisms involved in redifferentiation of cancer cells.** Oncogenesis is essentially a cell dedifferentiation process. Molecules that induce cell differentiation, such as retinoic acid, have been used for cancer therapy. However, we have shown that retinoic acid activates the pro-invasive pathway Src-Yap-Il6 in MDA-MB-231 triple negative breast cancer cells. At present we study the mechanisms used by statins to block the pro-invasive action of retinoic acid.

PUBLICATIONS

Originals / I.F.: 11.855

1. Martín-Ibáñez R., Pardo M., Giralt A., Miguez A., Guardia I., Marion-Poll L., Herranz C., Esgleas M., Barriga G., Edel M., Vicario-Abejón C., Alberch J., Girault J., Chan S., Kastner P., Canals J. **Helios expression coordinates the development of a subset of striatopallidal medium spiny neurons.** *DEVELOPMENT.* 144(8):1566-1577. I.F.: 5.843

2. Torabi F, Bogle OA, Estanyol JM, Oliva R, Miller D. **Zona pellucida-binding protein 2 (ZPBP2) and several proteins containing BX7B motifs in human sperm may have hyaluronic acid binding or recognition properties.** *MOLECULAR HUMAN REPRODUCTION.* 23(12):803-816. I.F.: 3.585

3. Bogle OA, Kumar K, Attardo-Parrinello C, Lewis SE, Estanyol JM, Ballescà JL, Oliva R. **Identification of protein changes in human spermatozoa throughout the cryopreservation process.** *ANDROLOGY.* 5(1):10-22. I.F.: 2.427

Review / I.F.: 3.914

1. Jodar M, Soler-Ventura A, Oliva R, Molecular Biology of Reproduction and Development Research Group. **Semen proteomics and male infertility.** *JOURNAL OF PROTEOMICS.* 162(2017):125-134. I.F.: 3.914

GRANTS FOR RESEARCHIN PROGRESS

Oliva R. **Identificación proteómica de biomarcadores en espermatozoides de pacientes infértiles predictores de los resultados de reproducción asistida.**
Sponsored by: FUNDACIÓ SALUD 2000. SERONO13_015.
Duration: 01/06/2013-01/06/2017

Oliva R. **Proteómica diferencial de espermatozoides e identificación de biomarcadores diagnósticos y pronósticos en reproducción asistida.**
Sponsoredby: Instituto de Salud Carlos III (ISCIII). PI13/00699.
Duration: 01/01/2014-30/06/2018

Oliva R. **Análisis proteómico y transcriptómico del semen e identificación de biomarcadores capaces de evaluar la contribución paterna a la fertilización y la embriogénesis.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00346.
Duration: 01/01/2017-31/12/2019

Jovita A. Mezquita C. **Edel MJ. Mejora de la calidad y la caracterización de la producción de células IPS por substitución de oncogenes por genes del ciclo celular y el análisis de la estabilitad genómica.**
Sponsored b: Ministerio de Economía y Competitividad (MINECO): BFU2014-54467-P.
Duration: 01/01/2015-31/12/2017

DOCTORAL THESES

Bassas L, Oliva R. **Caracterización biológica y molecular de síndromes teratozoospérmicos causantes de la infertilidad masculina.**
PhD student: Olga López Rodrigo

5.4 Genetics

LOCATION
HCB building

KEYWORDS
1. **Intellectual disability**
2. **Next generation sequencing**
3. **Cryptic chromosomal imbalances**
4. **FMR1 premutation associated pathologies**
5. **Porphyria**
6. **Prostate cancer**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	91.44	13	7	3
2016	78.25	21	10	3
2017	53.59	14	6	7

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STRATEGIC OBJECTIVES

To clinically, cytogenetic and molecular characterize rare genetic diseases. The main research lines are: i) study of molecular basis of intellectual disability using high throughput technologies; ii) identification of a biological marker for FXTAS; iii) genotype–phenotype correlation of porphyrias; and iv) discovery of new biomarkers that might help the diagnosis and prognosis of prostate cancer.

MAIN LINES OF RESEARCH

1. Identification of genetic bases of ID. 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 and better characterization of FMR1 premutation associated pathologies. Identification of a susceptibility risk factor for FXTAS.

3. Detection of cryptic chromosomal imbalances and identification of new phenotypes based on cytogenetic – molecular techniques in a prenatal and postnatal diagnostic setting.

4. Study of the genotype-phenotype correlation and expression mechanisms of porphyria.
   - Advance in the study of the alterations in iron regulation and metabolism in skin and erythropoietic porphyria.

TEAM Montserrat Milà

- 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.

5. Prostate cancer:
- To study the value of miRNAs in urine for the detection and prognosis of prostate cancer.
- To isolate exosomes as a source of new biomarkers of prostate cancer.

PUBLICATIONS

Originals / I.F.: 53.587

1. Tell-Marti G., Puig-Butille J., Gimenez-Xavier P., Segu-Roig A., Potrony M., Badenas C., Alvarez V., Millán J., Trujillo-Tiebas M., Ramos-Arroyo M., Milà M., Puig S. **The p. R151C Polymorphism in MC1R Gene Modifies the Age of Onset in Spanish Huntington's Disease Patients.** *MOLECULAR NEUROBIOLOGY.* 54(5):3906-3910. I.F.: 6.190

2. Alvarez-Mora MI; Rodriguez-Revenga L; Madrigal I; Guitart-Mampel M; Garrabou G; Mila M. **Impaired Mitochondrial Function and Dynamics in the Pathogenesis of FXTAS.** *MOLECULAR NEUROBIOLOGY.* 54(9):6896-6902. I.F.: 6.190

3. Colomo L, Vazquez I, Papaleo N, Espinet B, Ferrer A, Franco C, Comerma L, Hernandez S, Calvo X, Salar A, Climent F, Mate JL, Forcada P, Mozos A, Nonell L, Martinez A, Carrio A, Costa D, Dlouhy I, Salaverria I, Martin-Subero JI, Lopez-Guillermo A, Valera A, Campo E, Grup per l'Estudi dels Limfomes de Catalunya i Balears (GELCAB). **LMO2-negative Expression Predicts the Presence of MYC Translocations in Aggressive B-Cell Lymphomas.** *AMERICAN JOURNAL OF SURGICAL PATHOLOGY.* 41(7):877-886.I.F.:5.363

4. Abekhoukh S, Sahin HB, Grossi M, Zongaro S, Maurin T, Madrigal I, Kazue-Sugioka D, Raas-Rothschild A, Doulazmi M, Carrera P, Stachon A, Scherer S, Drula Do Nascimento MR, Trembleau A, Arroyo I, Szatmari P, Smith IM, Milà M, Smith AC, Giangrande A, Caillé I, Bardoni B. **New insights into the regulatory function of CYFIP1 in the context of WAVE- and FMRP-containing complexes.** *DMM DISEASE MODELS AND MECHANISMS.* 10(4):463-474. I.F.: 4.691

5. Lucena C., Rovira M., Gabarrús A., Filella X., Martínez C., Domingo R., Torres A., Agustí C. **The clinical value of biomarkers in respiratory complications in hematopoietic SCT.** *BONE MARROW TRANSPLANTATION.* 52(3):415-422. I.F.: 3.874

6. Foj L., Ferrer F., Serra M., Arévalo A., Gavagnach M., Giménez N., Filella X. **Exosomal and Non-Exosomal Urinary miRNAs in Prostate Cancer Detection and Prognosis.** PROSTATE. 77(6):573-583. I.F.: 3.820

7. Peris P, Filella X, Monegal A, Guañabens N, Foj L, Bonet M, Boquet D, Casado E, Cerdá D, Erra A, Gómez-Vaquero C, Martínez S, Montalá N, Pittarch C, Kanterewicz E, Sala M, Suris X, Carrasco JL, LabOscat Study Group. **Comparison of total, free and bioavailable 25-OH vitamin D determinations to evaluate its biological activity in healthy adults: the LabOscat study.** *OSTEOPOROSIS INTERNATIONAL.* 28(8):2457-2464. I.F.: 3.591

8. Parra-Robert, Marina; Orois, Aida; Maria Auge, Josep; Halperin, Irene; Filella, Xavier; Molina, Rafael. **Utility of proGRP as a tumor marker in the medullary thyroid carcinoma.** *CLINICAL CHEMISTRY AND LABORATORY MEDICINE.* 55(3):441-446. I.F.: 3.432

9. López-Mourelo O, Mur E, Madrigal I, Alvarez-Mora MI, Gómez-Ansón B, Pagonabarraga J, Rodriguez-Revenga L, Milà M. **Social anxiety and autism spectrum traits among adult FMR1 premutation carriers.** *CLINICAL GENETICS.* 91(1):111-114. I.F.: 3.326

10. Peris P., Filella X., Monegal A., Guañabens N., Foj L., Bonet M., Boquet D., Casado E., Cerdá D., Erra A., Gómez-Vaquero C., Martínez S., Montalá N., Pittarch C., Kanterewicz E., Sala M., Suris X., Carrasco J. **Concordance between direct and indirect measurements of free 25-OH vitamin D.** *CLINICA CHIMICA ACTA.* 475:169-171. I.F.: 2.873

11. Borrell A; Grande M; Meler E; Sabria J; Mazarico E; Munoz A; Rodriguez-Revenga L; Badenas C; Figueras F. **Genomic Microarray in Fetuses with Early Growth Restriction: A Multicenter Study.** *FETAL DIAGNOSIS AND THERAPY.* 42(3):174-180. I.F.: 2.699

12. Gomez-Gomez A., Marcos J., Aguilera P., To-Figueras J., Pozo O. **Comprehensive analysis of the tryptophan metabolome in urine of patients with acute intermittent porphyria.** *JOURNAL OF CHROMATOGRAPHY B: ANALYTICAL TECHNOLOGIES IN THE BIOMEDICAL AND LIFE SCIENCES.* 1060:347-354. I.F.: 2.603

13. Dlouhy I, Filella X, Rovira J, Magnano L, Rivas-Delgado A, Baumann T, Martínez-Trillos A, Balagué O, Martínez A, González-Farre B, Karube K, Gine E, Delgado J, Campo E, López-Guillermo A. **High serum levels of soluble interleukin-2 receptor (sIL2-R), interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF) are associated with adverse clinical features and predict poor outcome in diffuse large B-cell lymphoma.** *LEUKEMIA RESEARCH.* 59:20-25. I.F.: 2.501

14. Fernandez-Galan, Esther; Lluis Bedini, Josep; Filella, Xavier. **Analytical verification and method comparison of the ADVIA Centaur (R) Intact Parathyroid Hormone assay.** *CLINICAL BIOCHEMISTRY.* 50(18):1222-1227. I.F.: 2.434

Review / I.F.: 3.432

1. Filella X, Foj L. **miRNAs as novel biomarkers in the management of prostate cancer.** *CLINICAL CHEMISTRY AND LABORATORY MEDICINE.* 55(5):715-736. I.F.: 3.432

Letters / I.F.: 14.998

1. Gelpi, Ellen; Botta-Orfila, Teresa; Bodi, Laia; Marti, Stefanie; Kovacs, Gabor; Grau-Rivera, Oriol; Lozano, Manuel; Sanchez-Valle, Raquel; Munoz, Esteban; Valldeoriola, Francesc; Pagonabarraga, Javier; Tartaglia, Gian-Gaetano; Mila, Montserrat. **Neuronal intranuclear (hyaline) inclusion disease and fragile X-associated tremor/ataxia syndrome: a morphological and molecular dilemma.** *BRAIN; A JOURNAL OF NEUROLOGY.* 140(8):e51. I.F.: 10.292

2. Combalia A., To-Figueras J., Laguno M., Martínez-Rebollar M., Aguilera P. **Direct-acting antivirals for hepatitis C virus induce a rapid clinical and biochemical remission of porphyria cutanea tarda.** *BRITISH JOURNAL OF DERMATOLOGY.* 177(5):e183-e184. I.F.: 4.706

Case Reports / I.F.: 2.259

1. Alvarez-Mora MI, Guitart M, Rodriguez-Revenga L, Madrigal I, Gabau E, Milà M. **Paternal transmission of a FMR1 full mutation allele.** *AMERICAN JOURNAL OF MEDICAL GENETICS, PART A.* 173(10):2795-2797. I.F.: 2.259

Consortium Publications / I.F.: 12.124

1. Fang J, Jia J, Makowski M, Xu M, Wang Z, Zhang T, Hoskins JW, Choi J, Han Y, Zhang M, Thomas J, Kovacs M, Collins I, Dzyadyk M, Thompson A, O'Neill M, Das S, Lan Q, Koster R, , Stolzenberg-Solomon RS, Kraft P, Wolpin BM, Jansen PWTC, Olson S, McGlynn KA, Kanetsky PA, Chatterjee N, Barrett JH, Dunning AM, Taylor JC, Newton-Bishop JA, Bishop DT, Andresson T, Petersen GM, Amos CI, Iles MM, Nathanson KL, Landi MT, Vermeulen M, Brown KM, Amundadottir LT PanScan Consortium, TRICL Consortium, GenoMEL Consortium. **Functional characterization of a multi-cancer risk locus on chr5p15.33 reveals regulation of TERT by ZNF148.** *NATURE COMMUNICATIONS.* 8:15034. I.F.: 12.124

GRANTS FOR RESEARCH IN PROGRESS

Madrigal I. **Identificación de genes modificadores de penetrancia en enfermedades raras hereditatias mediante secuenciación masiva.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00483
Duration: 01/01/2016-31/12/2018

Ribes A. **Implementació de la medicina personalitzada basada en la Genòmica en Malalties Minoritàries Neurológiques no Diagnosticades. URDCat (Undiagnosed Rare Diseases Program of Catalonia).**
Sponsored by: Generalitat de Catalunya (PERIS). SLT002/16/00174
Duration: 27/03/2017-31/12/2019

DOCTORAL THESES

Filella X. **Nous biomarcadors per la detecció i pronòstic del càncer de pròstata.**
PhD student: Laura Foj Capell

5.5 Melanoma: imaging, genetics and immunology

LOCATION
CEK building floor 2

KEYWORDS
1. **Melanoma**
2. **Genetics**
3. **Dermoscopy**
4. **Confocal microscopy**
5. **Susceptibility**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	117.27	22	21	1
2016	60.68	14	11	1
2017	264.52	37	27	7

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STRATEGIC OBJECTIVES

1. Development of non-invasive imaging, biophotonics and physic techniques for the diagnosis of melanoma and non-melanoma skin cancer.
2. Study of the genetic bases implicated in susceptibility to melanoma, photocarcinogenesis and melanoma prognosis.
3. Development of treatment strategies in melanoma and skin cancer: specific molecular target / immunological therapies and photo-protection.

MAIN LINES OF RESEARCH

1. Dermoscopy, digital dermoscopy, Confocal microscopy & new photonic and physic technologies. Description of new algorithms, study of the evolution of lesions,

TEAM Susana Puig

new classifications and the use of telemedicine.
2. Giant congenital nevi, global research approach including clinical, genetics and psychological aspects.
3. Genetic epidemiology in melanoma and non melanoma skin cancer.
4. Study of the mechanisms involved in carcinogenesis and photocarcinogenesis in melanoma and non melanoma skin cancer.
5. Development of new treatment strategies for melanoma and other skin tumours.
6. Evaluation of immune response in melanoma.
7. Identification of genetic prognostic profiles in melanoma .
8. Analysis of the influence of the microbiota in skin cancer.
9. Identification of biomarkers for melanoma : study of circulating free DNA (cfDNA) or isolation of circulating melanoma cells (CMC) and single cell sequencing.

PUBLICATIONS

Originals / I.F.: 264.524

1. Huang AC, Postow MA, Orlowski RJ, Mick R, Bengsch B, Manne S, Xu W, Harmon S, Giles JR, Wenz B, Adamow M, Kuk D, Panageas KS, Carrera C, Wong P, Quagliarello F, Wubbenhorst B, D'Andrea K, Pauken KE, Herati RS, Staupe RP, Schenkel JM, McGettigan S, Kothari S, George SM, Vonderheide RH, Amaravadi RK, Karakousis GC, Schuchter LM, Xu X, Nathanson KL, Wolchok JD, Gangadhar TC, Wherry EJ. **T-cell invigoration to tumour burden ratio associated with anti-PD-1 response.** *NATURE.* 545(7652):60-65. I.F.: 40.137

2. Olmeda, David; Cerezo-Wallis, Daniela; Riveiro-Falkenbach, Erica; Pennacchi, Paula C.; Contreras-Alcalde, Marta; Ibarz, Nuria; Cifdaloz, Metehan; Catena, Xavier; Calvo, Tonantzin G.; Canon, Estela; Alonso-Curbelo, Direna; Suarez, Javier; Osterloh, Lisa; Grana, Osvaldo; Mulero, Francisca; Megias, Diego; Canamero, Marta; Martinez-Torrecuadrada, Jorge L.; Mondal, Chandrani; Di Martino, Julie; Lora, David; Martinez-Corral, Ines; Bravo-Cordero, J. Javier; Munoz, Javier; Puig, Susana; Ortiz-Romero, Pablo; Rodriguez-Peralto, Jose L.; Ortega, Sagrario; Soengas, Maria S. **Whole-body imaging of lymphovascular niches identifies pre-metastatic roles of midkine.** *NATURE.* 546(7660):676-680. I.F.: 40.137

3. Dreno, Brigitte; Kunstfeld, Rainer; Hauschild, Axel; Fosko, Scott; Zloty, David; Labeille, Bruno; Grob, Jean-Jacques; Puig, Susana; Gilberg, Frank; Bergstrom, Daniel; Page, Damian R.; Rogers, Gary; Schadendorf, Dirk. **Two intermittent vismodegib dosing regimens in patients with multiple basal-cell carcinomas (MIKIE): a randomised, regimen-controlled, double-blind, phase 2 trial.** *LANCET ONCOLOGY.* 18(3):404-412. I.F.: 33.900

4. Ribas A, Dummer R, Puzanov I, VanderWalde A, Andtbacka RHI, Michielin O, Olszanski AJ, Malvehy J, Cebon J, Fernandez E, Kirkwood JM, Gajewski TF, Chen L, Gorski KS, Anderson AA, Diede SJ, Lassman ME, Gansert J, Hodi FS, Long GV. **Oncolytic Virotherapy Promotes Intratumoral T Cell Infiltration and Improves Anti-PD-1 Immunotherapy.** *CELL.* 170(6):1109-1119. I.F.: 30.410

5. Martins da Silva VP, Marghoob A, Pigem R, Carrera C, Aguilera P, Puig-Butillé JA, Puig S, Malvehy J. **Patterns of distribution of giant congenital melanocytic nevi (GCMN): The 6B rule.** *JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY.* 76(4):689-694. I.F.: 7.002

6. Potrony M, Rebollo-Morell A, Giménez-Xavier P, Zimmer L, Puig-Butille JA, Tell-Marti G, Sucker A, Badenas C, Carrera C, Malvehy J, Schadendorf D, Puig S. **IRF4 rs12203592 functional variant and melanoma survival.** *INTERNATIONAL JOURNAL OF CANCER.* 140(8):1845-1849. I.F.: 6.513

7. Puig-Butille JA, Vinyals A, Ferreres JR, Aguilera P, Cabré E, Tell-Martí G, Marcoval J, Mateo F, Palomero L, Badenas C, Piulats JM, Malvehy J, Pujana MA, Puig S, Fabra À. **AURKA Overexpression Is Driven by FOXM1 and MAPK/ERK Activation in Melanoma Cells Harboring BRAF or NRAS Mutations: Impact on Melanoma Prognosis and Therapy.** *JOURNAL OF INVESTIGATIVE DERMATOLOGY.* 137(6):1297-1310. I.F.: 6.287

8. Taylor NJ, Mitra N, Goldstein AM, Tucker MA, Avril MF, Azizi E, Bergman W, Bishop DT, Bressac-de Paillerets B, Bruno W, Calista D, Cannon-Albright LA, Cuellar F, Cust AE, Demenais F, Elder DE, Gerdes AM, Ghiorzo P, Grazziotin TC, Hansson J, Harland M, Hayward NK, Hocevar M, Höiom V, Ingvar C, Landi MT, Landman G, Larre-Borges A, Leachman SA, Mann GJ, Nagore E, Olsson H, Palmer JM, Peri? B, Pjanova D, Pritchard A, Puig S, van der Stoep N, Wadt KAW, Whitaker L, Yang XR, Newton Bishop JA, Gruis NA, Kanetsky PA, GenoMEL Study Group. **Germline variation at CDKN2A and associations with nevus phenotypes among members of melanoma families.** *JOURNAL OF INVESTIGATIVE DERMATOLOGY.* 137(12):2606-2612. I.F.: 6.287

9. Tell-Marti G., Puig-Butille J., Gimenez-Xavier P., Segu-Roig A., Potrony M., Badenas C., Alvarez V., Millán J., Trujillo-Tiebas M., Ramos-Arroyo M., Milà M., Puig S. **The p. R151C Polymorphism in MC1R Gene Modifies the Age of Onset in Spanish Huntington's Disease Patients.** *MOLECULAR NEUROBIOLOGY.* 54(5):3906-3910. I.F.: 6.190

10. Ribero S, Podlipnik S, Osella-Abate S, Sportoletti-Baduel E, Manubens E, Barreiro A, Caliendo V, Chavez-Bourgeois M, Carrera C, Cassoni P, Malvehy J, Fierro MT, Puig S. **Ultrasound-based follow-up does not increase survival in early-stage melanoma patients: A comparative cohort study.** *EUROPEAN JOURNAL OF CANCER.* 85:59-66. I.F.: 6.029

11. Carrera C, Segura S, Aguilera P, Scalvenzi M, Longo C, Barreiro A, Broganelli P, Cavicchini S, Llambrich A, Zaballos P, Thomas L, Malvehy J, Puig S, Zalaudek I. **Dermoscopic Clues for Diagnosing Melanomas That Resemble Seborrheic Keratosis.** *JAMA DERMATOLOGY.* 153(6):544-551. I.F.: 5.817

12. Gaudy-Marqueste C, Wazaefi Y, Bruneu Y, Triller R, Thomas L, Pellacani G, Malvehy J, Avril MF, Monestier S, Richard MA, Fertil B, Grob JJ. **Ugly Duckling Sign as a Major Factor of Efficiency in Melanoma Detection.** *JAMA DERMATOLOGY.* 153(4):279-284. I.F.: 5.817

13. O Yélamos, B Hibler, M Cordova, TJ Hollmann, K Kose, MA Marchetti, PL Myskowski, MP Pulitzer, M Rajadhyaksha, A Rossi, M Jain. **Handheld Reflectance Confocal Microscopy for the Detection of Recurrent Extramammary Paget Disease.** *JAMA DERMATOL.* 153(7):689-693. I.F.: 5.817

14. O Yélamos, M Cordova, N Blank, K Kose, SW Dusza, E Lee, M Rajadhyaksha, KS Nehal, AM Rossi. **Correlation of Handheld Reflectance Confocal Microscopy With Radial Video Mosaicing for Margin Mapping of Lentigo Maligna and Lentigo**

Maligna Melanoma. *JAMA DERMATOL.* 153(12):1278-1284. I.F.: 5.817

15. Rabbie R, Rashid M, Arance AM, Sánchez M, Tell-Marti G, Potrony M, Conill C, van Doorn R, Dentro S, Gruis NA, Corrie P, Iyer V, Robles-Espinoza CD, Puig-Butille JA, Puig S, Adams DJ. **Genomic analysis and clinical management of adolescent cutaneous melanoma.** *PIGMENT CELL AND MELANOMA RESEARCH.* 30(3):307-316. I.F.: 5.170

16. Puig-Butille JA, Gimenez-Xavier P, Visconti A, Nsengimana J, Garcia-García F, Tell-Marti G, Escamez MJ, Newton-Bishop J, Bataille V, Del Río M, Dopazo J, Falchi M, Puig S. **Genomic expression differences between cutaneous cells from red hair color individuals and black hair color individuals based on bioinformatic analysis.** *ONCOTARGET.* 8(7):11589-11599. I.F.: 5.168

17. Dias-Santagata D, Selim MA, Su Y, Peng Y, Vollmer R, Ch?opik A, Tell-Marti G, Paral KM, Shalin SC, Shea CR, Puig S, Fernandez-Figueras MT, Biernat W, Ry; J, Marszalek A, Hoang MP. **KIT Mutations and CD117 Overexpression Are Markers of Better Progression-Free Survival in Vulvar Melanomas.** *BRITISH JOURNAL OF DERMATOLOGY.* 177(5):1376-1384. I.F.: 4.706

18. K Kose, M Gou, O Yélamos, M Cordova, A Rossi, E Flores, K Nehal, O Camps, J Dy, D Brooks, M Rajadhyaksha. **Automated video-mosaicking approach for confocal microscopic imaging in-vivo: an approach to address challenges in imaging living tissue and extend field-of-view.** *SCI REP.* 7(1):10759. I.F.: 4.259

19. Tell-Marti G, Puig-Butille JA, Potrony M, Plana E, Badenas C, Antonell A, Sanchez-Valle R, Molinuevo JL, Lleó A, Alcolea D, Fortea J, Fernández-Santiago R, Clarimón J, Lladó A, Puig S. **A Common Variant in the MC1R Gene (p.V92M) is associated with Alzheimer's Disease Risk.** *J ALZHEIMERS DIS.* 56(3):1065-1074. I.F.: 3.731

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Review / I.F.: 17.625

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Letters / I.F.: 8.234

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Case Reports / I.F.: 8.479

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GRANTS FOR RESEARCH IN PROGRESS

Malvehy J. **Identificación de factores genéticos en individuos con nevus melanocíticos y su influencia en la determinacón de la mutación BRAF (V600E) en plasma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PI15/00956
Duration: 01/01/2016-31/12/2018.

Malvehy J. **El metabolismo de los esfingolípidos como diana terapéutica para mejorar la inmunoterapia del melanoma.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
AC16/00081
Duration: 01/01/2017-31/12/2019.

Puig S. **Utilización de las regiones homozigotas del genoma para la identificación de genes pronósticos en melanoma y el desarrollo de un panel molecular de pronóstico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI12/00840
Duration: 11/01/2013-30/06/2017

Puig S. **Implementation of personalized medicine in cutaneous melanoma based on genomic susceptibility and tumor signatures: Identification of new targets for melanoma treatment.**
Sponsored by: Fundació La Marató de TV3.
20133130
Duration: 07/05/2014-06/05/2017

Puig S. **Vías de diseminación metastásica en distintos subtipos del melanoma malign: nuevos biomarcadores tumorales y dianas terapéuticas.**
Sponsored by: Fundación Científica Asociación Española Contra el Cáncer (AECC).
GCB1515297850EN
Duration: 01/07/2015-30/06/2020

Puig S. **Evaluación de las alteraciones inmunológicas subyacentes en el desarrollo, progresión y respuesta a las terapias inmunológicas en melanoma. Implicaión de la microbiota en la inducción de tolerancia y efectos secundarios de las terapias inmunológicas.**
Sponsored by: Instituto de Salud Carlos III.
PI15/00716
Duration: 01/01/2016-31/12/2018

Puig JA. **Phenotype and molecular characterization of Large to Giant Congenital Melanocytic Nevi.**
Sponsored by: RTVE Telemaratón.
RTVETELEMARATON14_05
Duration: 01/03/2015-15/03/2017

5.6 Hematopoietic progenitor cell transplantation

LOCATION
CEK building

KEYWORDS
1. **Allogeneic transplantation**
2. **Immunotherapy**
3. **Veno-oclussive disease**
4. **Graft versus host disease**
5. **Infectious diseases**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	43.26	10	3	6
2016	41.58	6	4	2
2017	68.07	16	6	8

LOCATION
RTICC_2012

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STRATEGIC OBJECTIVES

We have started research lines in antitumor cell therapy (NK and CARTs), and cell immune modulation. 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.
2. Evaluation of new transplant modalities, specially:
   - Domiciliary autogenic HPT and allogenic HPT.
   - Haploidentical transplantation with unmanipulated bone marrow.
3. Studies addressing the prevention and treatment of the main complications of HPT.
   - Prevention and treatment of graft-versus-host disease with new agents and participation in different multicenter studies.

Basic and translational research lines

1. Study of the post-HPT complications originating from endothelial dysfunction. Our project aims to characterize such dysfunction and the early diagnosis of infections then to seek effective preventive in HPT.
2. Study of new techniques for the early diagnosis of infections in HPT.
3. Development of CARTs using autologous T cells and also from NK cells expanded from umbilical cord blood.

PUBLICATIONS

Originals / I.F.: 68.067

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Garderet, Laurant. **High-dose therapy and autologous stem cell transplantation in patients with POEMS syndrome: a retrospective study of the Plasma Cell Disorder sub-committee of the Chronic Malignancy Working Party of the European Society for Blood & Mar row Transplantation.** *HAEMATOLOGICA.* 102(1):160-167. I.F.: 7.702

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5. Lucena C., Rovira M., Gabarrús A., Filella X., Martínez C., Domingo R., Torres A., Agustí C. **The clinical value of biomarkers in respiratory complications in hematopoietic SCT.** *BONE MARROW TRANSPLANTATION.* 52(3):415-422. I.F.: 3.874

6. Van Gelder M., De Wreede L., Bornhäuser M., Niederwieser D., Karas M., Anderson N., Gramatzki M., Dreger P., Michallet M., Petersen E., ..., Schaap M. **Long-term survival of patients with CLL after allogeneic transplantation: A report from the European Society for Blood and Marrow Transplantation.** *BONE MARROW TRANSPLANTATION.* 52(3):372-380. I.F.: 3.874

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11. Afelik S, Rovira M. **Pancreatic β-cell regeneration: Facultative or dedicated progenitors?** *MOLECULAR AND CELLULAR ENDOCRINOLOGY.* 445(C):85-94. I.F.: 3.754

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13. Villegas, Ana; Nunez, Ramiro; Gaya, Anna; Victoria Cuevas-Ruiz, Maria; Miguel Bosch, Jose; Carral, Anna; Arrizabalaga, Beatriz; Isabel Gomez-Roncero, Maria; Mora, Asuncion; Bravo, Pilar; Lavilla, Esperanza; Monteserin, Carmen; Hernandez, Belen; Martinez-Barranco, Pilar; Jarque, Isidro; Anunciacion Urquia, Maria; Garcia-Donas, Gloria; Brunet, Salut; Ataulfo Gonzalez, Fernando; Urbano, Alvaro. **Presence of acute and chronic renal failure in patients with paroxysmal nocturnal hemoglobinuria: results of a retrospective analysis from the Spanish PNH Registry. ANNALS OF HEMATOLOGY.** 96(10):1727-1733. I.F.: 3.083

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15. Martínez C, Millán O, Rovira M, Fernández-Avilés F, López A, Suárez-Lledó M, Carreras E, Urbano-Ispízua Á, Brunet M. **Pharmacodynamics of T cell function for monitoring pharmacologic immunosuppression after allogeneic hematopoietic stem cell transplantation.** *INTERNATIONAL JOURNAL OF HEMATOLOGY.* 105(4):497-505. I.F.: 1.610

16. Bastida C; Corominas N; Sotoca J; Rovira M. **Anticoagulation in atrial fibrillation: NOAC prescribing in primary health care.** *INTERNATIONAL JOURNAL OF CLINICAL PHARMACY.* 39(2):478-482. I.F.: 1.555

Review / I.F.: 7.1

1. Farge, D.; Burt, R. K.; Oliveira, M-C; Mousseaux, E.; Rovira, M.; Marjanovic, Z.; de Vries-Bouwstra, J.; Del Papa, N.; Saccardi, R.; Shah, S. J.; Lee, D. C.; Denton, C.; Alexander, T.; Kiely, D. G.; Snowden, J. A. **Cardiopulmonary assessment of patients with systemic sclerosis for hematopoietic stem cell transplantation: recommendations from the European Society for Blood and Marrow Transplantation Autoimmune**

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2. Martín-Antonio B., Suñe G., Perez-Amill L., Castella M., Urbano-Ispizua A. **Natural killer cells: Angels and devils for immunotherapy.** *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES*. 18(9): 1868. I.F.: 3.226

Letters / I.F.: 11.075

1. Urbano-Ispizua Á., Muus P., Schrezenmeier H., Almeida A., Wilson A., Ware R.. Different clinical characteristics of paroxysmal nocturnal hemoglobinuria in pediatric and adult patients. HAEMATOLOGICA. 102(3):e76-e79. I.F.: 7.702

2. Azorín S., Cibeira M., Solé M., Fernández de Larrea C., Rosiñol L., Rovira M., Campistol J., Bladé J. **Renal outcomes of autologous stem cell transplantation among patients with light-chain amyloidosis: a single centre Spanish experience.** *AMYLOID : THE INTERNATIONAL JOURNAL OF EXPERIMENTAL AND CLINICAL INVESTIGATION : THE OFFICIAL JOURNAL OF THE INTERNATIONAL SOCIETY OF AMYLOIDOSIS*. 24(sup1):70-71. I.F.: 3.373

GRANTS FOR RESEARCH IN PROGRESS

Urbano A. **Actividad antitumoral de células NK mediada por intercambio de lípidos. Potencial uso terapéutico postrasplante hemopoyético en mieloma múltiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00798
Duration: 01/01/2015-31/12/2017

5.7 Hematological oncology

LOCATION
HCB building

KEYWORDS
1. **Lymphoid neoplasms**
2. **Genomic profile**
3. **Multiple myeloma**
4. **Myeloproliferative neoplasms**
5. **Acute myeloid leukemia**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	319.39	40	30	4
2016	355.42	40	26	10
2017	511.46	57	40	13

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STRATEGIC OBJECTIVES

The main strategic objectives of our team are clinical, applied and basic research in haematological oncology.
The team is structured into three study groups of three major disease categories

MAIN LINES OF RESEARCH

1. Lymphoid neoplasms
- Mechanisms of progression.
- Genomic profile of diffuse large cell lymphoma.
- New prognostic models in T cell lymphomas.
- Mechanisms of progression of chronic lymphoid leukemia (CLL).
- Cellular microenvironment in CLL.
- Cellular proliferation in CLL.
- Project for the Chronic Lymphocytic Leukemia (CLL) Genome.

2. Multiple myeloma and other monoclonal gammopathies
- Extramedullary involvement and plasma cell leukemia.
- Immune reconstitution and bone marrow microenvironment in patients in response
- Mechanisms of progression and control in asymptomatic gammopathies.
- Impact of microRNA and other non-coding RNA.
- Cardiac involvement in AL amyloidosis.
- Phase I, II and III clinical trials.

3. Myeloid neoplasms
- Chronic myeloid leukemia (CML): European Registry of CML.
- Philadelphia-negative myeloproliferative neoplasms: Mechanisms of thrombosis; mutational status and prognosis of myelofibrosis.
- Acute myeloid leukemia (AML): Biological prognostic factors; expression of non-coding RNA; treatment protocols for the CETLAM group; impact of molecular markers in transplantation.
- Myelodysplastic syndromes (MDS): cytogenetic and molecular abnormalities and prognosis.
- Phase I, II and III clinical trials for CML, myelofibrosis, AML, ALL and MDS.

RESEARCH GROUP
MYELOMA AND OTHER MONOCLONAL GAMMAPATHIES

GROUP LEADER
Joan Bladé (HCB)

Multiple myeloma and systemic AL amyloidosis. Minimal residual disease, extramedullary involvement in myeloma, cardiac involvement in amyloidosis, and multicentric clinical trials with novel drugs.

GROUP Francisco Cervantes

RESEARCH GROUP
MYELOID NEOPLASMAS

GROUP LEADER
Francisco Cervantes (HCB)

Natural history and prognosis of chronic myeloid leukemia, myeloproliferative neoplasms, acute myeloid leukemia and myelodysplastic syndromes; prognostic importance of newer molecular markers in these diseases; clinical trials with new drugs.

GROUP Carlos Fernández de Larrea Rodríguez

50/50 PROGRAM
MECHANISMS OF PROGRESSION IN MONOCLONAL GAMMOPATHIES

GROUP LEADER
Carlos Fernández de Larrea Rodríguez (HCB-IDIBAPS)

Mechanisms of progression and control in patients with multiple myeloma. Molecular and cellular features of patients with long-lasting stable monoclonal gammopathy of undetermined significance and smoldering myeloma.
Oligoclonal response and minimal residual disease in myeloma: impact of immune reconstitution and bone marrow microenvironment. Immunotherapy in monoclonal gammopathies.
Clinical trials with novel molecules in myeloma and macroglobulinemia.

RESEARCH GROUP
LYMPHOID NEOPLASMS

GROUP LEADER
Armando López Guillermo (HCB)

Lymphomas, chronic lymphocytic leukemia and the other lymphoproliferative disorders: Study of progression mechanisms of the disease, genome of CLL and lymphoma, minimum residual disease and biological prognostic models.

PUBLICATIONS

Originals / I.F.: 511.461

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Pour L, Niesvizky R, Oriol A, Rosiñol L, Suvorov A, Gaidano G, Pika T, Weisel K, Goranova-Marinova V, Gillenwater HH, Mohamed N, Aggarwal S, Feng S, Dimopoulos MA. **Impact of prior treatment on patients with relapsed multiple myeloma treated with carfilzomib and dexamethasone vs bortezomib and dexamethasone in the phase 3 ENDEAVOR study.** *LEUKEMIA.* 31:115-122. I.F.: 11.702

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17. Vidal-Crespo A, Rodriguez V, Matas-Cespedes A, Lee E, Rivas-Delgado A, Giné E, Navarro A, Beà S, Campo E, López-Guillermo A, Lopez-Guerra M, Roué G, Colomer D, Pérez-Galán P. T**he Bruton tyrosine kinase inhibitor CC-292 shows activity in mantle cell lymphoma and synergizes with lenalidomide and NIK inhibitors depending on nuclear factor-κB mutational status.** *HAEMATOLOGICA.* 102(11):e447-e451. I.F.: 7.702

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Bladé J. **Red Temática de Investigación Cooperativa en Cáncer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
RD12/0036/0046
Duration: 01/01/2013-30/06/2017

Cervantes F. **Red Temática de Investigación Cooperativa en Cáncer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
RD12/0036/0010
Duration: 01/01/2013-30/12/2017

Cibeira MT. **Afección cardíaca en la amiloidosis primaria: estudio de biomarcadores séricos, resonancia magnética Tesla y caracterización genómica de las cadenas ligeras amiloidogénicas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PI12/01290
Duration: 01/01/2013-30/06/2017

Delgado J. **Estudio piloto de la infusión de linfocitos T autólogos modificados genéticamente para expresar anti-CD19 en pacientes con leucemia o linfoma CD19+ resistente o refractario a tratamiento.**
Sponsored by: Instituto de Salud Carlos III (ISCIII)
ICI 14/00122
Duration: 01/01/2015-31/12/2018

Esteve J. **Ultrasecuenciación de genes candidatos en pacientes con leucemia mieloide aguda mediante "next generation sequencing": pronóstico, biomarcadores, análisis de long non-coding RNA.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PI13/00999
Duration: 01/01/2014-31/12/2017

Esteve J. **Caracterización genética de la leucemia mieloblástica aguda de riesgo citogenético intermedio y genotipo NPM1/CEBPA/FLT3-ITD triple negativo; análisis mutacional, expresión de lncRNAs.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PI16/01027
Duration: 01/01/2017-31/12/2019

Esteve J. **Estudio post-autorización prospectivo de terapia adaptada al riesgo en la leucemia mieloide aguda y síndromes mielodisplásicos de alto riesgo: importancia del perfil genómico y de la enfermedad residual mínima en la asignación del tratamiento.**
Sponsored by: Generalitat de Catalunya (PERIS). SLT002/16/00433
Duration: 27/03/2017-31/12/2019

Fernández de Larrea, C. **Mecanismos de control inmunológico involucrados en la progresión tras tratamiento en el mieloma multiple.**
Sponsored by: Instituto de Salud Carlos III (ISCIII)
PI16/00423
Duration: 01/01/2017 a 31/12/2019

Fernández de Larrea, C. **Reposicionamiento de la Doxiciclina en el tratamiento de la amiloidosis AL cardiaca.**
Sponsored by: Instituto de Salud Carlos III (ISCIII)
AC16/00058
Duration: 01/01/2017 a 31/12/2019

López A. Red **Temática de Investigación Cooperativa en Cáncer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
RD12/0036/0023
Duration: 01/01/2013-31/12/2017

López A. **Microenvironment Interactions in the Pathogenesis of Lymphoid Neoplasms and Chronic Inflammatory Disorders. Identification of Biomarkers and Design of New Therapeutic Strategies.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PIE13/00033
Duration: 01/01/2014-31/12/2017

López A./Giné E. **Estudio longitudinal del perfil mutacional del linfoma difuso de células grandes mediante técnicas de biopsia líquida. Significado biológico e impacto clínico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII)
PI16/00420
Duration: 01/01/2017 a 31/12/2019

Rosiñol L. **Afección medular versus extramedular en el mieloma múltiple: estudio del perfil genético y de la expresión de citocinas/quemocinas relacionadas con angiogénesis y microambiente medular.**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
PI12/01093
Duration: 01/01/2013-30/06/2017

DOCTORAL THESES

López Guillermo A. **Impacte de la cèl·lula d'origen i de la mutació de MYD88 en la resposta i supervivencia dels pacients amb linfoma difús de cèl·lues grans B.**
PhD student: Jordina Rovira Solé

5.8 Physiopathology and molecular bases in hematology

LOCATION
CEK building floor 2

KEYWORDS
1. **Lymphoid malignancies**
2. **Targeted therapies**
3. **Clinico-biological studies**
4. **Rare anemias**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	185.97	23	17	2
2016	102.06	15	13	2
2017	148.12	25	17	5

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STRATEGIC OBJECTIVES

- Identification of potential points of intervention and development of new therapeutic strategies and combination approaches in lymphoid malignancies.
- To improve the diagnosis of lymphoid malignancies using histopathological, immunophenotypic and molecular biology technologies.
- To increase the efficacy of diagnosis, treatment and follow up of patients with rare anemias.

TEAM Dolors Colomer

MAIN LINES OF RESEARCH

1. New targeted therapiesagainst recurrent alterations in lymphoid malignancies.
2. Characterization of molecular pathways activated by microenvironment in lymphoid malignancies.
3. New targeted therapies against oncogenes, microenvironment and epigenetic regulators in lymphoid malignancies.
4. Cytological, immunophenotypic and molecular study of malignant hematological diseases. Development of new technologies for the diagnosis and analysis of minimal residual disease (MRD).
5. Promotion of cooperative strategies in the molecular diagnostic setting of leukemias and lymphomas. Design and implementation of internal and external quality control programs.
7. Cutaneous T and B cell lymphomas. Clinical, histopathological and immunophenotypic study. Prognostic factors and epidemiology.
8. Molecular study of the congenital defects of erythrocytes and erythropoiesis, rare anemias, and physiopathological mechanisms intervening in the production and senescence of red blood cells (RBC) as a cause of anemia or erythrocytosis. Analysis of rareanemias with unknown aetiology by New Generation Sequencing (NGS).
9. Genetic and epidemiological study of hemoglobinopathiesandthalassemias. Development of technologies for the newborn screening of sickle-cell disease (SCD).
10. Investigation of (RBC) membrane structure and function.

PUBLICATIONS

Originals / I.F.: 148.123

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Duration: 01/01/2013-30/07/2017

Colomer D. **Estrategias terapéuticas dirigidas contra la heterogeneidad molecular y la resistencia en leucemia linfática crónica y linfoma de células del manto.**
Sponsored by: Ministerio de Economía y Competitividad. SAF2015-67633-R
Duration: 01/01/2016-31/12/2018

Colomer D. **Identificació de noves estratègies terapéutiques en la leucèmia limfàtica crònica (LLC).**
Sponsored by: Universitat de Barcelona. 2015-DI-075
Duration: 01/04/2016-31/03/2019

Pérez-Galán P. **Targeting proliferation and tumor-microenvironment interactions using bifunctional compounds against cannabinoid and chemokine receptors.**
Sponsoredby: Fundació la Marató de TV3. 20132630.
Duration: 27/05/2014-26/05/2017.

Perez-Galán P**. Crosstalk between lymphocytes and their microenvironment in chronic inflammatory diseases and lymphoproliferative disorders as a target for new therapeutic intervention.**
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Duration: 01/01/2015-31/12/2017

Pérez-Galán P. **Microenvironment Interactions in the Pathogenesis of Lymphoid Neoplasms and Chronic Inflammatory Disorders.Identification of Biomarkers and Design of New Therapeutic Strategies.**
Sponsoredby: Instituto de Salud Carlos III (ISCIII). PIE13/00033.
Duration: 01/01/2014-31/12/2017

Roué G. **El eje de señalización MYC-EZH2 como nueva diana terapéutica en los linfomas B de origen centrogerminal.**
Sponsoredby: Instituto de Salud Carlos III. PI15/00102
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DOCTORAL THESES

Perez-Galan P, Campo E. **Targeting the crosstalk between tumor cells and microenvironment: a new therapeutic approach for the treatment of lymphoid neoplasms.**
PhD student: Anna Vidal Crespo

Roué G. **Innovative targeted therapies for chemo-refractory B cell non-Hodgkin lymphomas.**
PhD student: Anna Esteve Arenys

5.9 Hemotherapy - hemostasis

LOCATION
HCB building

KEYWORDS
1. **Platelets**
2. **Coagulation**
3. **Thrombosis**
4. **Transfusion**
5. **Aphaeresis**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	75.80	22	9	9
2016	116.91	25	14	5
2017	103.98	23	14	5

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AGAUR_SGR17
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TECHNICIANS
Patricia Molina (HCB)
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STRATEGIC OBJECTIVES

1. Mechanisms regulating blood cell function and their interactions with the vascular wall.
2. Characterization of bleeding and thrombotic phenotypes and genotypes. Evaluation of pharmacological/transfusional therapies.
3. Analysis of the efficacy and safety of new strategies for sparing blood component transfusions.
4. Laboratory and animal models of hemostasis.

MAIN LINES OF RESEARCH

1. Study of the molecular mechanisms involved in the development of bleeding and thrombotic disorders.
2. Characterization of endothelial dysfunction in association with stem cell transplantation and development of early complications. Search for biomarkers of graft-versus-host disease (GVHD).
3. Diagnosis and treatment of thrombotic microangiopathies.
4. Evaluation of the physiological and pathological implications of circulating and/or platelet associated procoagulant microparticles in atherothrombosis.

TEAM Ginés Escolar

5. New strategies for the treatment of combined humoral immunity in therapeutic apheresis.

6. Evaluation of the participation of serotoninergic and purinergic mechanisms in platelet function. Study of the antithrombotic potential of pharmacological inhibitors.

7. Role of the phenotype/genotype of fibrinolysis and its repercussions upon global or specific functional tests in hemorrhagic and thrombotic pathology.

8. Implications of the GAS6 vitamin K-dependent protein in hemostasis and the vascular wall, in knockout mice.

9. Evaluation of antidotes to reverse the anticoagulant action of the new oral antithrombotic agents.

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Letters / I.F.: 5.275

1. Puigví L, Baumann T, Fernández S, Castro P, Pereira A, Merino A. **Massive erythrophagocytosis by peripheral monocytes and neutrophils in parvovirus-B19 autoimmune hemolytic anemia.** *ANNALS OF HEMATOLOGY.* 96(5):881-882. I.F.: 3.083

2. Cohn, C. S.; Dumont, L. J.; Lozano, M.; Marks, D. C.; Johnson, L.; Ismay, S.; Bondar, N.; T'Sas, F.; Yokoyama, A. P. H.; Kutner, J. M.; Acker, J. P.; Bohonek, M.; Sailliol, A.; Martinaud, C.; Poglod, R.; Antoniewicz-Papis, J.; Lachert, E.; Pun, P. B. L.; Lu, J.; Cid, J.; Guijarro, F.; Puig, L.; Gerber, B.; Alberio, L.; Schanz, U.; Buser, A.; Noorman, F.; Zoodsma, M.; van der Meer, P. F.; de Korte, D.; Wagner, S.; O'Neill, M. **Vox Sanguinis International Forum on platelet cryopreservation: Summary.** *VOX SANGUINIS.* 112(7):684-688. I.F.: 2.192

Editorial / I.F.: 18.742

1. Diaz-Ricart, Maribel. **Indoxyl sulfate, a uremic trigger for platelets.** *BLOOD.* 129(19):2599-2600. I.F.: 13.164

2. Mustieles, Maria-Jesus; Jimenez, Maria; Robles, Veronica; Chamorro, Vanessa; Pereira, Arturo. **Closer than expected: central vein catheters and perplexing laboratory results.** *TRANSFUSION.* 57(3):499-500. I.F.: 3.386

3. Cohn C., Dumont L., Lozano M., Marks D., Johnson L., Ismay S., Bondar N., T'Sas F., Yokoyama A., Kutner J., Acker J., Bohonek M., Sailliol A., Martinaud C., Pog?ód R., Antoniewicz-Papis J., Lachert E., Pun P., Lu J., Cid J., Guijarro F., Puig L., Gerber B., Alberio L., Schanz U., Buser A., Noorman F., Zoodsma M., van der Meer P., de Korte D., Wagner S., O'Neill M. **Vox Sanguinis International Forum on platelet cryopreservation.** *VOX SANGUINIS.* 112(7):e69-e85. I.F.: 2.192

GRANTS FOR RESEARCH IN PROGRESS

Diaz Ricart, M. **Caracterización genética e identificación de nuevos genes diana en el diagnóstico de las anemias congénitas no filiadas.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI14/00772
Duration: 01/01/2015-30/09/2018

Escolar G. **Redes Temáticas de Investigación Cooperativa en Salud). Cardiovascular Research Network (RIC). Research programme on Genetic and environmental determinants of vascular dysfunction. HEMATO-IDIBAPS group (RD12-0042-0016).**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0042/0016.
Duration: 01/01/2013-31/10/2018

Escolar G. **El sistema serotoninergico en el desarrollo de un fenotipo protrombótico plaquetario: terapias antitrombóticas basadas en la modulación farmacológica de la recaptación serotonina y sus receptores.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/00517.
Duration: 01/01/2014-31/08/2018

Escolar G (IP: García Pagán JC).**Targeting endothelial dysfunction in highly prevalent diseases: characterization and validation of prognostic biomarkers and identification of potential therapeutic strategies.**
Sponsored by: MINECO- Instituto de Salud Carlos III (ISCIII). PIE15/00027
Duration: 01/01/2016-31/12/2018

Escolar G. **Microchip-based point of care devices for a global evaluation of hemostasis under flow conditions: application to the screening of bleeding, thrombosis and monitoring of antithrombotic therapies.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). DTS16/00133.
Duration: 01/01/2017-31/12/2018

García de Frutos P/Morales A. **Regulación terapéutica de la transición EMT/MET y la quimioresistencia en la enfermedad hepática crónica.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO). SAF2015-66515-R
Duration: 01/01/2016-31/12/2018

García de Frutos P/Hidalgo A/Ortíz JT. **Role of resident macrophages and fibroblasts on heart remodeling and healing after myocardial infarction: the contribution of the GAS6-TAM system.**
Sponsored by: Fundació La Marató de TV3. 201530 30 31 32
Duration: 01/01/2016-31/12/2018

DOCTORAL THESES

Escolar G, López I. **Apixaban en la prevención de complicaciones trombóticas: Mecanismos adicionales de su acción antihemostática.**
PhD student: Lluís Pujades Mestres

Díaz-Ricart M, Escolar G. **Inflamación, estrés oxidativo y sistema inmune en el desarrollo de disfunción endotelial asociada a enfermedades inflamatorias crónicas.**
PhD student: Susana Martín Rodríguez

5.10 Molecular and translational oncology

LOCATION
CELLEX building 1A

KEYWORDS
1. **Inflammation and neuropeptides**
2. **Tumor microenvironment**
3. **Cell dormancy**
4. **Chemotherapy resistance**
5. **Tumor heterogeneity**
6. **Epigenetic plasticity**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	34.39	6	6	-
2016	69.47	14	1	-
2017	23.62	6	2	1

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STRATEGIC OBJECTIVES

The overall objective of our team is to understand how the microenvironment, in particular the nervous system, interacts with and influences tumour cells metabolism, proliferation or survival and how these mechanisms contribute to breast cancer progression and therapy resistance.
We want to identify new biomarkers and therapeutic targets that could be transferred to the clinical practice.

MAIN LINES OF RESEARCH

1. Stress and microenvironment influences in breast cancer.

- Study the role of neuropeptides and neurotransmitters in the control of breast cancer progression.
- Evaluate the potential of different components of the microenvironment such as fibroblasts or bone marrow mesenchymal stem cells on the generation of breast cancer heterogeneity.
- Analyse the role of several stress factors, such as cathecolamines, glucocorticoids, hormones and neural related system factors in the transition of carcinoma ductal in situ to invasive.

2. Microenvironmental mechanisms of tumour dormancy and metastasis.

- Determine the role of the TAC1 gene in the metastatic process in breast cancer.
- Study the role of the microenvironment on disseminated tumour cells dormancy,

TEAM Pere Gascón

survival and progression to metastasis.
- Metastasis pathogenesis.

3. Tumor resistance mechanisms:

- Characterization of the mechanisms of epigenetic adaptation and cellular plasticity during the adquisition of chemoresistance.
- Study the mechanisms of tumour progression in breast cancer HER2+ induced by the acquisition of resistance to Trastuzumab and Lapatinib. Role of fibroblasts on antiHER therapies resistance .

PUBLICATIONS

Originals / I.F.: 23.624

1. Blackwell K, Gascon P, Jones CM, Nixon A, Krendyukov A, Nakov R, Li Y, Harbeck N. **Pooled analysis of two randomized, double-blind trials comparing proposed biosimilar LA-EP2006 with reference pegfilgrastim in breast cancer.** *ANNALS OF ONCOLOGY.* 28(9):2272-2277. I.F.: 11.855

2. Aapro M, Bokemeyer C, Ludwig H, Gascón P, Boccadoro M, Denhaerynck K, Gorray M, Krendyukov A, MacDonald K, Abraham I. **Chemotherapy-induced (febrile) neutropenia prophylaxis with biosimilar filgrastim in elderly versus non-elderly cancer patients: Patterns, outcomes, and determinants (MONITOR-GCSF study).** J *GERIATR ONCOL.* 8(2):86-95. I.F.: 2.852

3. Bokemeyer C, Gascón P, Aapro M, Ludwig H, Boccadoro M, Denhaerynck K, Gorray M, Krendyukov A, Abraham I, MacDonald K. **Over- and under-prophylaxis for chemotherapy-induced (febrile) neutropenia relative to evidence-based guidelines is associated with differences in outcomes: findings from the MONITOR-GCSF study.** *SUPPORT CARE CANCER.* 25(6):1819-1828. I.F.: 2.698

4. Aya F, Fernandez-Martinez A, Gaba L, Victoria I, Tosca M, Pineda E, Gascon P, Prat A, Arance A. **Sequential treatment with immunotherapy and BRAF inhibitors in BRAF-mutant advanced melanoma.** *CLINICAL AND TRANSLATIONAL ONCOLOGY.* 19(1):119-124. I.F.: 2.353

5. Harbeck N, Gascon P, Jones CM, Nixon A, Krendyukov A, Nakov R, Li Y, Blackwell K. **Proposed biosimilar pegfilgrastim (LA-EP2006) compared with reference pegfilgrastim in Asian patients with breast cancer: an exploratory comparison from two Phase III trials.** *FUTURE ONCOLOGY.* 13(16):1385-1393. I.F.: 2.131

6. Santolaya M, Aldea M, Grau J, Estrada M, Barau M, Buron A, Francesc M, Castell A, Rodriguez C, Gascón P, Rius P, Guayta-Escolies R, PROCOLON research group (all members of this group are listed in Author Note). **Evaluating the appropriateness of a community pharmacy model for a colorectal cancer screening program in Catalonia (Spain).** *JOURNAL OF ONCOLOGY PHARMACY PRACTICE.* 23(1):26-32. I.F.: 1.735

Review / I.F.: 2.246

1. Barni S., Gascòn P., Petrelli F., García-Erce J., Pedrazzoli P., Rosti G., Giordano G., Mafodda A., Múñoz M. **Position paper on management of iron deficiency in adult cancer patients.** *EXPERT REV HEMATOL.* 10(8):685-695. I.F.: 2.246

Editorial / I.F.: 3.144

1. Teles Alves I, Cohen N, Ersan P, Eyre R, Godet I, Holovanchuk D, Jackstadt R, Kyjacova L, Mahal K, Noguera-Castells A, Recalde-Percaz L, Sleeman J. **EACR-MRS conference on Seed and Soil: In Vivo Models of Metastasis.** *CLINICAL AND EXPERIMENTAL METASTASIS.* 34(8):449-456. I.F.: 3.144

Clinical Guidelines / I.F.: 2.353

1. Guillem, V.; Camps, C.; Carrato, A.; Diaz-Rubio, E.; Gascon, P. **European edition of the NCCN clinical practice guidelines: relevance of the translation and adaptation into Spanish.** *CLINICAL AND TRANSLATIONAL ONCOLOGY.* 19(3):288-290. I.F.: 2.353

GRANTS FOR RESEARCH IN PROGRESS

Bragado P. **Role of the neuroendocrine system in the regulation of disseminated tumour cell dormancy.**
Sponsored by: Asociación Española contra el cáncer (AECC). AECC_CAT_14_001
Duration: 30/01/2015-01/03/2017

Gascón P. **Red Temática de Investigación Cooperativa en Cáncer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0036/0055
Duration: 01/01/2013-31/12/2017

Gascón P. **Descubrimiento y desarollo biomarcadores innovadores para medicina personalizada y terapias para el tratamiento eficaz del cáncer de pulmón.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO). RTC-2014-1532-1
Duration: 01/02/2014-31/12/2017

Gascón P. **Role of neuropeptides and neurotransmitters in the regulation of tumorigenesis, disseminated tumour cells biology and metastasis in breast cancer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00661
Duration: 01/01/2016-31/12/2018

5.11 Cell proliferation and signaling

LOCATION
UB School of Medicine

KEYWORDS
1. **Cell cycle**
2. **Signalling**
3. **Oncogenesis**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	18.70	3	3	-
2016	16.18	2	2	-
2017	25.66	4	4	-

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TECHNICIANS
Sara Abelló (UB)

STRATEGIC OBJECTIVES

The aim of the group is to study the mechanisms involved in cell cycle regulation and in the cellular responses to different types of stresses. We also aim to analyse the alterations of these mechanisms in different types of cancers as for instance colorectal cancer and leukemias. The knowledge of these mechanisms will allow improving cancer therapy.

MAIN LINES OF RESEARCH

Involvement of p27 (Kip1) in cancer progression: p27 (Kip1), a classical inhibitor of cyclin dependent kinases, is also a transcriptional regulator. We are analysing the mechanisms by which p27 regulates transcription and which are the transcriptional programs regulated by this protein. p27 is decreased in many different types of human tumours and this reduction is associated with a worse outcome. Thus, the identification of the transcriptional programs regulated by p27 helps to understand how p27 participates in the progression of malignancy.

Protein kinases in cancer: Our research focuses on identifying the molecular mechanism by which the CaMK family regulate cell cycle control and stress response. We are actually focused in dissecting the role of the CaMKK2 in cancer development and metabolic stress.

TEAM Oriol Bachs

Preliminary results have indicated that, CaMKK2 has a role in glucosae uptake and nutrient homeostasis. The identification of Ckk2 substrates through the analysis of phospho-peptides indicates that there is a crosstalk between Ckk2 and TOR pathway.

PUBLICATIONS

Originals / I.F.: 25.655

1. Perearnau A., Orlando S., Islam A., Gallastegui E., Martínez J., Jordan A., Bigas A., Aligué R., Pujol M., Bachs O. **P27Kip1, PCAF and PAX5 cooperate in the transcriptional regulation of specific target genes.** *NUCLEIC ACIDS RESEARCH.* 45(9):5086-5099. I.F.: 10.162

2. Gallastegui E, Biçer A, Orlando S, Besson A, Pujol MJ, Bachs O. **p27 represses the Pitx2-mediated expression of p21 and regulates DNA replication during cell cycle progression.** *ONCOGENE.* 36(3):350-361. I.F.: 7.519

3. Esteban-Jurado C., Giménez-Zaragoza D., Muñoz J., Franch-Expósito S., álvarez-Barona M., Ocaña T., Cuatrecasas M., Carballal S., López-Cerón M., Marti-Solano M., Díaz-Gay M., Wezel T., Castells A., Bujanda L., Balmaña J., Gonzalo V., Llort G., Ruiz-Ponte C., Cubiella J., Balaguer F., Aligué R., Castellví-Bel S. **POLE and POLD1 screening in 155 patients with multiple polyps and early-onset colorectal cancer.** *ONCOTARGET.* 8(16):26732-26743. I.F.: 5.168

4. Biçer A., Orlando S., Islam A., Gallastegui E., Besson A., Aligué R., Bachs O., Pujol M. **ChIP-Seq analysis identifies p27(Kip1)-target genes involved in cell adhesion and cell signalling in mouse embryonic fibroblasts.** *PLOS ONE.* 12(11):e0187891. I.F.: 2.806

GRANTS FOR RESEARCH IN PROGRESS

Bachs O. **Red Temática de Investigación Cooperativa en Cáncer.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). RD12/0036/0054
Duration: 01/01/2013-30/06/2017

5.12 Cell compartments and signaling

LOCATION
CELLEX building 1B
UB School of Medicine

WEB
www.celltrafficbcn.cat

KEYWORDS
1. **Cell biology**
2. **Endocytosis and exocytosis**
3. **Lipids transport and storage**
4. **Signal transduction**
5. **Cell cycle**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	28.10	4	4	-
2016	41.75	7	7	-
2017	29.53	7	5	2

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María Molinos (UB)

STRATEGIC OBJECTIVES

Our objective is to understand how the signals originated in the cell surface are transduced to trigger reactions that lead metabolic changes, proliferation, or survival and how these mechanisms are affected during disease. We are currently studying the endocytic compartment, lipid droplets and the endoplasmic reticulum, and the signalling pathways that regulate the cell cycle and apoptosis.

MAIN LINES OF RESEARCH

Endocytosis and intracellular trafficking of proteins and cholesterol:
Our objective is the study of the mechanisms that regulate the endocytosis and exocytosis of proteins and cholesterol and the signalling pathways associated with these processes. We focus on determining the role of annexin A6 in signalling, membrane trafficking and liver regeneration.

Lipid trafficking and disease:
Our objective is to characterize the intracellular transport and storage of lipids and the implication of these mechanisms in disease progression (lipotoxicity). We are Interested in lipid droplet biogenesis/metabolism and the intracellular trafficking of cholesterol mediated by caveolins,

Signal transduction and cell cycle:
Our objective is to analyse the signal transduction mechanisms that regulate cell cycle progression and their alterations in oncogenesis. Specifically we are studying the function and regulation of the Ras and Rho family of GTPases and the signal transduction pathways regulating replication stress in normal and tumour cells.

RESEARCH GROUP
SIGNAL TRANSDUCTION AND CELL CYCLE

GROUP LEADER
Neus Agell (UB)

Our group is interested in studying signal transduction pathways activated upon proliferative signals or upon replication stress and their alteration in tumorigenesis. Specifically we analyse the regulation of GTPases proteins of the Rho and Ras family signalling from different plasma membrane and endocytic platforms, and implications of this signalling compartmentalization in various cellular processes such as proliferation, cell migration and mobility, and also in oncogenesis. We are also analysing signalling from arrested replication forks that lead to cell cycle arrest and senescence.

GROUP Neus Agell

RESEARCH GROUP
ENDOCYTOSIS AND INTRACELLULAR TRAFFICKING OF PROTEINS AND CHOLESTEROL

GROUP LEADER
Carles Enrich (UB)

Our group is interested on the molecular mechanisms of membrane traffic in mammalian cells. This basic research is important for understanding a number of diseases including cancer, diabetes, and heart disease or liver disorders. We study the regulation of a variety of aspects of protein and cholesterol trafficking and signal transduction in the endocytic compartment; a sorting and processing station for proteins internalized by cells as well as of the secretory pathway. We are focus in the study of Annexin A6. Annexins are an evolutionarily conserved multigene family with roles in vesicle trafficking, phospholipid metabolism, actin dynamics, apoptosis and cell transformation.

GROUP Carles Enrich

RESEARCH GROUP
LIPID TRAFFICKING AND DISEASE

GROUP LEADER
Albert Pol (ICREA-IDIBAPS)

Lipid droplets are organelles that collect, store and supply lipids in all eukaryotic cells. These organelles are also cellular hallmarks of prevalent diseases ranging from obesity to cancer. The cell biology of lipid droplets and its role in pathogenesis are still unclear. Our group is interested in the mechanisms of lipid droplet biogenesis and consumption. Cholesterol accumulation promotes mitochondrial dysfunction and oxidative damage underlying in the pathogenesis of steatohepatitis, neurodegeneration and atherosclerosis. In this context, we are especially interested in how caveolin-1 regulates cholesterol trafficking and storage.

GROUP Albert Pol

PUBLICATIONS

Originals / I.F.: 29.525

1. Torres S, Matías N, Baulies A, Nuñez S, Alarcon-Vila C, Martinez L, Nuño N, Fernandez A, Caballeria J, Levade T, Gonzalez-Franquesa A, Garcia-Rovés P, Balboa E, Zanlungo S, Fabrías G, Casas J, Enrich C, Garcia-Ruiz C, Fernández-Checa JC. **Mitochondrial GSH replenishment as a potential therapeutic approach for Niemann Pick type C disease.** *REDOX BIOLOGY.* 11:60-72. I.F.: 6.337

2. Enrich C., Rentero C., Grewal T. **Annexin A6 in the liver: From the endocytic compartment to cellular physiology.** *BIOCHIMICA ET BIOPHYSICA ACTA - MOLECULAR CELL RESEARCH.* 1864(6):933-946. I.F.: 4.521

3. Fleta-Soriano E, Smutná K, Martínez JP, Lorca Oró C, Sadiq SK, Mirambeau G, Lopez-Iglesias C, Bosch M, Pol A, Brönstrup M, Diez J, Meyerhans A. **The myxobacterial metabolite Soraphen A inhibits HIV-1 by reducing virus production and altering virion composition.** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY.* 61(8):e0073917. I.F.: 4.302

4. Soriano-Castell D, Chavero A, Rentero C, Bosch M, Vidal-Quadras M, Pol A, Enrich C, Tebar F. **ROCK1 is a novel Rac1 effector to regulate tubular endocytic membrane formation during clathrin-independent endocytosis.** *SCIENTIFIC REPORTS.* 7(1):6866. I.F.: 4.259

5. Krautbauer S., Haberl E., Eisinger K., Pohl R., Rein-Fischboeck L., Rentero C., Alvarez-Guaita A., Enrich C., Grewal T., Buechler C., Neumeier M. **Annexin A6 regulates adipocyte lipid storage and adiponectin release.** *MOLECULAR AND CELLULAR ENDOCRINOLOGY.* 438(C):419-430. I.F.: 3.754

6. Cairns R., Alvarez-Guaita A., Martínez-Saludes I., Wason S., Hanh J., Nagarajan S., Hosseini-Beheshti E., Monastyrskaya K., Hoy A., Buechler C., Enrich C., Rentero C., Grewal T. **Role of hepatic Annexin A6 in fatty acid-induced lipid droplet formation.** *EXPERIMENTAL CELL RESEARCH.* 358(2):397-410. I.F.: 3.546

7. Brun S, Abella N, Berciano MT, Tapia O, Jaumot M, Freire R, Lafarga M, Agell N. **SUMO regulates p21Cip1 intracellular distribution and with p21Cip1 facilitates multiprotein complex formation in the nucleolus upon DNA damage.** *PLOS ONE.* 12(6):e0178925. I.F.: 2.806

Review / I.F.: 8.006

1. Torres S., Balboa E., Zanlungo S., Enrich C., Garcia-Ruiz C., Fernandez-Checa J. **Lysosomal and mitochondrial liaisons in Niemann-Pick disease.** *FRONTIERS IN PHYSIOLOGY.* 8(NOV):982. I.F.: 4.134

2. Grewal T, Hoque M, Conway JR, Reverter M, Wahba M, Beevi SS, Timpson P, Enrich C, Rentero C. **Annexin A6 - a multifunctional scaffold in cell motility.** *CELL ADH MIGR.* 11(3):288-304. I.F.: 3.872

GRANTS FOR RESEARCH IN PROGRESS

Agell N. **KRas phosphorylation, its interaction with calmodulin, and the response to replication stress, in colorectal cancer progression and the design of new therapies.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
Duración: 30/12/2016-29/12/2019

Enrich C/Tebar F. **Contribution of endocytic compartment to cell migration: regulation by cholesterol, AnxA6 and Rac1.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
BFU2015-66785-P
Duration: 01/01/2016-31/12/2019

Enrich C. (IP group 7). **Compartment organization and transport.**
Sponsored by: Ministerio de Economía y Competitividad (MINECO).
BFU2016-81912-REDC
Duration: 01/01/2018-31/12/2019.

Enrich C (Grewal T., Murray R., Timpson P).
LDL cholesterol regulates cell migration.
Sponsored by: National Health Medical Research Council of Australia (NHMRC).
Duration: 01/01/2016-31/12/2018.

Pol A. **Mammalian lipid droplets: a central role in the organismal antibacterial response?**
Sponsored by: Human Frontier Science Program (HFSP). RGP0020/2015
Duration: 01/06/2015-31/05/2018

Pol A. **Nuevas funciones de ACSL3, CAV1 y colesterol en el retículo endoplásmico: sensores homeostáticos que determinan la supervivencia o la muerte de las células.**
Sponsored by: Ministerio de Economia y Competitividad. BFU2015-66401-R
Duration: 01/01/2016-31/12/2018

Pol A. **Lipid Droplet Overloading Promotes Pathogenesis and Progression of Type 2 Diabetes: Identifying New Therapeutic Targets and Applying Upgraded Therapies.**
Sponsored by: Fundació Marató de TV3.
201625.10.
Duration: 24/02/2017-23/02/2020.

DOCTORAL THESES

Agell N, Rubio J. **New strategies of inhibition of K-Ras and study of the K-Ras/CaM interaction.**
PhD student: Eduardo Garrido Sagarzazu

Pol A. **ACSL3 role in the metabolism of Lipid Droplets and implications in hepatic regeneration.**
PhD student: Andrea Fernández Vidal

5.13 Translational genomics and targeted therapeutics in solid tumors

LOCATION
CEK building

WEB
www.idibaps.org/recerca/310/genomica-translacional-i-terapies-dirigides-en-tumors-solids

KEYWORDS
1. **Breast cancer**
2. **Intrinsic subtypes**
3. **Biomarkers**
4. **Genomics**
5. **Solid tumors**
6. **Immunotherapy**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	99.21	14	14	-
2016	124.54	16	15	1
2017	311.46	31	27	1

TEAM INVOLVED IN
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AWARDS
Premio al joven talento
Institution: Fundación AstraZeneca
Awardee/s: Aleix Prat

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STRATEGIC OBJECTIVES

Use genomic or molecular data to guide clinical trial design and biomarker development and study molecular mechanisms of drug sensitivity in order to identify optimal treatment regimens for patients with solid tumors.

MAIN LINES OF RESEARCH

Breast cancer
- To evaluate the impact of the identification of the intrinsic molecular subtypes of breast cancer in the clinical setting.
- To study the mechanisms of drug resistance and tumor progression in Luminal A and B breast cancer.
- To identify genomic biomarkers predictive of response to anti-HER2 drugs in HER2-positive breast cancer.

TEAM Aleix Prat

Colorectal cancer
- To evaluate intrinsic and acquired mechanisms of resistance to chemotherapy and targeted agents in metastatic colorectal cancer, in the three genotypes (KRAS/NRAS mutant, BRAF mutant and triple-WT).
- To characterize epithelial and mesenchymal phenotypes in resectable and metastatic pancreatic carcinoma and it's correlation with drug resistance.

Melanoma
- To evaluate the impact of the immune system in the response to immune checkpoint inhibitors and BRAF inhibitors.
- To study the mechanisms of drug resistance and tumor progression.
- To identify genomic biomarkers predictive of response to anti-PD1 and anti-CTLA4 drugs.

Lung cancer
- Validate novel molecular technologies to streamline the screening of targetable biomarkers in non-small cell lung cancer (NSCLC).
- Identification of novel fusion gene variants in NSCLC: phenotypic characterization of targeted population and prospective clinical validation of their predictive value to targeted treatments.
- Characterize the "stroma-tumor cell" crosstalk in NSCLC and the role of tumor fibroblasts in the tumorigenesis of both major NSCLC subtypes: adenocarcinoma (ADC) and squamous cell carcinoma (SQC). This project is being done in collaboration with Dr. Alcaraz at the UB, Hospital Clinic.

Central nervous system tumors
- Functional characterization of neural stem cell factors in the pathogenesis of gliomas.
- Study of the molecular mechanisms of glioblastoma radioresistance
- Characterization of the biology behind the intrinsic molecular subtypes of glioblastoma.

Urologic cancer
- To study the molecular mechanisms of resistance to taxanes and novel hormone-therapies in preclinical models, circulating tumor cells and patients with castration resistant prostate cancer.
- To investigate the role of the androgen receptor variants in epithelial to mesenchymal transition and progression and therapy resistance in castration resistant prostate cancer.
- To investigate mechanisms of resistance to anti-angiogenic therapy and identification of new therapeutic targets in renal cell carcinoma.

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Originals / I.F.: 311.461

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GRANTS FOR RESEARCH IN PROGRESS

De la Iglesia N. **Perfil d'expressió gènica (gep) del glioblastoma, incloent lincrna (large intergènic non-coding rna), en una població homogènia: correlació amb l'immunofenotip, la radiologia, els resultats.**
Sponsored by: Fundació La Marató TV3.
20130331
Duration: 07/05/2014-31/12/2017

Maurel J. **Estudio observacional para evaluar la estrategia de uso de las terapias dirigidas, en cáncer de colon metastásico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI13/01728
Duration: 01/01/2014-30/06/2018

Mellado B. **Caracterización molecular del cáncer de próstata en función de la expresión de TMPRSS2-ERG: implicaciones terapéuticas.**
Sponsored by: Instituto Carlos III (ISCIII).
PI15/00676
Duration: 01/01/2016-31/12/2018

Prat A. **Identificació d'alteracions moleculars accionables durant la progressió metastàsica del càncer de mama luminal.**
Sponsored by: Fundación Sociedad Española de Oncología Médica (SEOM_14)
Duration: 01/04/2015-30/04/2018

Prat A. **Construcción y evaluación de linfocitos T con un receptor quimérico antigénico (CART) anti-HER2 para el tratamiento de tumores.**
Sponsored by: Fundación Eugenio Rodríguez Pascual. FERP15-12
Duration: 22/12/2015-21/12/2018

Prat A. **Identificación y validación de una firma genómica predictiva de beneficio a fármacos anti-PD1 en múltiples tumores sólidos.**
Sponsored by: Fundación Sociedad Española de Oncología Médica (SEOM_16)
Duration: 01/11/2016-31/10/2018

Prat A. **Doble bloque HER2 sin quimioterapia en cáncer de mama precoz HER2+.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00904
Duration: 01/01/2017-31/12/2019

Reguart N. **Validación de un ensayo multiplex personalizado para la detección de oncogenes y firmas inmunes en Cáncer de Pulmón (CP): estudio observacional, prospectivo y multicéntrico.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI16/00890
Duration: 01/01/2017-31/12/2019

DOCTORAL THESIS

Maurel J. **Papel de la vía de IGF y de metaloproteasa-7 en la resistencia adquirida al tratamiento con quimioterapia y con anticuerpos anti-EGFR en cáncer colorrectal metastático.**
PhD student: Mª Rosa Gallego Sánchez

Prat A. **Implicació pronóstica de la infecció per virus del papiloma humà en tumors d'orofaringe i cavitat oral. localment avançats irresecables.**
PhD student: Victor Rodriguez Freixinos

Prat A. **Marcadores predictivos de respuesta a quimioterapia primaria + trastuzumab en cáncer de mama HER2-positivo.**
PhD student: Sonia Pernas Simon

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2017

TRANSVERSAL AREA

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T.1 Primary healthcare transversal research group

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KEYWORDS
1. **Primary healthcare**
2. **Chronic diseases**
3. **Cardiovascular diseases & cardiovascular risk factors**
4. **Health technology assessment**
5. **Autoimmune & rheumatic diseases**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	31.95	12	-	9
2016	56.83	18	7	4
2017	42.58	16	5	6

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STRATEGIC OBJECTIVES

Primary care is the point of patient entry to the healthcare system.
In the research context, the multidisciplinary and transverse nature of the activities of the primary care professional favours a biological, psychological and social approach to the patients and their illnesses, in both the consulting office and in the home.

TEAM Antoni Sisó Almirall

MAIN LINES OF RESEARCH

Main outcomes:

- 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.

The main lines of research include:

- 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

Originals / I.F.: 42.579

1. Brito-Zerón P, Kostov B, Fraile G, Caravia-Durán D, Maure B, Rascón FJ, Zamora M, Casanovas A, Lopez-Dupla M, Ripoll M, Pinilla B, Fonseca E, Akasbi M, de la Red G, Duarte-Millán MA, Fanlo P, Guisado-Vasco P, Pérez-Alvarez R, Chamorro AJ, Morcillo C, Jiménez-Heredia I, Sánchez-Berná I, López-Guillermo A, Ramos-Casals M, SS Study Group GEAS-SEMI. **Characterization and risk estimate of cancer in patients with primary Sjögren syndrome**. *JOURNAL OF HEMATOLOGY AND ONCOLOGY*. 10(1):90. I.F.: 6.350

2. Amor AJ, Pinyol M, Solà E, Catalan M, Cofán M, Herreras Z, Amigó N, Gilabert R, Sala-Vila A, Ros E, Ortega E. **Relationship between noninvasive scores of nonalcoholic fatty liver disease and nuclear magnetic resonance lipoprotein abnormalities: A focus on atherogenic dyslipidemia.** *J CLIN LIPIDOL*. 11(2):551-561. I.F.: 5.812

3. Bosch X, Montori E, Guerra-García M, Costa-Rodríguez J, Quintanilla MH, Tolosa-Chapasian PE, Moreno P, Guasch N, López-Soto A. **A comprehensive evaluation of the gastrointestinal tract in iron-deficiency anemia with predefined hemoglobin below 9mg/dL: A prospective cohort study.** *DIG LIVER DIS.* 49(4):417-426. I.F.: 3.061

4. Sisó-Almirall A., Kostov B., González M., Salami D., Jiménez A., Soleâ R., Saumell C., Bach L., Martí M., Paz L., Riera R., Alonso V., Acar-Denizli N., Almacellas M., Ramos-Casals M., Àreu J. **Abdominal aortic aneurysm screening program using hand-held ultrasound in primary healthcare.** *PLOS ONE.* 12(4):e0176877. I.F.: 2.806

5. Belhassen-García M, Alonso-Sardón M, Martinez-Perez A, Soler C, Carranza-Rodriguez C, Pérez-Arellano JL, Muro A, Salvador F, Soil-Transmitted Helminths Study Group of the SEMTSI. **Surveillance of strongyloidiasis in Spanish in-patients (1998-2014).** *PLOS ONE.* 12(12): e0189449. I.F.: 2.806

6. Cano I, Dueñas-Espín I, Hernandez C, de Batlle J, Benavent J, Contel JC, Baltaxe E, Escarrabill J, Fernández JM, Garcia-Aymerich J, Mas MÀ, Miralles F, Moharra M, Piera J, Salas T, Santaeugènia S, Soler N, Torres G, Vargiu E, Vela E, Roca J. **Protocol for regional implementation of community-based collaborative management of complex chronic patients.** *NPJ PRIM CARE RESPIR MED.* 27(1):44. I.F.: 2.793

7. Anglada-Martínez H, Martin-Conde M, Rovira-Illamola M, Sotoca-Momblona JM, Sequeira E, Aragunde V, Codina-Jané C. **An Interactive Mobile Phone-Website Platform to Facilitate Real-Time Management of Medication in Chronically ill Patients.** *J MED SYST.* 41(8):122. I.F.:2.456

8. Monforte-Royo C, González-de Paz L, Tomás-Sábado J, Rosenfeld B, Strupp J, Voltz R, Balaguer A. **Development of a short form of the Spanish schedule of attitudes toward hastened death in a palliative care population.** *QUAL LIFE RES.* 26(1):235-239. I.F.: 2.344

9. Martín-Sánchez JC, Bilal U, Clèries R, Lidón-Moyano C, Fu M, González-de Paz L, Franco M, Fernandez E, Martínez-Sánchez JM. **Modelling lung cancer mortality rates from smoking prevalence: Fill in the gap.** *CANCER EPIDEMIOL.* 49:19-23. I.F.: 2.343

10. Bosch X, Montori E, Guerra-García M, Costa-Rodríguez J, Quintanilla MH, Tolosa-Chapasian PE, Moreno P, Guasch N, López-Soto A. **Haemoglobin responses to transfusion in severe iron deficiency anaemia: potential impact of gastrointestinal disorders.** *VOX SANG.* 112(3):257-267. I.F.: 2.192

11. Gonzalez-Ortega, Maria; Gene-Badia, Joan; Kostov, Belchin; Garcia-Valdecasas, Vicente; Perez-Martin, Carmen. **Randomized trial to reduce emergency visits or hospital admissions using telephone coaching to complex patients.** *FAMILY PRACTICE.* 34(2):219-226. I.F.: 1.804

12. Moreno-Chico C, González-de Paz L, Monforte-Royo C, Arrighi E, Navarro-Rubio MD, Gallart Fernández-Puebla A. **Adaptation to European Spanish and psychometric properties of the Patient Activation Measure 13 in patients with chronic diseases.** *FAM PRACT*. 34(5):627-634. I.F.: 1.804

13. Risco E, Zabalegui A, Miguel S, Farré M, Alvira C, Cabrera E. **Aplicación del modelo Balance of Care en la toma de decisiones acerca del mejor cuidado para las personas con demencia.** *GAC SANIT.* 31(6):518-523. I.F.: 1.768

14. Ruiz Morilla, Sans M, Casasa A, Giménez N. **Implementing technology in healthcare: insights from physicians.** *BMC MED INFORM DECIS MAK.* 17(1):92. I.F.: 1.643

15. Bastida C, Corominas N, Sotoca JM, Rovira M. **Anticoagulation in atrial fibrillation: NOAC prescribing in primary health care.** *INT J CLIN PHARM.* 39(2):478-482. I.F.: 1.555

16. Santesmases-Masana R, González-de Paz L, Real J, Borràs-Santos A, Sisó-Almirall A, Navarro-Rubio MD. **Alfabetización en salud en pacientes con insuficiencia cardiaca atendidos en atención primaria.** *ATEN PRIMARIA.* 49(1):28-34. I.F.:1.042

Reviews / I.F.: 5.190

1. Pérez-De-Lis M, Retamozo S, Flores-Chávez A, Kostov B, Perez-Alvarez R, Brito-Zerón P, Ramos-Casals M. **Autoimmune diseases induced by biological agents. A review of 12,731 cases (BIOGEAS Registry).** *EXPERT OPINION ON DRUG SAFETY.* 16(11):1255-1271. I.F.: 3.439

2. Mas Dalmau G, Sant Arderiu E, Enfedaque Montes MB, Solà I, Pequeño Saco S, Alonso Coello P. **Patients' and physicians' perceptions and attitudes about oral anticoagulation and atrial fibrillation: a qualitative systematic review.** *BMC FAM PRACT.* 18(1):3. I.F.: 1.751

Letters / I.F.: 6.273

1. Laynez-Roldan P, Herrero-Mateu A, Martin-Conde M, Requena-Méndez A. **Reply to Escobedo et al.** *J INFECT DIS.* 216(9):1181-1182. I.F.: 6.273

Editorials / I.F.: 1.042

1. Sequeira E. **Atención sanitaria a refugiados o la historia de una asignatura pendiente.** *ATEN PRIMARIA.* 49(8):448-449. I.F.: 1.042

Consortium Publications / I.F.: 18.383

1. Brito-Zerón P, Acar-Denizli N, Zeher M, Rasmussen A, Seror R, Theander E, Li X, Baldini C, Gottenberg JE, Danda D, Quartuccio L, Priori R, Hernandez-Molina G, Kruize AA, Valim V, Kvarnstrom M, Sene D, Gerli R, Praprotnik S, Isenberg D, Solans R, Rischmueller M, Kwok SK, Nordmark G, Suzuki Y, Giacomelli R, Devauchelle-Pensec V, Bombardieri M, Hofauer B, Bootsma H, Brun JG, Fraile G, Carsons SE, Gheita TA, Morel J, Vollenveider C, Atzeni F, Retamozo S, Horvath IF, Sivils K, Mandl T, Sandhya P, De Vita S, Sanchez-Guerrero J, van der Heijden E, Trevisani VFM, Wahren-Herlenius M, Mariette X, Ramos-Casals M, EULAR-SS Task Force Big Data Consortium. **Influence of geolocation and ethnicity on the phenotypic expression of primary Sjögren's syndrome at diagnosis in 8310 patients: a cross-sectional study from the Big Data Sjögren Project Consortium.** *ANN RHEUM DIS.* 76(6):1042-1050. I.F.: 12.811

2. Amor AJ, Serra-Mir M, Martínez-González MA, Corella D, Salas-Salvadó J, Fitó M, Estruch R, Serra-Majem L, Arós F, Babio N, Ros E, Ortega E; PREDIMED Investigators. **Prediction of Cardiovascular Disease by the Framingham-REGICOR Equation in the High-Risk PREDIMED Cohort: Impact of the Mediterranean Diet Across Different Risk Strata.** *J AM HEART ASSOC.* 6(3). I.F.: 4.425

3. Roca Saumell C, Aguilar Margalejo A, Barro Lugo S, Sànchez Collado D; COCOOPSI Group. **Perception of measures for dealing with Ebola disease in primary care.** *PRIM HEALTH CARE RES DEV.* 18(3):282-290. I.F.: 1.147

GRANTS FOR RESEARCH IN PROGRESS

González L. **Cuidadores informales de pacientes que requieren atención domiciliaria: estudio descriptivo transversal.**
Sponsored by: Consorci d'Atenció Primària de Salut Barcelona Esquerra (CAPSBE)
Duration: 01/06/2016-01/06/2017

Herranz C. **Avaluació d'una Intervenció Comunitària per disminuir la percepció de soledat en les persones majors.**
Sponsored by: Consorci d'Atenció Primària de Salut Barcelona Esquerra (CAPSBE)
Duration: 01/06/2017-01/06/2018

Navarro M. **Intervenció multifactorial per prevenir el desenvolupament de fragilitat en pre-fràgils d'edat avançada.**
Sponsored by: Consorci d'Atenció Primària de Salut Barcelona Esquerra (CAPSBE)
Duration: 01/06/2016-01/06/2017

Sequeira E. **CRIB-MI: cribado en pacientes inmigrantes mediante Herramienta informática adaptada a la historia Clínica en Atención Primaria.**
Sponsored by: Generalitat de Catalunya (PERIS).
Duration: 01/01/2017-31/12/2019

Sisó A. **Validez de un método de monitorización de la Presión Arterial de 1 hora frente a los métodos habituales: estudio de evaluación de tecnología diagnóstica .**
Sponsored by: Instituto de Salud Carlos III (ISCIII).
Duration: 01/01/2017-31/12/2019

DOCTORAL THESES

Sisó A. **Ateroesclerosis Preclínica en pacientes con Diabetes tipo 2 de reciente diagnóstico.**
PhD Student: Marta Catalán Adell

T.2 Research in nursing

LOCATION
HCB building

KEYWORDS
1. **Older people**
2. **Chronic-care / Long-term care**
3. **Dementia**
4. **Best practice**
5. **Advance nursing practice**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	25.91	14	11	-
2016	16.96	9	1	3
2017	20.94	6	4	2

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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

Empowerment:
The main target is to increase the patient empowerment and develop assessment tools for educational interventions to improve their bio-physiological, functional and social wellbeing.

Chronic & aging care:
Dementia care: The main target is to improve health service for people with dementia through careful development of best practice strategies using various data collection methods including extensive literature review, focus groups, clinical assessments and analysis of new interventions in different nursing settings (homecare, institutional long term and hospital.

Innovation:
As an instrument to improve the efficiency and quality of care processes involving cardiac and respiratory diseases, as well as other areas of clinical practice. Implementation of Dedicated Educational Units.

Professional Competencies:
To determine how hospital nurse staffing, skill mix, educational composition, and quality of the nurse work environment impact on different hospital outcomes such as mortality, failure to rescue, quality of care, and patient satisfaction. These findings will allow researchers to refine existing nurse workforce.

Advanced Practice:
To describe and analyse including the development of a new instrument to measure the different dimentions at APNs, the advance practice role and competences in nursing.

PUBLICATIONS

Originals / I.F.: 20.935

1. Sutcliffe C, Giebel C, Bleijlevens M, Lethin C, Stolt M, Saks K, Soto ME, Meyer G, Zabalegui A, Chester H, Challis D, RightTimePlaceCare Consortium. **Caring for a Person With Dementia on the Margins of Long-Term Care: A Perspective on Burden From 8 European Countries.** *JOURNAL OF THE AMERICAN MEDICAL DIRECTORS ASSOCIATION.* 18(11):967-973. I.F.: 5.775

2. Jimenez, Esther; Sole, Brisa; Arias, Barbara; Mitjans, Marina; Varo, Cristina; Reinares, Maria; del Mar Bonnin, Caterina; Ruiz, Victoria; Alejandra Saiz, Pilar; Paz Garcia-Portilla, M.; Buron, Patricia; Bobes, Julio; Amann, Benedikt L.; Martinez-Aran, Anabel; Torrent, Carla; Vieta, Eduard; Benabarre, Antoni. **Impact of childhood trauma on cognitive profile in bipolar disorder.** *BIPOLAR DISORDERS.* 19(5):363-374. I.F.: 4.531

3. González-Rodríguez A, Bernardo M, Penadés R, Arias B, Ruiz Cortés V, Seeman MV, Catalán R. **Do FSH/LH ratio and gonadal hormone levels predict clinical improvement in postmenopausal schizophrenia women?**

ARCHIVES OF WOMENS MENTAL HEALTH. 20(5):613-620. I.F.: 3.397

4. Sisó-Almirall A., Kostov B., González M., Salami D., Jiménez A., Soleâ R., Saumell C., Bach L., Martí M., Paz L., Riera R., Alonso V., Acar-Denizli N., Almacellas M., Ramos-Casals M., Àreu J. **Abdominal aortic aneurysm screening program using hand-held ultrasound in primary healthcare.** *PLOS ONE.* 12(4):e0176877. I.F.: 2.806

5. Lethin C; Renom-Guiteras A; Zwakhalen S; Soto-Martin M; Saks K; Zabalegui A; Challis D; Nilsson C; Karlsson S. **Psychological well-being over time among informal caregivers caring for persons with dementia living at home.** *AGING AND MENTAL HEALTH.* 21(11):1138-1146. I.F.: 2.658

6. Risco E; Zabalegui A; Miguel S; Farré M; Alvira C; Cabrera E. **Application of the Balance of Care model in decision-making regarding the best care for patients with dementia.** *GACETA SANITARIA.* 31(6):518-523. I.F.: 1.768

GRANTS FOR RESEARCH IN PROGRESS

Zabalegui A. **Avaluació d'una intervenció innovadora informativa, formativa i de suport social (INFOSA-DEM) als cuidadors informals de persones amb demència al domicili.**
Sponsored by: Fundació La Marató de TV3.
20144410
Duration: 12/05/2015-11/05/2018

DOCTORAL THESES

Zabalegui A. **Empoderamiento del paciente con osteoartritis.**
PhD student: Sara Cano Plans

Zabalegui A, Cabrera E. **Calidad de vida y calidad de los cuidados de las personas con demencia y sus cuidadores informales.**
PhD Student: Susana Miguel González

Zabalegui A, Cabrera E. **Conocer las reacciones de los cuidadores informales de pacientes con demencia en un contexto español y europeo.**
PhD Student: Mª Carmen Alvira Balada

T.3 Clinical pharmacology

LOCATION
Rosselló 138 (rooms 12, 20, 21, 25)

KEYWORDS
1. **Clinical trials, design and methodology**
2. **Ethics in clinical research**
3. **Drug regulation**
4. **Pharmacoepidemiology**

Original publications from 2015 to 2017

YEAR	I.F.	TOTAL	Q1	Q2
2015	19.80	6	3	2
2016	35.37	5	4	1
2017	21.75	6	5	1

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Gonzalo Calvo (HCB)

STRATEGIC OBJECTIVES

1. We provide support of all technical and administrative aspects related to randomized clinical trials carried out in the Institution.
2. We provide support for the conduction of academic-driven clinical trials.
3. We also offer support activities in pharmacovigilance and pharmacoepidemiology.
4. Collaboration with the Pharmacology Unit of the UB in pharmacogenetic studies.

MAIN LINES OF RESEARCH

- **Ethics in clinical research:** Ethics methodological aspects of clinical research currently are of increasing importance; based on the main ethical principals; respect for persons, beneficence, non-maleficence and justice.
- **Clinical trials, design and methodology:** Our aim is to give support to the investigators of our institution in designing and performing academic clinical trials.
- **Statistical support of clinical research:** Statistics and data management are basic aspects of clinical research. We provide these tools to the investigators of our institution.
- **Pharmacovigilance and pharmacoepidemiology:** We also provide support to observational studies with the aim to improve the safety of drug use in our institution.
- **Pharmacogenetics and pharmacogenomics:** These are important tools to improve the efficient use of drugs in the context of the personalized medicine.

TEAM Xavier Carné

PUBLICATIONS

Originals / I.F.: 21.754

1. Inciarte, A.; Leal, L.; Gonzalez, E.; Leon, A.; Lucero, C.; Mallolas, J.; Torres, B.; Laguno, M.; Rojas, J.; Martinez-Rebollar, M.; Gonzalez-Cordon, A.; Cruceta, A.; Arnaiz, J. A.; Gatell, J. M.; Garcia, F.;STRIBPEP Study Grp. T**enofovir disoproxil fumarate/ emtricitabine plus ritonavir-boosted lopinavir or cobicistat-boosted elvitegravir as a single-tablet regimen for HIV post-exposure.** *JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY.* 72(10):2857-2861. I.F.: 5.071

2. Gassó P., Rodríguez N., Boloc D., Blázquez A., Torres T., Gortat A., Plana M., Lafuente A., Mas S., Arnaiz J., Lázaro L.**Association of regulatory TPH2 polymorphisms with higher reduction in depressive symptoms in children and adolescents treated with fluoxetine.** *PROGRESS IN NEURO-PSYCHOPHARMACOLOGY AND BIOLOGICAL PSYCHIATRY.* 77:236-240. I.F.: 4.187

3. Dal-Re R; Carcas A; Carne X; Wendler D. **Public preferences on written informed consent for low-risk pragmatic clinical trials in Spain.** *BRITISH JOURNAL OF CLINICAL PHARMACOLOGY.* 83(9):1921-1931. I.F.: 3.493

4. Dal-Ré R, Carcas AJ, Carné X, Wendler D. **Patients' beliefs regarding informed consent for low-risk pragmatic trials.** *BMC MEDICAL RESEARCH METHODOLOGY.* 17(1):145. I.F.: 3.295

5. Dal-Ré R, Carcas AJ, Carné X. **Who is willing to participate in low-risk pragmatic clinical trials without consent?** *EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY.* 73(12):1557-1563. I.F.: 2.902

6. Guardo AC, Gómez CE, Díaz-Brito V, Pich J, Arnaiz JA, Perdiguero B, García-Arriaza J, González N, Sorzano COS, Jiménez L, Jiménez JL, Muñoz-Fernández MÁ, Gatell JM, Alcamí J, Esteban M, López Bernaldo de Quirós JC, García F, Plana M, RISVAC02boost study. **Safety and vaccine-induced HIV-1 immune responses in healthy volunteers following a late MVA-B boost 4 years after the last immunization.** *PLOS ONE.* 12(10):e0186602. I.F.: 2.806

Review / I.F.: 6.059

1. Zannad, Faiez; Pfeffer, Marc A.; Bhatt, Deepak L.; Bonds, Denise E.; Borer, Jeffrey S.; Calvo-Rojas, Gonzalo; Fiore, Louis; Lund, Lars H.; Madigan, David; Maggioni, Aldo Pietro; Meyers, Catherine M.; Rosenberg, Yves; Simon, Tabassome; Stough, Wendy Gattis; Zalewski, Andrew; Zariffa, Nevine; Temple, Robert. **Streamlining cardiovascular clinical trials to improve efficiency and generalisability.** *HEART.* 103(15):1156-1162. I.F.: 6.059

GRANTS FOR RESEARCH IN PROGRESS

Arnaiz JA. **Evaluating a combination of immune-based therapies to achieve a functional cure of HIV infection (HIVACAR).**
Sponsored by: European Clinical Research Infrastructure Network (ECRIN-ERIC).
H2020-SC1
Duration: 01/01/2017-31/12/2021

Arnaiz JA. **Simvastatin and Rifaximin as new therapy for patients with decompensated cirrhosis (LIVERHOPE).**
Sponsored by: European Clinical Research Infrastructure Network (ECRIN-ERIC).
H2020-SC1
Duration: 01/01/2017-31/12/2021

Calvo G. **Plataforma de unidades de investigación clínica y ensayos clínicos.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PT13/0002/0009
Duration: 01/01/2014-31/12/2018

Calvo G. **Coste-efectividad y coste utilidad de una estrategia de transfusión de hematíes "liberal" vs. otra "restrictiva" en pacientes con infarto agudo de miocardio y anemia. Estudio REALITY.**
Sponsored by: Instituto de Salud Carlos III (ISCIII). PI15/00915
Duration: 01/01/2016-31/12/2018

Calvo G. **ORTHOpedic randomized clinical trial with expanded bone marrow MSC and bioceramics versus autograpt in long bone nonUNIONs (ORTHOUNION).**
Sponsored by: European Clinical Research Infrastructure Network (ECRIN-ERIC).
H2020-SC1
Duration: 01/01/2017-31/12/2021

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