



2017
Scientific Report

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Presentation



The present Annual Report is a mirror which reflects the scientific outputs and outcomes of IR-IIB Sant Pau (Instituto de Investigación Biosanitaria del Hospital Universitario de la Santa Creu I Sant Pau). It provides an opportunity to recognize the efforts and achievements of our researchers organized in 55 excellence groups and 21 associated clinical groups, and is therefore essential to the continued evaluation of our Institution. In addition to acting as the key instrument for evaluating the scientific impact of our research, the Annual Report is also a basic tool for working within our own network and to make available external visibility, as it provides a record of the activities carried out, in particular the projects undertaken, methods employed and results obtained. Our scientific activity is structured into seven research areas, five Vertical Areas (Cardiovascular Diseases; Genetic, Metabolic and Inflammatory Diseases; Hematological and Oncological Diseases; Neurological and Mental Disorders; and Urology and Experimental Surgery) and two Transversal Lines (Epidemiology, Public Health and Healthcare Services; and Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment).

Over the years, we have maintained a progressive growth of our scientific activity, without this year being an exception. Thus, once again this year, I congratulate all members for the magnificent performed work and the achieved results.

In 2017, IIB Sant Pau researchers published 1167 documents of which 866 were original articles with an overall impact factor that reached 5.170 points, generously exceeding the 4,000-point threshold that we have achieved in the last years. There was also a consolidation in the quality of the source journals, with a mean impact factor of 5,0695 and with more than 56% of the manuscripts published in journals in the first quartile of their subject area.

Again this year, our clinical research activity continues to be very active, which keeps us as one of the most active centres in the country in clinical trials. More specifically, 204 new contracts for clinical trials were signed in 2017.

Regarding innovation, 5 new patents were presented and two were conferred in 2017. Thus, until December 2017, the IR- IIB Sant Pau had 13 conferred patents and 12 in process of resolution. Moreover, one start-up (Nanoligent S.L) and 2 Spin-off (Glycardial Diagnostics S.L and Blumentech S.L) were created in 2017.

Much work has yet to be done in order to reach IR-IIB's projected level of internationalization and participation in European research projects. A great part of the proposals for the new Strategic Plan 2019-2023 is presently focused to planning IIB's future strategies for reaching this goal. Thus, the challenges that lie ahead continued to be the increased awareness of opportunities for IR-IIB research groups to succeed within the context of European and international programs and a greater level of participation in European collaborative projects as either partners or coordinators.

The transfer of knowledge acquired thanks to the Research Institute-IIB Sant Pau must lead to improved clinical practice and advances that can be applied to the community. Although we cannot expect immediate results, we anticipate that the opening of the Experimental Research Building of the IR-IIB Sant Pau will bring about critical change in the every-day life of our researchers and will facilitate the continuous growing of the scientific quality of our groups.

Throughout the year, the IR-IIB and its groups also organized several workshops, courses, seminars and conferences. The outreach activities of the IR-IIB allow the network to reach its main goal of promoting quality research in the many areas of interest of our Institute by transferring knowledge to and from its researchers and by communicating its activities and findings to a variety of audiences.

Once again, thanks to the high quality of our researchers and the commitment of all the personnel of the IR – IIB Sant Pau that represents the best guarantee of continued success, we are optimistic about the future of our research activities that ultimately seeks to improve the health of the citizens.

Jaume Kulisevsky
Scientific Director IIB Sant Pau

IIB Sant Pau Entities

Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation



The Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation (HSCSP Healthcare Management Foundation) is a high-technology specialist care hospital performing patient care, teaching and research activities in the clinical, epidemiological and healthcare services fields. It offers accredited specialist and undergraduate health science training courses.

Hospital de la Santa Creu i Sant Pau Research Institute



The Hospital de la Santa Creu i Sant Pau Research Institute (HSCSP RI) promotes, manages and communicates biomedical research conducted in the HSCSP. It raises and manages funds and other resources for health science research in the basic, clinical, epidemiological and healthcare service fields.

Hospital de la Santa Creu i Sant Pau Private Foundation



The Hospital de la Santa Creu i Sant Pau Private Foundation (HSCSP Private Foundation), which owns the HSCSP, is responsible for building, improving and maintaining buildings and premises used for medical care and associated and complementary activities.

Autonomous University of Barcelona (UAB) - Ageing Institute



The UAB, a leading university renowned for quality and innovation in research, coordinates an influential scientific and technological centre, called Esfera UAB, responsible for promoting new business projects. The UAB also projects its productive activity in such a way as to disseminate new knowledge in society.

The Ageing Institute, attached to this university, is a non-profit foundation governed by a board of trustees formed by the UAB, the UAB Foundation and the Agrupació Mútua del Comerç i de la Indústria. Its mission is to improve knowledge of different aspects related to ageing with the aim of enhancing the quality of life of older people and promoting actions that contribute to adapting society and people to the challenges of demographic change.



Catalan Institute of Cardiovascular Sciences (ICCC)

The ICCC performs basic and clinical research into cardiovascular and heart diseases. The fact that it competes successfully at the international level enables it to avail of the infrastructure necessary to transfer basic research to the development of therapies and diagnostic methods, ultimately improving medical care for patients.



Puigvert Foundation

The Puigvert Foundation has the aim of deepening medical knowledge and perfecting medical techniques in the field of research and treatment of urinary and male reproductive system disorders and diseases. More specifically, it performs urology, nephrology and andrology research, focusing particularly on medical care, teaching, training and studies.



Iberoamerican Cochrane Centre

This independent, not-for-profit organization has as its main aim the promotion of medical practice based on the best available scientific evidence. To this end, it ensures that valid, useful, up-to-date and thoroughly reviewed information is made available for clinical and healthcare decision making.



Barcelona-Sardenya Primary Care Centre

Part of the public healthcare system, this teaching and care centre provides primary care services in its catchment area of Barcelona and has a research unit which performs clinical trials and epidemiology studies.



Public Health Agency of Barcelona

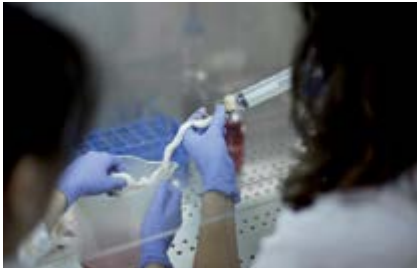
This autonomous body, created by the Barcelona Health Consortium, has as its main mission to analyse and monitor the health of the population of Barcelona with a view to improving health and preventing risk. It is also responsible for epidemiological surveillance and the provision of medical care to substance abusers. It has an excellent track record in the public health and applied research fields.



Blood and Tissue Bank

The Blood and Tissue Bank is a public healthcare body which carries out patient care, teaching and research activities in the blood transfusion and tissue bank fields.

Vertical Areas of Research



Cardiovascular Diseases

The incorporation of new technologies that facilitate molecular profiling and gene regulation has led to innovative research into heart disease. The great diversity of the groups in this area gives research varied perspectives, whether in developing or testing the effectiveness of new biomarkers (as in the investigation of the metabolic and genetic bases of diseases) or improving the range of results and possible applications in short-term therapies.



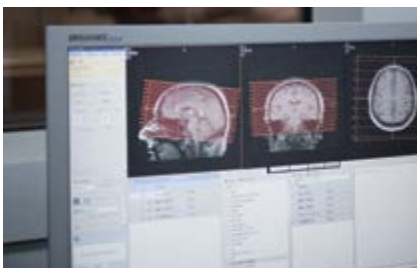
Genetic, Metabolic and Inflammatory Diseases

Identifying the genes and mutations responsible for genetic diseases is an essential component of knowledge and understanding of the physiological bases of metabolic pathways and also in the development of new forms of treatment for common diseases affecting large proportions of the population, such as diabetes and obesity, known but with a hereditary diseases, infectious diseases (AIDS, tuberculosis, etc) and rare diseases (not well know but with a devastating impact on those affected).



Haematological and Oncological Diseases

A broad range of research is conducted in this area, particularly in head-and-neck, breast, ovary, colorectal and haematological cancers, among others. Research in covers a wide range of fields, with disciplines that include nanomedicine, new anticancer agents and predictive molecular markers. Initiatives of specific relevance include the GAIT (Genetic Analysis of Idiopathic Thrombophilia) project, a world pioneer in the identification of genes influencing the risk of thromboembolic disease, and research into antitumour immunotherapy in animals and humans.



Neurological, Mental Disorders and Ageing

This area covers research in a broad range of disciplines. Besides the study of ageing and the most common neurodegenerative disorders such as Alzheimer and Parkinson, neurological research is also focused on stroke, neuroimmunology and neuromuscular diseases. Research into cognitive, affective, psychotic and personality disorders ranges from identification and evaluation of new therapeutic targets to neurogenesis and the effects of deep-brain stimulation. Research in this field has the support of the Drug Research Centre, which assesses the effectiveness of new drugs and therapies in humans.



Urology and Experimental Surgery

IIB Sant Pau promotes experimental surgery in the knowledge that this area has a promising future both as an independent research line and as a complement to general surgery. This interdisciplinary approach provides valuable new insights and ensures techniques and procedures of great clinical relevance. Current areas of interest include the development of minimally invasive techniques and the application of deep-brain stimulation in different pathologies. In the fields of andrology, urology and nephrology research, the Puigvert Foundation is a leading centre in Spain.

Transversal Areas of Research



Epidemiology, Public Health and Healthcare Services

Research in these fields aims to determine the magnitude and distribution and identify the determinants of public health problems in order to evaluate the effectiveness and efficiency of public interventions and prevention practices. This area also aims to reduce patient risk and make healthcare safer by promoting evidence-based medical practice and ensuring the use of conscious, explicit and rational decision making concerning patient care.



Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

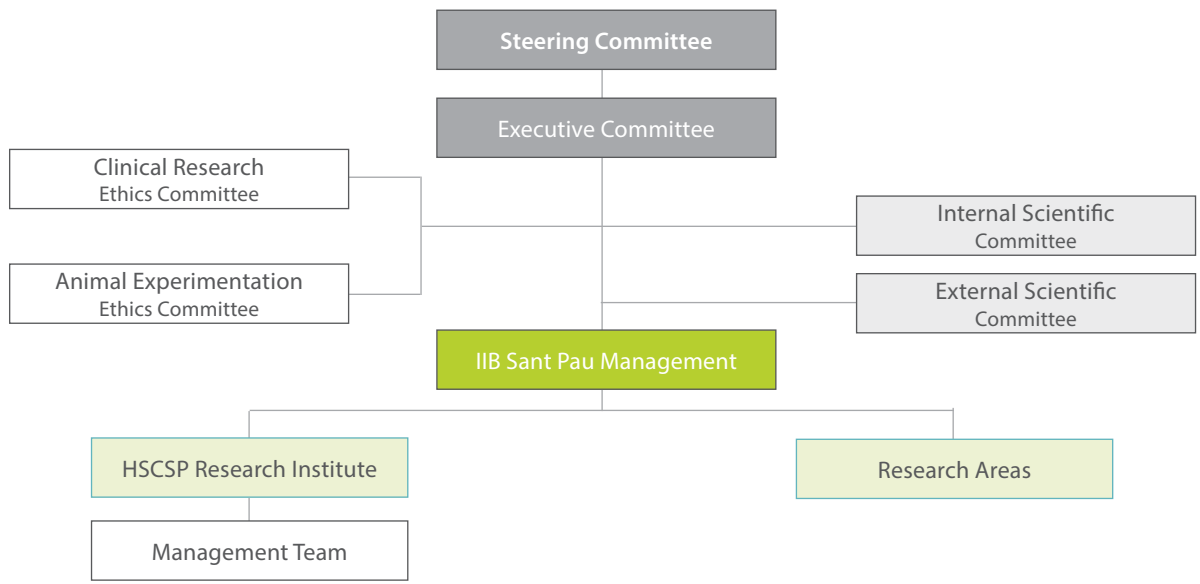
This area focuses on the structure of proteins associated with neurodegenerative diseases and inflammatory processes and on factors linked to the innate immune system. Research is also conducted in the area of osteoporosis, ageing-related macular degeneration and coagulation-cascade factors closely linked to cardiovascular disease and haemophilia. Such studies are vital to the understanding of diseases of the heart, blood and nervous systems and to advances in the fields of cancer and epidemiology.

Associated Groups



This area includes HSCSP Research Institute groups that do not form part of IIB Sant Pau because they have not, as yet, been accredited by the External Scientific Committee.

Organization Chart



Steering Committee

Chair

Dr. Alberto Salazar
Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation

Members

- Dr. Jordi Bachs
Hospital de la Santa Creu i Sant Pau Private Foundation
- Dr. Lluís Tort
Autonomous University of Barcelona
- Dr. Lina Badimon
Catalan Institute of Cardiovascular Sciences
- Dr. Helena Isábal
Puigvert Foundation
- Dr. Joan Garcia
Blood and Tissue Bank
- Dr. Xavier Bonfill
Iberoamerican Cochrane Centre
- Dr. Carme Borrell
Public Health Agency of Barcelona
- Mr. Jaume Sellarès
Barcelona-Sardenya Primary Care Centre
- Dr. Jaume Kulisevsky
Hospital de la Santa Creu i Sant Pau Research Institute

Executive Committee

Chair

Dr. Jaume Kulisevsky
IIB Sant Pau Manager

Representatives of Associated Entities

- Dr. Manel Trias
Autonomous University of Barcelona
- Dr. Ramon Mangués
Hospital de la Santa Creu i Sant Pau Research Institute
- Dr. Xavier Bonfill
Iberoamerican Cochrane Centre
- Dr. Juan Cinca
Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation
- Dr. Alessandro Sionis
Hospital de la Santa Creu i Sant Pau Private Foundation
- Dr. Lina Badimon
Catalan Institute of Cardiovascular Sciences
- Dr. Helena Isabal
Puigvert Foundation
- Dr. Joan Garcia
Blood and Tissue Bank
- Dr. Maica Rodríguez
Public Health Agency of Barcelona
- Dr. Carlos Brotons
Barcelona-Sardenya Primary Care Centre

Internal Scientific Committee

Chair

Dr. Jaume Kulisevsky
IIB Sant Pau Manager

Vice-Chair

Dr. Antonio López Pousa
Chair, Clinical Research Ethics Committee

4 members designated by the IIB Sant Pau Manager

Dra. Lina Badimon
Molecular Pathology and Therapeutic of
Ischaemic and Atherothrombotic Diseases

Dr. Alex Bayes
Molecular physiology of the synapse

Dr. Sílvia Mateu
Puigvert Foundation

Dr. Carlos Brotons
Barcelona-Sardenya Care Research Centre

2 members each representing IIB Sant Pau thematic areas

Cardiovascular Diseases

Dr. Juan Cinca Cuscullola
Clinical and translational cardiology

Dr. José Martínez
Atherosclerosis and vascular biology

Genetic, Metabolic, Inflammatory and Infectious Diseases

Dr. Cándido Juárez
Inflammatory diseases

Dr. Carlos Guarner
Digestive diseases

Haematological and Oncological Diseases

Dr. Miquel Quer
Ear, nose and throat cancers

Dr. Agustí Barnadas
Clinical oncology

Neurological, Mental Disorders and Ageing

Dr. Alberto Lleó
Neurobiology of dementia

Dra. Maria J. Portella
Clinical psychiatry

Urology and Experimental Surgery

Dr. José Ballarín
Nephrology research

Dr. Manel Trias
General and digestive surgery

Epidemiology, Public Health and Healthcare Services

Dr. Carles Ariza
Evaluation of public health policies and programmes

Dr. Gerard Urrútia
Clinical epidemiology and healthcare services

Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and Treatments

Dr. José Manuel Soria
Genomics and bioinformatics for genetically complex disease

Dra. Marta Valle
Pharmacokinetic/pharmacodynamic modelling and simulation

External Scientific Committee

Dr. José López-Barneo
Physiology professor
Institute of Biomedicine of Seville (Spain)

Dr. Ángel María Carracedo
Genomic medicine group researcher
Institute of Legal Medicine
Faculty of Medicine and Dentistry
Santiago de Compostela University (Spain)

Dr. José Palacios
Head of the pathology/anatomy
Department
Ramón y Cajal Hospital (Madrid, Spain)

Dr. Agustín Gómez de la Cámara
Clinical epidemiology group researcher
Doce de Octubre Teaching Hospital
(Madrid, Spain)

Dr. John Louis McGregor
Director of Research-INSERM Unit 689
Cardiovascular Research Centre-
Lariboisière Hospital (Paris, France)

Dr. Jordi Alonso
Health Services Research Unit
Hospital del Mar Municipal
Institute for Medical Research (Barcelona, Spain)

Mr. Guillem López Casasnovas
Professor
Faculty of Economics and Business
Sciences
Pompeu Fabra University (Barcelona, Spain)

Management Team

Scientific & Management Director

Dr. Jaume Kulisevsky

Financial Director

Esther Zamora

Deputy Director

Miriam Ors

Financial Data

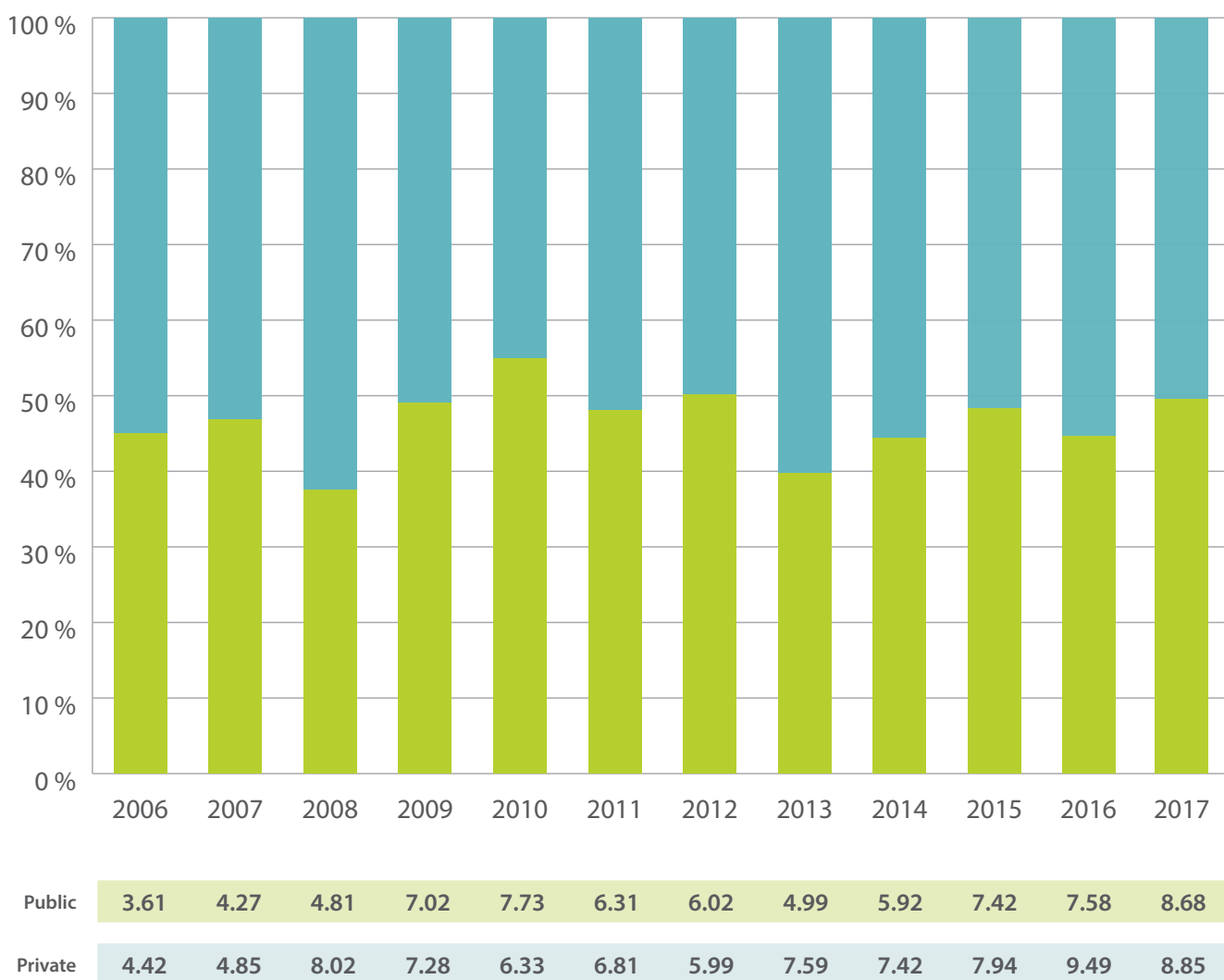


Next we highlight some economic data. The first chart shows the evolution of the public and private funds raised by the IIB San Pau during the period 2006-2017. The Income Statement for 2017 are displayed in the following page.

As a relevant event in 2017, on 31 December, the "Institut Català de Ciències Cardiovasculars" was dissolved by global assignment of its assets and liabilities, with effect from 01/01/2018, to the "Fundació Institut de Recerca del Hospital de la Santa Creu i Sant Pau".

Esther Zamora
Financial Director

Public/Private Income Summary 2006-2017



In millions of euros

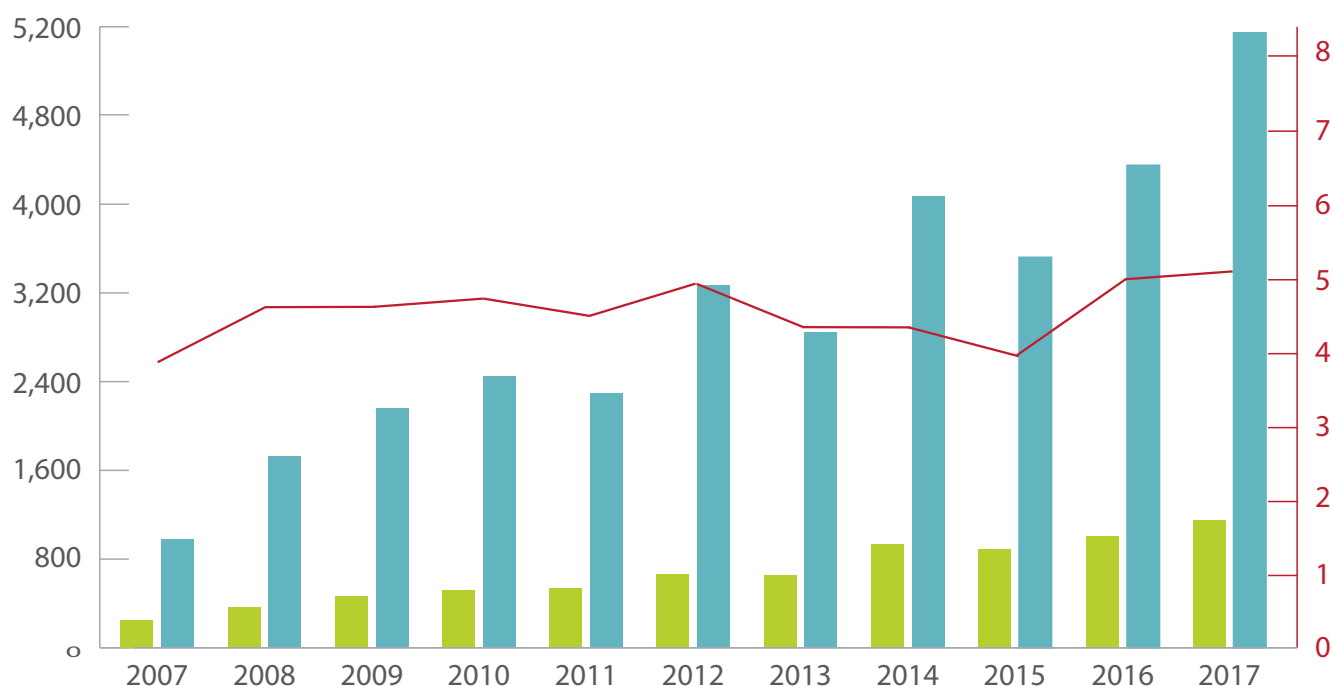
Income Statement year ending 31 December 2017

Income from activities	16.049.341,80
Services	5.228.002,36
Collaborations with partners and sponsors	2.742.355,22
Government grants	7.203.741,68
Other grants, donations and legacies	959.842,50
Repayment of grants, donations, etc	-84.599,96
Stocks and supplies	-1.449.504,87
Material and equipment for activities	-1.449.504,87
Grants awarded and other expenses	-23.000,00
Personnel expenditure	-8.875.073,29
Salaries	-6.843.074,97
Social security	-2.031.998,32
Other operating expenses	-5.610.389,28
External services	-4.960.623,75
Taxes	-65.100,43
Loss, deterioration and variation in provisions for operations	30.792,09
Other operating expenses	-615.457,19
Depreciation of fixed assets	-934.322,61
Grants, donations and bequests transferred to results	663.698,50
Other gains/losses	204.111,75
OPERATIONAL PROFIT/LOSS	24.862,00
Financial income	157.311,80
Financial expenditure	-159.147,08
FINANCIAL PROFIT/LOSS	-2.683,66
OVERALL PROFIT/LOSS	22.178,34

In euros

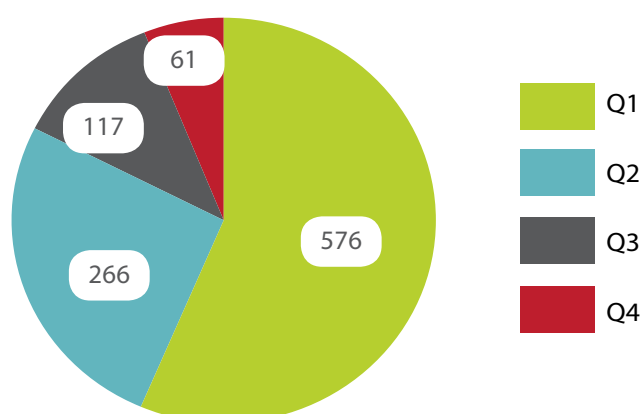
Publications with an Impact Factor and Quartile

Production status



Publications	250	367	461	514	534	664	654	933	804	996	1,167
Total IF	975.36	1,722.76	2,158.53	2,448.88	2,298.44	3,269.47	2,848.27	4,074.22	3,927.43	4,338,839	5,170,871
Mean IF	3.9	4.69	4.68	4.78	4.30	4.92	4.35	4.37	3.98	5	5.07

Indexed publications by quartile



Research Resources

Centre	Active		Granted	
	2016	2017	2016	2017
AGAUR (Agència de Gestió d'Ajuts Universitats i Recerca)	24	24	–	1
Comissió Europea	3	3	–	1
Projectes americans	–	–	–	1
Fundació Infermeria i Societat	1	3	2	1
Fundació Marató TV3	12	14	2	3
Fundación Mutua Madrileña (FMM)	2	1	–	1
Fundació Josep Carreras Internacional	–	1	1	–
ISCIII (Instituto de Salud Carlos III)	99	111	28	29
MINECO (Ministerio de Economía y Competitividad)	7	6	3	–
Ministerio de Sanidad, Servicios Sociales e Igualdad	5	5	2	–
SEPAR (Sociedad Española de Neumología y Cirugía Torácica)	3	2	–	–
AECC (Asociación Española Contra el Cáncer)	5	4	–	–
SOCAP (Societat Catalana de Pneumologia)	1	–	–	–
Sociedad Española de Diabetes	1	–	–	–
Fundació Catalana de Pneumologia	3	1	–	1
Sociedad Española de Cardiología	1	–	–	–
AFM Telethon	1	–	–	–
Societat Catalana de Psiquiatria i Salut Mental	1	–	–	–
GILEAD	–	1	1*	–
Grupo Español de Investigación en Sarcomas	1	1	–	–
Fed Esp de Enfermedades Raras / Fund Isabel Gemio / Fed Esp de Enfermedades Neuromusculares	1	1	–	–
Fundació Privada de l'Hospital de la Santa Creu i Sant Pau	6	7	7	–
Col·legi de Farmacèutics de Barcelona	1	–	–	–
Fundación y Sociedad Española de Arteriosclerosis	1	1	–	–
European Society of Cardiology	1	1	–	–
Fundació Víctor Grífols i Lucas	1	–	–	1
Fundació Ramon Pla Armengol	1	1	–	–
Institució CERCA	1	1	1	–
Fundación BBVA	–	1	1	–
BIOCAT	–	1	1	–
Grupo Español de Oncología Genitourinaria	–	1	1	–
Fundació Privada Daniel Bravo-Andreu	1	1	–	–
Foundation International Guillain-Barré	1	–	–	–
Fundación Española para el Fomento de la Investigación de la Esclerosis Lateral Amiotrófica	–	–	–	1
Acadèmia de Ciències Mèdiques	–	–	–	1
Departament de Salut (Generalitat de Catalunya)	–	–	–	8
	185	193	50	49

* A project has resigned.

** Five projects have resigned.

Research Training

Centre	Active		Granted	
	2016	2017	2016	2017
AGAUR (Agència de Gestió d'Ajuts Universitats i Recerca)	5	6	2	3*
Departament de Salut (Generalitat de Catalunya)	1	1	–	–
MEC (Ministerio de Educación, Cultura y Deporte)	–	–	–	1
MINECO (Ministerio de Economía y Competitividad)	3	3	1	3*
ISCIII (Instituto de Salud Carlos III)	34	30	12	15**
Fundación Casa del Corazón	1	–	–	–
Projectes americans	1	1	–	–
Fundació Privada de l'Hospital de la Santa Creu i Sant Pau	3	10	10	–
SEPAR (Sociedad Española de Neumología y Cirugía Torácica)	–	1	1	–
SOCAP (Societat Catalana de Pneumologia)	–	1	1	1
FUCAP (Fundació Catalana de Pneumologia)	–	1	1	–
FEHH (Fundación Española de Hematología y Hemoterapia)	–	1	1	–
AECC (Asociación Española Contra el Cáncer)	–	1	1	1
Departament de Salut (Generalitat de Catalunya)	–	–	–	5
	48	56	30	29

* A project has resigned.

** Five projects have resigned.

Innovation Activity

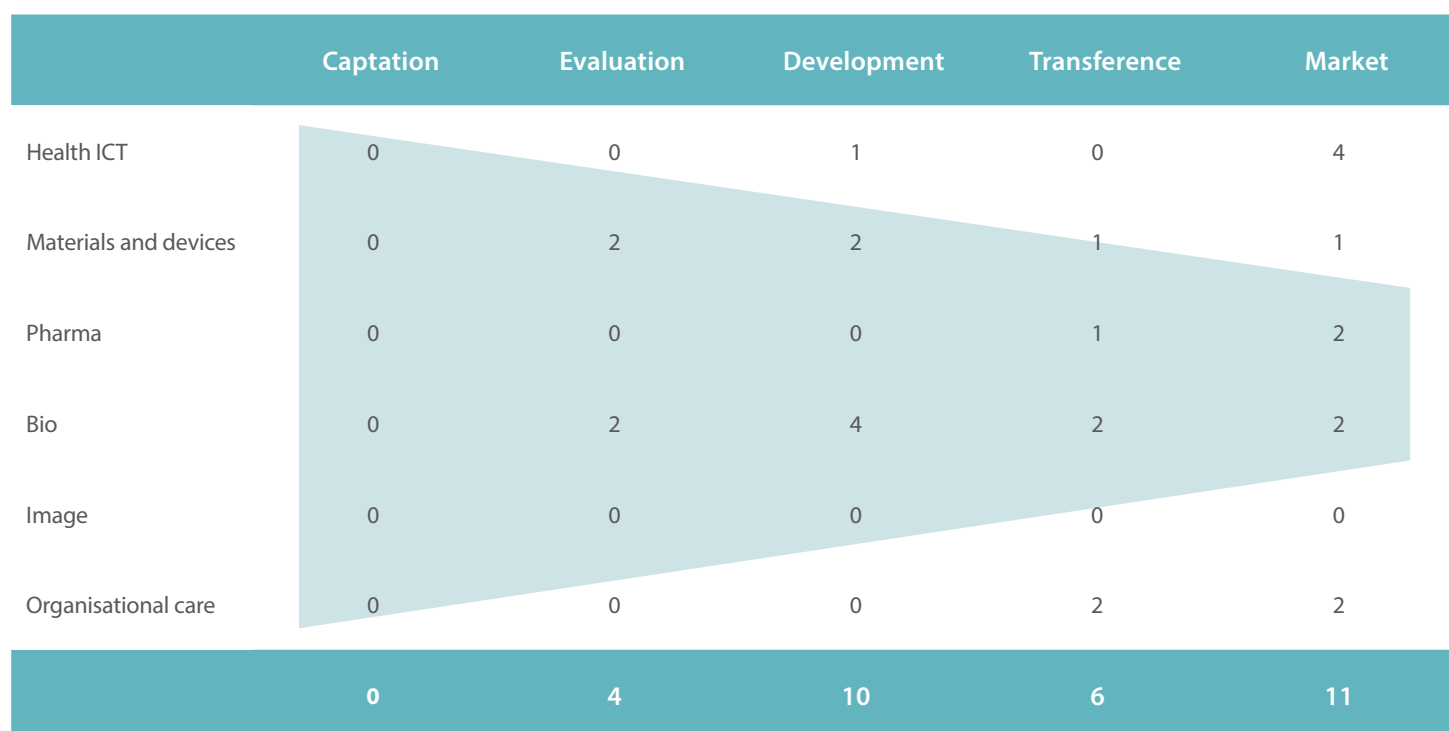
Innovation funnel 2017



The Transfer and Innovation Unit manages the innovation projects developed at the Institute, from the capture and evaluation of the opportunities, to their development, implementation and/or transfer to the market. The chart below shows the innovation projects portfolio according to their phase and typology as of December 31, 2017. The Results of Innovation are detailed in the following pages.

Miriam Ors Riera

Director of the Technology Transfer and Innovation Unit
Deputy Director of Research Institute



Source: Hospital de la Santa Creu i Sant Pau Research Institute

Patents

Title	HSCSP RI author(s)	Territory	Application number	Filing date	Status	Grant number	Grant date
Marcadores para la miocardiopatía dilatada	David de Gonzalo	-	201700749	24/11/2017	In process	-	-
Genetic biomarker profiles for endurance sport suitability	José Manuel Soria	-	EP17382799.9	27/11/2017	In process	-	-
Nanostructured proteins and uses thereof	Ramon Mangues	-	EP17169722.0	05/05/2017	In process	-	-
Therapeutic nanoconjugates and uses thereof	Ramon Mangues	-	EP17382461.6	14/07/2017	In process	-	-
New therapeutic compounds targeting the androgen receptor	Pablo Fuentes	GB	GB1701887.0	05/02/2017	In process	-	-
Systems and methods to assess infarcted myocardial tissue by measuring electrical impedance during the cardiac cycle	Juan Maria Cinca; Gerard Amorós; Esther Jorge	-	PCT/ EP2016/056933	30/03/2016	In process	-	-
Dispositivo para simular una operación endoscópica vía orificio natural	Ramon Rovira	-	PCT/ EP2016/080572	12/12/2016	In process	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon Maestro; Judit Cubedo Ràfols; Teresa Padró Capmany	-	PCT/ EP2017/058768	12/04/2016	In process	-	-
Prevention and/or treatment of ischemia or ischemia / reperfusion injury	Lina Badimon Maestro; Judit Cubero Ràfols; Gemma Vilahur García; Teresa Padró Capmany	-	PCT/ EP2017/056027	14/06/2016	In process	-	-
Procedimiento y dispositivo para el aprendizaje y entrenamiento de operaciones de cirugía laparoscópica e intervenciones similares	Ramon Rovira	Spain	P201331528	16/10/2013	Granted	ES2534140B1	17/04/2015
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues; Ugutz Unzueta; Virtudes Céspedes; Isolda Casanova (CIBER)	Australia	2012206533	19/07/2012	Granted	-	18/12/2017
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues; Ugutz Unzueta; Virtudes Céspedes; Isolda Casanova (CIBER)	Israel	227442	13/01/2012	In process	-	-

Title	HSCSP RI author(s)	Territory	Application number	Filing date	Status	Grant number	Grant date
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues; Ugutz Unzueta; Virtudes Céspedes; Isolda Casanova (CIBER)	Europe	EP12704711.6	13/01/2012	In process	-	-
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues; Ugutz Unzueta; Virtudes Céspedes; Isolda Casanova (CIBER)	USA	US 13/979560	03/04/2014	Granted	US 20140094404 A1	28/02/2017
LRP1 as key receptor for the transfer of sterified cholesterol from very-low-density lipoproteins (VLDL) to ischaemic cardiac muscle	Vicenta Llorente Cortés; Lina Badimon Maestro;	USA	US14129446	29/06/2011	Granted	US 9096671 B2	08/04/2015
LRP1 as key receptor for the transfer of sterified cholesterol from very-low-density lipoproteins (VLDL) to ischaemic cardiac muscle	Vicenta Llorente Cortés; Lina Badimon Maestro;	Europe	12804028.4	29/06/2011	Granted	EP2728005B1	22/08/2018
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Japan	JP2011540141	13/06/2011	Granted	P1133JP00	07/01/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Canada	CA2745972	06/06/2011	Granted	CA2745972	11/04/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Israel	il213408	06/06/2011	In process	-	-
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Turkey	P1133TREP	06/06/2011	Granted	TR 2014 11735 T4	23/02/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Europe	EP20090768395	15/12/2009	Granted	EP2379114B1	09/07/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	USA	US13140347	15/12/2009	Granted	US9023370 B2	20/12/2015
Blood-based assay for dysferlinopathies	Isabel Illa; Eduard Gallardo	Canada	2468431	26/05/2004	Granted	CA2468431C	28/06/2011
Blood-based assay for dysferlinopathies	Isabel Illa; Eduard Gallardo	USA	US10/306662	27/11/2002	Granted	US7172858B2	06/02/2007
Blood-based assay for dysferlinopathies	Isabel Illa; Eduard Gallardo	Japan	JP2003547654A	27/11/2002	Granted	JP4282483B2	24/06/2009

Spin off

Tax number	Business name	HSCSP RI Entrepreneur	Type	Constitution date	Licensed technology	Status
B-66970088	Nanoligent S.L.	Manuel Rodríguez	Start-up	13/03/2017	New therapeutic product in the oncology area, especially in the treatment of metastasis.	Active
B-67079186	Glycardial Diagnostics S.L.	Lina Badimon, Teresa Padró, Judit Cubedo, Gemma Vilahur	Spin-off	15/09/2017	Apo J-Glyc as a novel biomarker for the diagnosis and prognosis of myocardial ischemia	Active
B-66963257	Blumentech S.L.	Jordi Riba	Spin-off	01/03/2017	Pharmacological therapies for psychiatric and neurological patients	Active
B-66663303	Surgitrainer S.L.	Ramon Rovira	Start-up	15/03/2016	Method and device for learning and training operations laparoscopic surgery and similar procedures	Active

Other IP

Type	Title	Author(s)	Register date
Trademark registration	m-HEART	M ^a Antonia Mangues; Mar Gomis	19/05/2017
Notary registration	DUO QUEST Clinical Scale	Antonia Campolongo	08/04/2016
Notary registration	Memory Unit Database	Daniel Alcolea; Juan Fortea	30/09/2015
Notary registration	PARKINSON DISEASE COGNITIVE FUNCTIONAL RATING SCALE (PD-CFRS)	Jaime Kulisevsky; Javier Pagonabarraga	17/07/2015
Notary registration	PARKINSON'S DISEASE - COGNITIVE RATING SCALE (PD-CRS)	Jaime Kulisevsky; Javier Pagonabarraga	17/07/2015

Technology Transfer Agreements

Year	Title Contract	Collaborator /Client	IP	Research group
2017	Acord de llicència patent	Nanoligent, SL	Ramon Mangues Bafalluy	Oncogènesi i antitumorals
2017	Acord de transferència	Blumentech, SL	Jordi Riba Serrano	Neuropsicofarmacologia humana experimental
2017	Acord d'exploració	Nabelia, SL	Oscar Gallego Rubio	Recerca clínica en oncologia
2016	Llicència escala PD-CRS	Sanofi-Aventis	Jaime Kulisevsky Bojarski	Parkinson Disease and Movement Disorders
2016	Transferència DiGestEpiClin	Fundació Institut per l'Excel·lència Clínica i Sanitària	Xavier Bonfill Cosp	Clinical Epidemiology and Healthcare Services
2016	Tranferència Surgitrainer and Hystrainer	Surgitrainer SL	Ramon Rovira Negre	Reproductive Health
2015	Contracte llicència escala clínica	Eli Lilly & Co.	Jaime Kulisevsky Bojarski	Parkinson Disease and Movement Disorders
2015	Llicència escala clínica	Bracket Global LLC	Jaime Kulisevsky Bojarski	Parkinson Disease and Movement Disorders
2015	Cooperation treaty iFightDepression	European Alliance Against Depression e.V.	Maria J. Portella	Clinical Psychiatry
2014	License Agreement PREDI-NU Project	European Alliance Against Depression e.V.	Saiko Allende	Clinical Psychiatry

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Human Resources Unit
Rafael Fernández

General Secretariat
Rosa M. García
Amanda García
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Clinical Trial Documentation Management

Functions:

- > Manage and supervise all documentation associated with active clinical trials in the experimental phase and destruction of documentation for terminated clinical trials located in the external archive.
- > Store the supplies until the end of the studies, when they are destroyed or recycled.
- > Oversee and manage documentation of completed trials for the Centre for Drug Research (CIM)
- > Maintain and update the clinical workstation database and manage clinical studies.
- > Manage restricted access by clinical trial monitors to the clinical workstation.
- > Supervise data processing and management.
- > Coordinate researchers and monitors; draw up agendas for meetings and study monitoring.
- > Provide logistical support to the cold area and the clinical materials store associated with clinical trials in the experimental phase.
- > Ship biological samples to central laboratory services.

Facilities:

Several areas have been designated to implement these functions:

- > Head office and administration area
- > Data processing and management area
- > Clinical trial monitoring meeting rooms
- > Documentation filing area
- > Cold room.
- > Archive.

Research Institute Management

Functions:

- > Management of HSCSP Research Institute and IIB Sant Pau finances: manage accounts and fiscal matters; design, administer and control budget-related issues; manage and monitor financial and material resources.
- > Management of public body funding requirements: fulfil obligations imposed by government and official regional and state entities; ensure compliance with current fiscal, financial, labour and legal regulations and with HSCSP Research Institute–IIB Sant Pau management policies.
- > Administration and management of activities, providing management support for research groups in different areas; project management, human resources, procurement, invoicing, control and monitoring of projects, general administration, management of services (courses, travel and continuing professional development).
- > Design, elaboration, development and maintenance of information systems for management area units, both for HSCSP Research Institute–IIB Sant Pau and research groups.



Coordinator:
Fabiola Fernández

Staff:
Eva José
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Research Institute Projects Unit

Functions:

- > Search of public and private funding, broadcast, assessment and review for the success of the application submission, send applications, register and monitoring until its resolution.
- > Registration of granted projects, economic monitoring of both national and international projects and agreements, costs validation (concept/balance), preparing annual and final reports, manage incidences, interlocutor with official entities.
- > Activity reports: scientific report, Board, Direction and others.
- > Internal and external audits from different financial entities.
- > Researchers: meetings for starting and managing projects.
- > Interaction with different transversal areas to implement the regulations of the calls.



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Staff:
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Quality and Information Systems Unit

Functions:

- > General:
 - Support management with strategic projects (accreditation, CERCA evaluation, biobank legalization, evaluation of research groups, etc).
 - Manage IIB Sant Pau research groups: creation, dissolution and changes in composition.
 - Implement the functional plan for the new research building.
 - Support management of the IIB Sant Pau Internal Scientific Committee, External Scientific Committee, Executive Committee and Delegate Committee.
 - Implement policies for the dissemination of research among the general public and especially among secondary pupils and health science university students.
 - Represent the HSCSP Research Institute before external organizations.
- > Quality:
 - Implement policies to improve quality under GLP, GCP, GMP, ISO 9001 and UNE 166002 standards.
 - Lead the quality assurance programme at CIM Sant Pau and in clinical trials where the HSCSP Research Institute acts as sponsor.
 - Oversee auditing for protocols, databases, experimental phases, facilities, processes and final reports for clinical trials.
- Oversee supplier audits.
- Monitor non-conformity in internal and external audits.
- Draw up own SOPs and provide support for SOPs preparation by other units.
- Establish mechanisms to assess quality and good scientific practices in IIB Sant Pau.
- > Information systems:
 - Design mechanisms and implement tools for the collection and organization of data and information to feed decision making.
 - Manage and transform information and data to contribute to the fulfillment of objectives and strategies.
 - Respond to external requests for data and information (statistical surveys, SIRECS, etc).
 - Implement policies to improve information systems.
 - Develop new indicators of use for the institution.
 - Update research group staff details on the intranet.
- > Biosafety Committee:
 - Management of the biosafety committee.

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Supervisor in charge:

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Radioactivity Unit

Functions:

- > The Radioactivity Unit provides groups with specific research laboratories in which to work with radioactive isotopes in liquid form. These areas are fully equipped and adapted for the handling of radioactive material and apply optimum measures for the safety and radioprotection of staff and the environment.
- > This area has been authorized by the nuclear safety authority and its staff supervise compliance with the corresponding laws, guidelines and regulations.
- > Services include support for:
 - In vitro labelling of proteins, lipoproteins and liposomes.
 - Cellular proliferation and toxicity.
 - Nucleic acid labelling.
 - Immunoassay techniques.
 - Determination of enzymatic activities using radiolabelled substrates.
 - Analysis and separation of labelled molecules.
 - Metabolism in vitro and in vivo.

Facilities:

The Radioactivity Unit has the following facilities:

- > 1 room for radioactive material storage.
- > 7 equipped laboratories, one of them refrigerated.
- > 1 room for gamma- and beta- counters.
- > 1 room for radioactive waste storage.
- > 1 room for controlled disposal of radioactive waste.
- > Radioactive liquid waste containers for controlled radioactive waste disposal.
- > Shielding accessories for radiation safety (table top shields, shielded containers, protective equipment, etc)
- > Portable radiation and environmental contamination detectors.
- > 1 ventilated rack for in vivo studies.
- > 2 chemical safety cabinets for gas extraction.
- > 1 vertical laminar air flow cabinet for cell cultures.
- > 1 CO₂ incubator for cell cultures.

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Centre for Drug Research (CIM Sant Pau)

Functions:

Perform clinical drug trials and/or clinical research in compliance with methodological, ethical and legal requirements in the context of international GCP guidelines concerning:

- > Clinical trials that are not of therapeutic interest for participants (phase I, special populations, psychopathological research, biomarkers, proof of concept).
- > Clinical trials in neuropsychopharmacology.
- > Clinical trials in initial developmental phases.

Facilities:

Three separate work areas have been designated for the trials:

Healthcare:

- > Admission zone.
- > 24 beds distributed in 4 units: trials in healthy volunteers and patients.
- > 2 individual rooms for CNS studies.
- > Ambulatory zone.
- > 4 consulting rooms for complementary testing, mainly related to CNS.
- > 3 cubicles to evaluate psychomotor performance.

Logistical support:

- > Rest area for clinical trial participants with bathrooms and kitchen.
- > Areas for the preparation, centrifugation and separation of biological samples.
- > Cold room.
- > Archives.

Management, administration and data processing:

- > Offices.
- > Area for monitors.
- > IT equipment for clinical trial activities of a non-experimental nature.

Communications Coordination Team

Functions:

- > Coordinate IIB Sant Pau communications.
- > Prepare IIB Sant Pau annual reports and other communication materials.
- > Provide an effective news distribution service and generate positive media coverage.
- > Respond to media enquiries.
- > Update website content.
- > Establish standards concerning graphics and linguistic style to ensure visual uniformity in all IIB Sant Pau communications.

**Coordinator:**

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Staff:

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Clinical Research and Clinical Trials Unit (UICEC Sant Pau)

Functions:

It provides comprehensive support to researchers in the development of independent research projects (not sponsored by the pharmaceutical industry) on the methodological, regulatory, administrative, economic and practical aspects, subject to compliance with the ethical, good clinical practice and legislation.

UICEC Sant Pau is part of the Spanish Clinical Research Network (SCReN), a functional organization network to support the conduction of multi-center clinical trials.

Knowledge management:

- > One-stop information for independent research group projects.
- > Comprehensive assessment and project coordination.
- > Point of communication between researchers and technical units.
- > Pharmacovigilance activities for trials including drugs or medical devices.
- > Knowledge management:
 - Study of dimensionality and feasibility of projects.
 - Identification of each project needs.
 - Advice on the preparation of documentation: protocol, annexes, monitoring report, final report.
 - Advice on the submission of documentation to Spanish Agency for Medicines and Medical Devices (AEMPS), Ethics Committee for research with medicinal products (CEIm), Autonomous Communities (CCAA) and other relevant authorities.
 - Advice on project registration in public databases.
 - Identification of spinoff projects.
 - Advice on the presentation of research results.

Methodological and statistical support unit:

- > Advice on study design.
- > Data entry.
- > Data processing.
- > Development of statistical reports.
- > Electronic CRFs validation and management.
- > Documentation and reports.

Documentation, archiving, monitoring and follow-up unit:

- > Support in document creation: EudraCT application form and annexes / other application forms / evaluation forms / monitoring reports.
- > Support in the processing of initial applications, clarifications and amendments: AEMPS, CEIm, other health authorities regarding clinical trials, and other post-authorization studies.
- > Comprehensive monitoring of clinical trials and observational studies.
- > Management of initial, follow-up and final reports.
- > Development and file custody promoter (Master File), file preparation investigator.
- > Other communications to CEIC, autonomous communities and competent authorities.

Unit of management and financial management:

- > Management of clinical trials contracts with participating centers.
- > Management of collaboration agreements with laboratories / companies for funding.
- > Management of clinical trial-related contracts (CRO's, E-CRDs, statistics, etc.).
- > Management of clinical trial-related client and supplier invoices.
- > Management of clinical trial insurance policies.
- > Preparation of financial reports for the submission of studies to ethics committees.
- > Management of payment of fees to the competent authorities.



Director of the Animal Facility:

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Animal Experimentation Service

The Animal Experimentation Service is the area dedicated to the house and care of experimental animals, and to work with experimental procedures that use them. The SEA has the ISO 9001: 2015 certification and guarantees compliance with the legal and ethical laws related to the use of animals for experimentation and for other scientific purposes. It is officially registered as a breeding center, supplier and user of experimental animals (B9900067 and REGA ES080190036528), and it also has the authorization to house and work with Genetically Modified Organisms (A / ES / 08/21 and A / ES / 08 / I-14) . The staff of the SEA is also officially trained and accredited: Welfare and Animal Health Specialist, Advisor on Animal Welfare, Technicians and Caregivers.

Translational research needs responsible use of experimental animals and the reproducibility of results. The use of animals of high genetic and health quality and their use, maintenance and well-being in appropriate facilities are accurate to obtain these results. The SEA offers its services to keep the animals in the right conditions and also to advice and give specialized support to the researchers in the realization and design of the experimental procedures and techniques

The SEA consists of 2 separate buildings:

- > Conventional Facility, one floor area of 650m², designed according to the requirements of Decret 214/1997 and R D 53/2013. It has the necessary facilities to house up to 40 pigs, 114 rabbits, 350 rats and 2500 mice in conventional conditions and 90 ratios and 2200 mice in SPF or Special Pathogen-Free conditions (individually ventilates cages in a positive pressure room).

The SEA facility has work halls for rodents and rabbits and 4 experimental operating theaters for pigs. It also has advanced medical equipment for small animals: bioluminescence (Hamamatsu), high frequency ultrasound (Vevo2100), intravital microscope, flow measurement equipment and probes, ECG monitor, NIP equipment, mechanical ventilators , equipment of anesthesia with sebu / isoflurane, surgery microscopes... For the large animals the SEA has: multiparameter monitors, defibrillators, anesthesia equipment with sebu / isoflurane, mechanical ventilators, RX (Philips and Siemens) equipment, equipment Trans-echocardiography and transesophageal echocardiography (Philips iE33), intravascular echocardiography (Siemens Acuson), real-time 3D imaging equipment (CartoXP), radiofrequency ablation equipment, 12-lead ECG...

The operating theaters can be used to teach microsurgery courses, experimental surgery, medical equipment presentations...

- > The Biomodule-SPF is a barrier area of 30m² that can house up to 400 immunodeprived mice. The entrance to the installation is through an air shower for people or a SAS of peroxide for materials. Work with animals is under biosafety hood, it has a preclinicalin vivo image system for fluorescence and / or bioluminescence (IVIS Spectrum) and inhalatory anesthesia equipment.

Transfer and Innovation Unit

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Coordinator:

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Staff:

Gisela Gallego
Marina Passarell

Functions:

- > Facilitate collaboration between institute's research groups and industry.
- > Support to public and private funding of technology development projects.
- > Support the submission of European projects.
- > Analysis of the business viability of technological projects.
- > Intellectual Property protection.
- > Technology Transfer.
- > Support the creation of spin-offs and start-ups.
- > Legal support to agreements with third parties.



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Miguel A. Viciano

Ethics Committee for research with medicinal products (CEIm)

The Ethics Committee for research with medicinal products (CEIm) of the HSCSP Healthcare Management Foundation is an independent body that, according to the laws that accredit it, has the mission to ensure the protection of rights, safety and welfare of the subjects involved in a research study and provide

public assurance of that protection by reviewing the protocol, the suitability of the researchers, facilities, equipment and methods to be used in obtaining and documenting the informed consent of the subjects.

Its specific functions are:

- > Evaluate the methodological, ethical and legal aspects of:
 - Clinical trials with medicinal products and medical devices
 - Non interventional studies.
 - Pharmacogenetic and pharmacogenomic studies.
 - Studies evaluating surgical or psychological treatments.
 - Studies involving invasive procedures or the use of health data or biological samples.
- > Evaluate the relevant amendments in projects approved by the CEIm.
- > Conduct a follow up of clinical trials with medicinal products and medical devices, as well as the other approved research studies.



Head of the technical secretariat:

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Administrative Staff:

Robert Caballero
Marisol Mogollón
Albert Querol

Technical Secretariat of the CEIm

The Technical Secretariat of the CEIm is an independent agency whose mission is to protect the rights, safety and wellbeing of persons participating in HSCSP research projects which may entail physical or psychological harm. The Technical Secretariat of the CEIm evaluates the methodological, ethical and legal aspects

Functions:

- > Receive, log and validate documentation for clinical research projects submitted to the Committee for evaluation.
- > Arrange and call Committee meetings, inform members of the agenda and provide them with copies of protocol summaries and patient informed consent and information sheets.
- > Prepare and submit reports to the Committee containing a methodological, ethical and legal description and analysis (and any other relevant information) of the research projects listed in agendas.
- > Act as a reference point in communications with and between researchers, sponsors, medical administrators and managers and healthcare authorities regarding all aspects of the activities of the Committee and of the research projects evaluated by the Committee.

as well as any other relevant information regarding all research projects listed in the minutes of the Committee's meetings. It also advises researchers in the HSCSP and the HSCSP Research Institute regarding the preparation and presentation of clinical research projects.

- > Prepare and sign the reports of the Committee and communicate its decisions to the corresponding sponsors and researchers.
- > Prepare the minutes of meetings and distribute them to Committee members within the established period.
- > Manage all documentation associated with the operations and activities of the Committee and with the research projects evaluated by the Committee.
- > Manage contracts for all clinical studies to be performed at the HSCSP.
- > Certify the actions of the Committee.
- > Prepare the annual report of the Committee.
- > Ensure compliance with the SOPs of the Committee.



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Scientific Director and Coordinator:

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Coordinator:

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Biobank

The Biobank is a core facility for coordinating the collection, processing, store and transfer of human biological samples at the highest standard.

It's comprised of three main sections:

- > Blood and fluids: samples of hematological neoplasias, respiratory, psychiatric and neurological diseases. The processing is performed in the biobank's BSL-2 laboratory.
- > Tumour bank: Tumoral and non-tumoral tissue samples from patients affected by a neoplasia.
- > Histopathology laboratory: tissue processing, paraffin and OCT-block preparation, block cutting (microtome and cryostat), automatic immunostaining, histological stainings, special stainings, FISH staining, tissue microarray, high-resolution slide scan.

Equipment:

- > BSL-2 II A cabinet, inverted microscope, TC automated cell counter, refrigerated centrifuge, refrigerated microfuge, computer system for managing samples and data, automated molecular extraction (Qiacube, Qiagen), controlled freezing ramp
- > liquid nitrogen tanks, -20°C freezer, -80°C freezers with safety systems
- > Tissue processor VIP Jr (Sakura), paraffin tissue embedding console system (Sakura), microtome (Microm), cryostat (Leica), Automated Immunostaining System (DAKO AS 48), Semiautomatic tissue arrayer (Galileo), Digital slide scanner Panoramic Midi (3DHitech), microwave tissue processor (KOS), multiobserver microscope with fluorescent light illumination system (Olympus)

Grants:

- > HSCSP Research Institute. Biobank Network 2014-2017. Amount: 138,000 €
- > ICO Agreement (Oncology Director Plan for members of the Catalan Network of Tumour Banks) 15,000 €

Genomics and Transcriptomics Platform

Equipment:

- > Affymetrix array platform (upgrade 7G).
- > 7900HT Real time quantitative PCR (Applied Biosystems)
- > Ion Torrent Personal Genome Machine, Ion OneTouch™ System
- > 3130xl Genetic Analyzer capillary electrophoresis sequencer
- > Bioanalyzer 2100, Nanodrop 2000

Microscopy Platform

microscopia@santpau.cat

Coordinator:

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Technical Staff:

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Equipment:

- > Confocal multispectral Leica SP5 AOBS with high-resolution scanning system and high-speed tandem scanning, FLIM/FCS modules and time-lapse incubation system.
- > Zeiss digital time-lapse epifluorescence microscope.

Citomics Platform

citometria@santpau.cat

Coordinator:

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Technical Staff:

Flow Cytometry Laboratory:

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Cell Culture Laboratory:

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> FLOW CYTOMETRY LABORATORY

Equipment:

- > MACSQuant (Milteny Biotech) conventional flow cytometry.
- > FACSCalibur (BD) conventional flow cytometry.
- > FACSAria (BD) flow cytometry cell sorter.

> CELL CULTURE LABORATORY

Equipment:

- > CO₂ incubators, 2 hypoxia incubators (2-21% O₂), IIA biosafety cabinets (BSL2), hypoxia cabinets (BSL1), Culture baths, inverted microscope with high-resolution colour camera, Refrigerated centrifuge, Fridge 4°C and freezer -20°C, Thermo-desinfector and autoclave.

Equipment for General Use

> IMAGE ANALYSIS LABORATORY:

Equipment:

- > Revolution 4200 microarray scanner (Vidar).
- > Image Station 4000MM Pro (Kodak) gel documentation: luminescence, fluorescence, absorption.

> OTHER EQUIPMENT

- > Precision weighing balances (Sartorius).
- > Infinite 200 (Tecan) microplate reader: spectrophotometer, fluorometer, luminometer.

Coordinator:

Elena Serrano

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Areas of Research

36



Area 1
Cardiovascular Diseases

68



Area 2
Genetic, Metabolic and
Inflammatory Diseases

112



Area 3
Haematological and
Oncological Diseases

134



Area 4
Neurological,
Mental Disorders and Ageing

176



Area 5
Uronephrology
and Experimental Surgery

190



Area T1

Epidemiology, Public Health
and Healthcare Services

222



Area T2

Molecular, Genomic, Cellular
and Kinetic-Dynamic Bases for
Diseases and their Treatment


234



Associated Groups

AREA 1

Cardiovascular Disease

- 
- 38 Clinical and Translational Cardiology
 - 44 Thrombosis and Haemostasis
 - 46 Cardiovascular Biochemistry
 - 50 Angiology, Vascular Biology and Inflammation
 - 52 Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases
 - 58 Biomarkers for Cardiovascular Disease
 - 62 Atherosclerosis and Vascular Biology
 - 64 Regulation of Cardiac Rhythm and Contraction
 - 66 Lipids and Cardiovascular Pathology

eases



Clinical and Translational Cardiology



Coordinator

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 Serra Peñaranda, Antoni FGS
 Sionis, Alessandro FGS
 Viñolas Prat, Xavier FGS
 Vives Borràs, Miquel IR

Main Lines of Research

- ▶ Electrophysiology and arrhythmias, clinical and experimental.
- ▶ Heart failure.
- ▶ Ischemic heart disease.
- ▶ Valvular heart disease.
- ▶ Cardiac imaging.
- ▶ Percutaneous valve repair.
- ▶ Bioengineering

Challenges

Electrophysiology

- ▶ Describe the mechanisms and clinical significance of the electrocardiographic alterations in patients with acute myocardial infarction, using translational research in pig heart models.
- ▶ Develop animal models for the study of left bundle branch block.
- ▶ Prognosis in patients with left circumflex coronary occlusion.
- ▶ Develop clinical applications of myocardial impedance in patients undergoing ablation of arrhythmias.

Heart failure

- ▶ Develop new risk scores for ambulatory heart failure patients predicting death and rehospitalizations.
- ▶ Research on new biomarkers in patients with heart failure included in the Spanish registry Redinscor II (RIC) (1500 patients). Our group is the national coordinator.
- ▶ Develop new markers for early detection of cardiac graft rejection in transplanted patients.
- ▶ Develop palliative care programs for patients with advanced heart failure.

Ischaemic heart disease

- ▶ Settle a Program for patients with refractory angina.
- ▶ Treat complex atherosclerotic coronary artery lesions using international techniques.

Valvular heart disease

- ▶ Implement new percutaneous techniques for the treatment of mitral valve regeneration and degenerative aortic stenosis.
- ▶ Implement devices for the treatment of prosthetic valve leak.

Cardiac imaging

- ▶ Implement new imaging software analysis to detect structural abnormalities of the myocardium (fibrosis, necrosis).
- ▶ Implement new software analysis for fusion imaging in patients submitted to coronary interventions.
- ▶ Implement new percutaneous techniques for the treatment of mitral regurgitation in patients with heart failure or myocardial infarction.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Vicenta Llorente-Cortés, ICC - CSIC.
- ▶ Leif Hove Madsen, ICC - CSIC.
- ▶ Jordi Ordóñez Llanos, HSCSP - Biochemistry Laboratory.
- ▶ Antoni Capdevila, HSCSP - Radiodiagnostics.
- ▶ María Poca Sans, HSCSP - Digestive Disorders.
- ▶ Rafael Serra, HSCSP - Anaesthesiology.
- ▶ Enric Álvarez, HSCSP - Psychiatry.

External Collaborations

Juan Cinca Cusculola - RD12/0042-RIC (Cardiovascular Research Network)

Programme 6: Clinical and Translational Cardiology

- ▶ Alfredo Bardají Ruiz. Hospital Universitari Joan XXIII (Tarragona)
- ▶ Fernando Worner Diz. Hospital Universitari Arnau de Vilanova (Lleida)
- ▶ Andrés Grau Sepúlveda. Hospital Son Duireta (Palma de Mallorca)
- ▶ Xavier Rosell Ferrer. Universitat Politècnica Catalunya – UPC (Barcelona)

- ▶ Rafael Vázquez García. Hospital Universitario Virgen de Valme (Sevilla) / Hospital Puerta del Mar (Cádiz)
- ▶ Joaquín Lucena Romero. Instituto de Medicina Legal (Sevilla)
- ▶ José M. Cubero Gómez. Hospital Virgen del Rocío (Sevilla)
- ▶ Antonio Fernández Romero. CHARE Utrera SAS (Sevilla)
- ▶ Josep Brugada Terradellas. Hospital Clínic (Barcelona)
- ▶ Julián Pérez-Villacastín. Hospital Clínico San Carlos (Madrid)
- ▶ Juan Francisco Delgado Jiménez. Hospital 12 de Octubre (Madrid)
- ▶ José Luis Zamorano. Hospital Ramón y Cajal (Madrid)
- ▶ Mariano Valdés Chavarri. Hospital Universitario Virgen de la Arrixaca (Murcia)
- ▶ José Ramón González. Hospital Clínico Universitario (Santiago de Compostela)
- ▶ Luis Alonso-Pulpón Rivera. Hospital Puerta del Hierro (Madrid)
- ▶ Covadonga García González. Hospital Guadarrama (Madrid)
- ▶ José Miguel Rivera. Hospital La Fe (Valencia)
- ▶ Alfonso Castro Beiras. Complejo Hospitalario Universitario A Coruña
- ▶ Francisco Fernández Avilés. Hospital Gregorio Marañón (Madrid)
- ▶ Ignacio Flores Hernández. Centro Nacional de Investigaciones Cardiovasculares - CNIC (Madrid)

Programme 5: Arrhythmias

- ▶ Francisco Fernández Avilés. Hospital Gregorio Marañón (Madrid)
- ▶ Josep Brugada Terradellas. Hospital Clínic (Barcelona)
- ▶ Julián Pérez-Villacastín. Hospital Clínico San Carlos (Madrid)
- ▶ Juan Francisco Delgado Jiménez. Hospital 12 de Octubre (Madrid)
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- ▶ Cándido Martín Luengo. Hospital Universitario de Salamanca
- ▶ Luis Rodríguez Padial. Complejo Hospitalario de Toledo
- ▶ Francisco Javier Chorro Gascó. Hospital Clínico de Valencia
- ▶ Francisco Sánchez Margallo. Centro de Cirugía de Mínima Invasión Jesús Usón de Cáceres

CB16/11/00276 - CIBER Enfermedades Cardiovasculares (CIBERCV), Registro Redinscor III

- ▶ Lisardo Bosca. Instituto de Investigaciones Biomédicas Alberto Sols (Madrid)
- ▶ Juan Delgado. Hospital 12 de Octubre (Madrid)
- ▶ Javier Díez. Centro de Investigación Médica Aplicada de Navarra
- ▶ José Ramón González-Juanatey. Hospital Clínico de Santiago de Compostela
- ▶ Julián Pérez Villacastín. Hospital Clínico San Carlos (Madrid)
- ▶ José Miguel Rivera. Hospital La Fe (Valencia)

- ▶ Antoni Bayés Genís. Hospital Germans Trias i Pujol de Badalona
- ▶ Pablo García Pavía. Hospital Puerta de Hierro (Madrid)
- ▶ Manuel Martínez Sellés. Hospital Gregorio Marañón (Madrid)
- ▶ J. Nuñez. Hospital Clínico de Valencia
- ▶ Domingo Pascual Figal. Hospital Virgen de la Arrixaca (Murcia)
- ▶ Alfredo Bardají Ruiz. Hospital Universitari Joan XXIII (Tarragona)
- ▶ Fernando Worner Diz. Hospital Universitari Arnau de Vilanova (Lleida)

Other collaborators

- ▶ Xavier Rosell, Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya - UPC (Barcelona)
- ▶ Borja Ibáñez, Laboratorio Traslacional Imagen y Terapia Cardiovascular, Centro Nacional de Investigaciones Cardiovasculares Carlos III - CNIC (Madrid)
- ▶ Deborah Gil, Barcelona Supercomputing Center (Centro Nacional de Supercomputación-CVC, UAB Barcelona)
- ▶ Ignacio Cruz González. Hospital Universitario de Salamanca
- ▶ Reda Ibrahim, Montreal Heart Institute Adult Congenital Heart Center, Montreal (Canada)

Antoni Serra Peñaranda

TEAM

- ▶ Eulogio García. Hospital Clínico San Carlos (Madrid)
- ▶ Carlos Macaya Miguel. Hospital Clínico San Carlos (Madrid)
- ▶ Andrés Iniguez Romo. Complejo Hospitalario de Vigo

Euro CTO Club (chronic total occlusions (CTOs))

- ▶ Formed by 60 members, spread among all European countries

Eulàlia Roig Minguell, Registro Nacional de Trasplante Cardíaco

- ▶ Clínica Universitaria de Navarra, Pamplona, Navarra
- ▶ Hospital Universitario Puerta de Hierro, Majadahonda, Madrid
- ▶ Hospital Universitario Marqués de Valdecilla, Santander, Cantabria
- ▶ Hospital Universitario Reina Sofía, Córdoba
- ▶ Hospital Universitario y Politécnico La Fe, Valencia
- ▶ Hospital General Universitario Gregorio Marañón, Madrid
- ▶ Fundación Jiménez Díaz, Madrid
- ▶ Hospital Universitario Virgen del Rocío, Sevilla
- ▶ Hospital Universitario 12 de Octubre, Madrid
- ▶ Hospital Universitario de A Coruña, A Coruña
- ▶ Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, Barcelona
- ▶ Hospital Central de Asturias, Oviedo, Asturias
- ▶ Hospital Clínic i Provincial, Barcelona
- ▶ Hospital Universitario Virgen de la Arrixaca, El Palmar, Murcia
- ▶ Hospital Universitario Miguel Servet, Zaragoza
- ▶ Hospital Clínico Universitario, Valladolid

Clinical and Translational Cardiology

Collaborations

Xavier Viñolas Prat, RETAC Group - European Network for the Treatment of Arrhythmias in Cardiology

- ▶ Philippe Lagrange. Clinique Saint Pierre (Perpignan)
- ▶ Benoît Guy-Moyat. Hospital Universitaire de Limoges (France)
- ▶ Franck Halimi. C.M.C. Parly II (Le Chesnay)
- ▶ Luc de Roy. Clinique Universitaire de Saint Godinne (Yvoir-Belgium)
- ▶ Serge Boveda. Clinique Pasteur (Toulouse)
- ▶ Julio Martí. Hospital del Mar (Barcelona)

- ▶ Pascal Defaye. Hospital Universitaire de Grenoble
- ▶ Antonio Curnis. Spedali Civili (Brescia-Italy)
- ▶ Marc Zimmermann. Hôpital de la Tour (Geneve-Switzerland)

Alessandro Sionis, GREAT-Global Research on Acute Conditions Team

- ▶ International Network between 308 experts operating in the management of acute clinical conditions in the field of Emergency Medicine

Active Grants

- ▶ Juan Cinca Cuscollola. Red Cardiovascular. RD12/0042/0002. Instituto de Salud Carlos III. Duration: 2013-2017. 594,532.28 €.
- ▶ Juan Cinca Cuscollola. Desarrollo preclínico de una nueva técnica para guiar la ablación eléctrica de las arritmias ventriculares en pacientes con infarto crónico mediante bioimpedancia. PI13/00765. Instituto de Salud Carlos III. Duration: 2014-2017. 140,250.00 €.
- ▶ Juan Cinca Cuscollola. A novel myocardial impedance mapping system for ablation of post-infarction ventricular arrhythmias in humans: A translational development. MARATO 20150830. Fundació La Marató de TV3. Duration: 2016-2019. 160,000.00 €.
- ▶ Maria Eulàlia Roig Minguell. Adrenergic agonist Treatment in Patients with Chronic Heart Failure and Secondary Pulmonary Hypertension: a Randomized Placebo-Controlled Phase 2 Clinical Trial. MARATO 20151732. Fundació La Marató de TV3. Duration: 2016-2019. 119,500.00 €.
- ▶ Juan Cinca Cuscollola. Grup de Recerca Clínica i Translacional en Cardiologia - RCTCAR. 2014 SGR 620. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.

- ▶ Mercedes Rivas Lasarte. Eficàcia d'una estratègia de tractament guiada per ecografia pulmonar respecte a la pràctica clínica habitual en pacients amb insuficiència cardíaca. IR16-R1. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2016-2017. 35,500.00 €.
- ▶ Juan Cinca Cuscollola. Translational development of myocardial electrical impedance mapping system to guided catheter ablation of infarction ventricular arrhythmias. DTS15/00099. Instituto de Salud Carlos III. Duration: 2016-2017. 100,100 €.
- ▶ Xavier Viñolas. RITMOCORE - Arrhythmias monitoring and comprehensive care. Horizon 2020. H2020-SCI-2016-CNET. European Commission. Agència de Qualitat i Avaluació Sanitàries (AQuAS). Duration: 2016-2020 . 903,875 €.
- ▶ Juan Cinca Cuscollola. Ciber Cardiovascular - CIBERCV. CB16/11/00276. Instituto de Salud Carlos III. Juan Cinca. Duration: 2017-2020. 71,029,00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Juan Cinca Cuscollola. Tractament combinat contra el dany per reperfusió en l'infart de miocardi COMBAT-MI. SLT002/16/478. Departament de Salut. Duration: 2017-2019. 24,645.00 €.
- ▶ Mercedes Rivas Lasarte. Contractes de formació en recerca "Río Hortega" 2017. CM17/00028. Instituto de Salud Carlos III. Duration: 2018-2019. 53,732.00 €.
- ▶ Juan Cinca Cuscollola. Desarrollo de un modelo preclínico para la caracterización electrofisiológica y estructural del infarto de miocardio auricular. PI17/00069. Instituto de Salud Carlos III. Duration: 2018-2020. 66,000.00 €.

- ▶ José María Guerra Ramos, Caracterización Genética del Síndrome del QT Largo Asociado a Fármacos. PI17/00980, Instituto de Salud Carlos III. Duration: 2018-2020, 122,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Patents

- ▶ Javier Rosell; Juan Cinca; Ramon Bragos; Gerard Amorós; Esther Jorge; Tomas Garcia; Benjamin Sanchez. Systems And Methods To Assess Infarcted Myocardial Tissue By Measuring Electrical Impedance During The Cardiac Cycle. PCT/EP2016/056933. International. 30/03/2016.

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Thrombosis and Haemostasis



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Main Lines of Research

- ▶ Investigation of the genetic basis of venous and arterial thrombosis. GAIT-1 and GAIT-2 projects.
- ▶ Investigation of new antithrombotic drugs: thrombin inhibitors, molecules against activated factor X, low molecular weight heparin with oral activity, among others.
- ▶ Biomarkers of prothrombotic states in patients under 55 years with venous thromboembolic disease, acute ischaemic stroke, or acute myocardial infarction. VEREMA project.
- ▶ Applied clinical development of the self-management model of oral anticoagulant treatment. ORION project. Retrospective analysis of the clinical outcomes from patient self-management of antivitamin-K treatment at the Hospital de Sant Pau. NCT3532724
- ▶ Mathematical models of prediction of the individual risk of thromboembolic disease in general population (RETROVE Project) and in cancer patients (MIRTO Project).
- ▶ CITA project. Centre for Antithrombotic Therapy Management. Research into a new ambulatory management model for patients receiving any kind of antithrombotic therapy (anti vitamin-K, new oral anticoagulants, low molecular weight heparins, antiplatelets) by incorporating new educational programmes, specialized nursing and new communication technologies.

Challenges

- ▶ Study QTL detected in GAIT-1 families in relation to phenotypes of haemostasis with thrombosis risk (resistance to activated protein C, factor VIII, homocysteine, factor XII, body mass index and others).
- ▶ Replicate QTL related to thrombosis in GAIT-1 families by means of the linkage analysis using new GAIT-2 families.
- ▶ Conduct genome-wide association study (GWAS) of phenotypes involved in GAIT-1.
- ▶ GWAS of phenotypes included in GAIT-2.
- ▶ Analyse RNA expression in the GAIT-2 families.
- ▶ Investigate miRNA associated with thromboembolic disease in GAIT-2.
- ▶ To complete the recruitment of the cohorts included in MIRTO Project (Modeling the Individual Risk of Thrombosis in Oncology), with the goal of establishing an individual risk score for venous thromboembolism (RETROVO sub-project) and for ischaemic stroke (SINO subproject) in patients with cancer.
- ▶ Research plasma proteins associated with the risk of venous thromboembolism by using high affinity proteomics developed at Karolinska Institutet. VEREMA project, joint collaboration between the European case-control studies VEBIOS (Sweden), RETROVE (from our unit) and MARTHA (France).
- ▶ Investigation on laboratory management of DOACs.
- ▶ Search for new universal laboratory methods for the assessment of any kind of oral anticoagulant (AVK and DOACs).
- ▶ To finish the recruitment of patients for the ORION project.

Active Grants

- ▶ Joan Carles Souto Andrés. Red Cardiovascular. RD12/0042/0032. Instituto de Salud Carlos III. Duration: 2013-2017. 181,000.00 €.
- ▶ Joan Carles Souto Andrés. Continuación de la búsqueda de algoritmos aplicables en la clínica para definir el perfil individual de Riesgo de Enfermedad Tromboembólica Venosa (RETROVE). PI15/00269. Instituto de Salud Carlos III. Duration: 2016-2018. 86,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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- ▶ Concepción Muñoz Lozano, Predisposición genética a la trombosis en pacientes oncológicos (ONCOTHROMB). SLT002/16/00113. Departament de Salut. Duration: 2017-2019. 63,311.05 €.

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Theses

- ▶ Miguel Vázquez Santiago, Plaquetas y enfermedad tromboembólica. Aspectos genéticos, biológicos y clínicos. Universitat Autònoma de Barcelona. Directors: Juan Carlos Souto and Nuria Pujol-Moix. Date of defense: 26/09/2017.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Genomics of Complex Diseases (GAIT1, GAIT2, RETROVE, VEREMA and MIRTO Project).
- ▶ Stroke Unit (HERO and MIRTO Project).
- ▶ Vascular Surgery (GAIT2, genetics of venous insufficiency).
- ▶ Medical Oncology (MIRTO Project).
- ▶ Clinical Haematology (MIRTO Project).
- ▶ Digestive Diseases (HEPACO).

External Collaborations

- ▶ Cardiovascular Research Network (RIC).
- ▶ Karolinska Institutet, Stockholm, Sweden: GAIT2 and VEREMA.
- ▶ La Timone Hospital, Marseille, France: GAIT2 and VEREMA.

- ▶ Pierre and Marie Curie University, INSERM, UMR-S 1166, Paris, France: GAIT2 and VEREMA.
- ▶ Université de Genève, Switzerland: GAIT2.
- ▶ Texas Research Institute (formerly Southwest Foundation for Biomedical Research), San Antonio, USA: GAIT1 and GAIT2.
- ▶ Universitat Politècnica de Catalunya, Barcelona, Spain. Centre for Biomedical Engineering Research: RETROVE and MIRTO design.
- ▶ Thrombosis Group of the Spanish Medical Oncology Society (SEOM): ONCOTHROMB and MIRTO.
- ▶ Institut of Biological Psychiatry, Mental Health Snc. Hans. Roskilde (Denmark).
- ▶ Haematology Service of Hospital Sant Joan de Déu (Clinical modeling for the management of haemophilic patients and patients under self-management of VKA therapy)

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nome-wide association study with additional genetic and post-transcriptional analyses reveals novel regulators of plasma factor XI levels (2017) HUM MOL GENET, 26 (3), 637-649.

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Cardiovascular Biochemistry



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Main Lines of Research

Atherosclerosis mechanisms

- ▶ Mechanisms leading to lipoprotein aggregation in the arterial wall.
- ▶ Use of mimetic peptides derived from apoJ as therapeutic tools.
- ▶ Involvement of LDL(-) on lipid accumulation in cardiomyocytes associated to diabetes and obesity.
- ▶ Association of lipid accumulation in cardiomyocytes with heart failure.
- ▶ Inflammatory mechanisms induced by LDL(-) on monocytes from patients with diabetes.

Diagnosis and Biomarkers

- ▶ Analysis of apolipoprotein J (apoJ) as a marker of CVR.
- ▶ Diagnosis of chronic or acute cardiovascular diseases.
- ▶ Development of algorithms for ruling-out acute coronary disease.
- ▶ Assessment of new biomarkers of acute cardiovascular disease: cardiac troponins, natriuretic peptides, ST-2.
- ▶ Development of methods for point-of-care biomarker measurement.
- ▶ Vulnerability markers in atheromatous plaque: electronegative LDL, LDL size, HDL function, myeloperoxidase, phospholipase.

Challenges

- ▶ Determine the intracellular mechanisms involved in the inflammatory response induced by LDL(-) and the components of the particle that entail atherogenicity.
- ▶ Analyse the therapeutic potential of mimetic peptides derived from apoJ to delay the development of atherosclerosis in animal models.
- ▶ Demonstrate that electronegative LDL is a marker of vulnerable atheromatous plaque.
- ▶ Find new markers of cardiovascular risk in diseases such as diabetes, HIV or cardiac failure.

Active Grants

- ▶ José Luis Sánchez Quesada. Contracte Programa d'Estabilització i Intensificació. CES12/023. Departament de Salut. Duration: 2013-2017. 120,000.00 €.
- ▶ José Luis Sánchez Quesada. Implicación de la apolipoproteína J (clusterina) en la arteriosclerosis. Utilización terapéutica de péptidos miméticos con actividad chaperona. . PI13/00364. Instituto de Salud Carlos III. Duration: 2014-2017. 85,500.00 €.
- ▶ José Luis Sánchez Quesada. Relación de la grasa epicárdica, la función lipoproteica y la inflamación con el desarrollo de arteriosclerosis y miocardiopatía diabética. PI16/00471. Instituto de Salud Carlos III. Duration: 2017-2019. 131,500.00 €.
- ▶ Jorge Ordoñez Llanos. Red Cardiovascular. RD12/0042/0043. Instituto de Salud Carlos III. Duration: 2013-2017. 94,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Collaborations with other IIB Sant Pau Groups

- ▶ Metabolic Bases of Cardiovascular Risk (Dr. F. Blanco Vaca).
- ▶ Endocrinology, Diabetes and Nutrition (Dr. A. Pérez).
- ▶ Angiology, Vascular Biology and Inflammation (Dr. M. Camacho).
- ▶ Clinical and Translational Cardiology (Dr. J. Cinca).
- ▶ Lipids and Cardiovascular Pathology (Dr. C. Llorente).
- ▶ Cerebrovascular Diseases (Dr. J. Martí Fàbregas).
- ▶ Clinical Psychiatry (Dra. M.J. Portella).
- ▶ Intensive Care Unit (Dr. A. Betbese).

External Collaborations**Research into atherosclerosis mechanisms**

- ▶ Dr. Petri Kovanen, Wihuri Research Institute, Helsinki, Finland.
- ▶ Dr. Kati Öörni, Wihuri Research Institute, Helsinki, Finland.
- ▶ Dr. Olga Gursky, Boston University School of Medicine, Boston, USA.
- ▶ Dr. Sandra Villegas Hernández, Biochemistry and Molecular Biology Department, Universitat Autònoma de Barcelona, Spain.
- ▶ Dr. Ferdinando Mannello, Department of Biomolecular Sciences, Section of Clinical Biochemistry and Molecular Genetics, University "Carlo Bo", Urbino, Italy
- ▶ Dr. Mar Hernández-Guillamon, Neurovascular Research Laboratory, Vall d'Hebron Research Institute; Universitat Autònoma de Barcelona, Spain.
- ▶ Dr. Ana Reis, Faculdade de Ciências da Universidade do Porto, Portugal.

Research into diagnosis

- ▶ Dr Daniel Podzamczar, HIV Unit, Infectious Disease Service, Bellvitge University Hospital, Barcelona, Spain (PATHER, ATADAR, SPIRAL and BICOMBO clinical trials).
- ▶ Dr. Joan Sabater-Riera, Critical Care Department, Bellvitge University Hospital, Barcelona, Spain.

- ▶ Formation and maintenance of a bank of samples within the Cardiovascular Research Network (RIC), Programme 6 (Clinical and Translational Heart Failure).
- ▶ Cardiovascular Research Network (RIC): Dr Francisco Marín, Cardiology, Hospital Virgen de Arrixaca, Murcia, Spain, 3-month stay by Dr Juan Antonio Vilchez (during a Rio Hortega contract) in our collaborative studies laboratory.
- ▶ Dr. Mariano Valdés, Virgen de Arrixaca University Hospital, Murcia (Spain), 3-week stay by Dr Carmen Puche in our collaborative studies laboratory.
- ▶ Dr. Laura Dos (D. Garcia-Dorado), Integrated Adult Congenital Heart Disease Unit of Vall d'Hebron University Hospital, Barcelona, Spain (Evedes study).
- ▶ Dr. Domingo Pascual-Figal, Cardiology Department, Virgen de la Arrixaca University Hospital, Murcia, Spain.
- ▶ Dr. Rafael Vázquez, Cardiology Service, Puerta del Mar University Hospital, Cádiz, Spain.
- ▶ Dr. Antoni Bayes-Genís, Cardiology Department, Germans Trias i Pujol University Hospital, Barcelona, Spain.
- ▶ IFCC Task Force on Clinical Applications of Cardiac Biomarkers (Dr Jordi Ordóñez-Llanos, member).
- ▶ Dr Fred S. Apple, Department of Laboratory Medicine and Pathology, University of Minnesota, USA.
- ▶ Dr Paul O. Collinson, Cardiovascular and Laboratory Departments, St. George's Hospital, London, UK.
- ▶ Dr Alan S. Jaffe, Mayo Clinic, Cardiovascular Division, Rochester, New York, USA.
- ▶ Dr James L. Januzzi, Cardiology Division, Massachusetts General Hospital, Boston, USA.

Participation in multicentre studies in the field of heart failure

- ▶ MUSIC (sudden death in heart failure) Risk Score, Spanish Society of Cardiology.
- ▶ MAGGIC (meta-analysis global group in chronic heart failure), European Society of Cardiology.

Cardiovascular Biochemistry

*TIF: 57.588 **MIF: 4.4298

Scientific Production

Alquezar A., Santalo M., Rizzi M., Gich I., Grau M., Sionis A., Ordonez-Llanos J., Merce J., Martin A., Munoz M., Povar J., Velilla J., Calmarza P., Tembory F., Ortiz C., Balaguer J., Carratala A., Combined high-sensitivity copeptin and troponin T evaluation for the diagnosis of non-ST elevation acute coronary syndrome in the emergency department Evaluación de una estrategia diagnóstica combinada con copeptina y troponina T ultrasensibles en el infarto de miocardio sin elevación del segmento ST en los servicios de urgencias (2017) EMERGENCIAS, 29 (4), 237-244.

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Alquezar-Arbe A., Sionis A., Ordonez-Llanos J., Cardiac troponins: 25 years on the stage and still improving their clinical value (2017) CRIT REV CL LAB SCI, 54 (7-8), 551-571.

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Apple F.S., Sandoval Y., Jaffe A.S., Ordonez-Llanos J., Cardiac troponin assays: Guide to understanding analytical characteristics and their impact on clinical care (2017) CLIN CHEM, 63 (1), 73-81.

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Cedo L., Santos D., Roglans N., Julve J., Palares V., Rivas-Urbina A., Llorente-Cortes V., Laguna J.C., Blanco-Vaca F., Escola-Gil J.C., Human hepatic lipase overexpression in mice induces hepatic steatosis and obesity through promoting hepatic lipogenesis and white adipose tissue lipolysis and fatty acid uptake (2017) PLOS ONE, 12 (12).

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Cuartero M., Ballus J., Sabater J., Perez X., Nin N., Ordonez-Llanos J., Betbese A.J., Cell-cycle arrest biomarkers in urine to predict acute kidney injury in septic and non-septic critically ill patients (2017) ANN INTENSIVE CARE, 7 (1).

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Estruch M., Minambres I., Sanchez-Quesada J.L., Soler M., Perez A., Ordonez-Llanos J., Benitez S., Increased inflammatory effect of electronegative LDL and decreased protection by HDL in type 2 diabetic patients (2017) ATHEROSCLEROSIS, 265, 292-298.

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Fernandez-De-Retana S., Cano-Sarabia M., Marazuela P., Sanchez-Quesada J.L., Garcia-Leon A., Montanola A., Montaner J., Maspoch D., Hernandez-Guillamon M., Characterization of ApoJ-reconstituted high-density lipoprotein (rHDL) nanodisc for the potential treatment of cerebral β -amyloidosis (2017) SCI REP-UK, 7 (1).

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Ferrari A., Righetti L., Martinez M.P., Fernandez-Lopez M., Mastrangelo A., Horcajada J.P., Betbese A., Esteban A., Ordonez J., Gea J., Cabello J.R., Pellati F., Lorente J.A., Nin N., Ruperez F.J., Discriminant biomarkers of acute respiratory distress syndrome associated to H1N1 influenza identified by metabolomics HPLC-QTOF-MS/MS platform (2017) ELECTROPHORESIS, 38 (18), 2341-2348.

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Jayaraman S., Sanchez-Quesada J.L., Gursky O., Triglyceride increase in the core of high-density lipoproteins augments apolipoprotein dissociation from the surface: Potential implications for treatment of apolipoprotein deposition diseases (2017) BBA-MOL BASIS DIS, 1863 (1), 200-210.

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Mccord J., Cabrera R., Lindahl B., Giannitsis E., Evans K., Nowak R., Frisoli T., Body R., Christ M., DeFilippi C.R., Christenson R.H., Jacobsen G., Alquezar A., Panteghini M., Melki D., Plebani M., Verschuren F., French J., Bendig G., Weiser S., Mueller C., Ordóñez-Llanos J., Prognostic utility of a modified HEART score in chest pain patients in the emergency de-

partment (2017) CIRC-CARDIOVASC QUAL, 10 (2).

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Mueller-Hennessen M., Mueller C., Giannitsis E., Biener M., Vafaie M., DeFilippi C.R., Christ M., Ordonez-Llanos J., Panteghini M., Plebani M., Verschuren F., Melki D., French J.K., Christenson R.H., Body R., McCord J., Dinkel C., Katus H.A., Lindahl B., Serial sampling of high-sensitivity cardiac troponin T may not be required for prediction of acute myocardial infarction diagnosis in chest pain patients with highly abnormal concentrations at presentation (2017) CLIN CHEM, 63 (2), 542-551.

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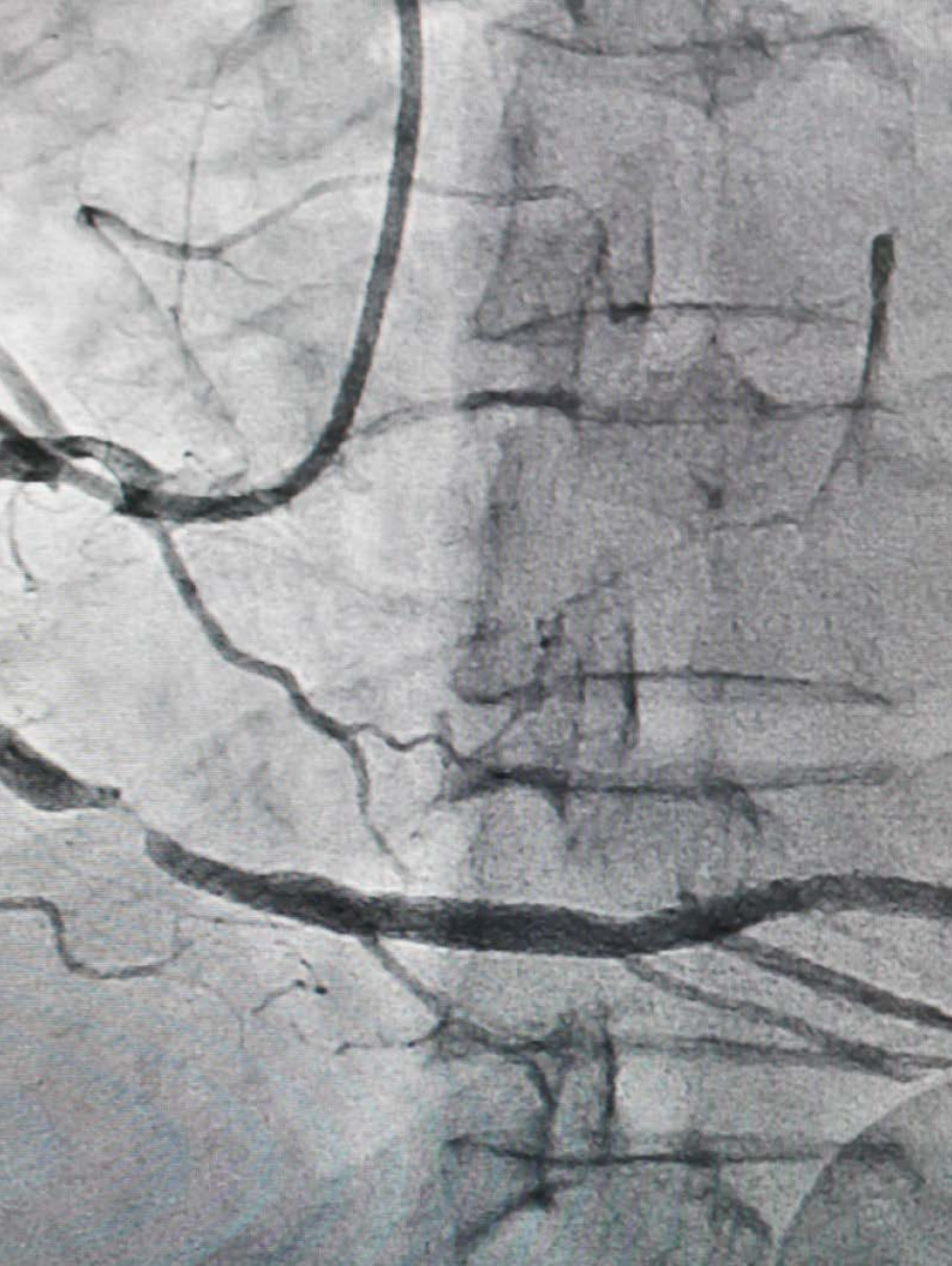
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Saenger A.K., Rodriguez-Fraga O., Ler R., Ordonez-Llanos J., Jaffe A.S., Goetze J.P., Apple F.S., Specificity of B-type natriuretic peptide assays: Cross-reactivity with different BNP, NT-proBNP, and proBNP peptides (2017) CLIN CHEM, 63 (1), 351-358.

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Saumoy M., Tiraboschi J.M., Ordonez-Llanos J., Ribera E., Domingo P., Mallolas J., Curto J., Gatell J.M., Podzamczak D., Atherogenic properties of LDL particles after switching from Truvada or Kivexa plus lopinavir/r to lamivudine plus lopinavir/r: OLE-MET sub-study (2017) HIV CLIN TRIALS, 18 (2), 49-53.

IF: 1.362



Angiology, Vascular Biology and Inflammation



Coordinator

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Members

Alcolea Ruiz, Sonia	IR
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Gómez Jabalera, Efrén	FGS
Navas Madroñal, Miquel	IR
Romero Carro, Josep Maria	FGS
Sola Font, Olga	IR
Soto Carricas, Begoña	FGS

Main Lines of Research

Cardiovascular Research

- ▶ Inflammatory mechanisms involved in vascular disorders.
- ▶ Genetic basis of vascular pathologies: atherothrombosis, aortic aneurism and chronic venous insufficiency.
- ▶ New, more effective targets. Research into pharmacologic targets for NSAIDs of cardiovascular interest.

Cancer Research

- ▶ Role of inflammatory mediators in head and neck squamous carcinoma and in regulating gene expression in tumour relapse.

Challenges

- ▶ Increase cooperation between clinicians and experimental researchers to enhance the translation level of our research by setting up training programmes for clinical physicians.
- ▶ Increase funding sources by establishing collaborations with the industrial sector.
- ▶ Improve research quality in terms of standard evaluation indexes.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Ear, Nose and Throat Cancers (Xavier León, Jacinto Gracia and Miquel Quer).
- ▶ Genomics of Complex Diseases (José Manuel Soria, PI).
- ▶ Thrombosis and Haemostasis (Juan Carlos Souto, PI).
- ▶ Atherosclerosis and Vascular Biology (José Martínez, PI).
- ▶ Inflammation and Vascular Remodelling (Cristina Rodríguez, PI).
- ▶ General and Digestive Surgery (Eduard Targarona and Carmen Balagué).
- ▶ Cerebrovascular Diseases (Joan Martí Fàbregas, PI; Pol Camps Renom, Elena Jiménez Xarrie)

External Collaborations

- ▶ Dra. Mercedes Salaices. Universidad Autónoma de Madrid, Spain.
- ▶ Dr. Juan Miguel Redondo. CNIC, Madrid, Spain.
- ▶ Dr. Francesc-Xavier Avilés-Jurado. Otorhinolaryngology Department, Hospital Universitari de Tarragona Joan XXIII, Institut d'Investigació Sanitària Pere Virgili, Universitat Rovira i Virgili, Tarragona, Spain.
- ▶ Prueba piloto de un programa de cribado poblacional de aneurismas de aorta abdominal realizada en atención primaria mediante ecografía. PERIS: SLT 002/16/00441.

Active Grants

- ▶ María Galán Arroyo. Contratos Miguel Servet I 2015. MS15/00126. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500.00 €.
- ▶ María Galán Arroyo. Novel therapeutic strategies to limit the progression of abdominal aortic aneurysm: targeting endoplasmic reticulum and mitochondrial stress. CP15/00126. Instituto de Salud Carlos III. Duration: 2016-2018. 121,500.00 €.
- ▶ Luis Vila Navarro. Red Cardiovascular. RD12/0042/0051. Instituto de Salud Carlos III. Duration: 2013-2017. 201,869.56 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ María Galán Arroyo. Nuevas dianas terapéuticas para el tratamiento del AAA y de la cardiopatía hipertensiva: proteínas implicadas en el estrés del retículo y en la disfunción mitocondrial. PI17/01837. Instituto de Salud Carlos III. Duration: 2018-2020. 102,000.00 €.
- ▶ Mercedes Camacho. Grup de Recerca Consolidat SGR 1234. Generalitat de Catalunya. Duration: 2017-2019.

Note: Total amount granted to PI. It does not include indirect costs.

*TIF: 25.392 **MIF: 3.63

Scientific Production

Galan M., Varona S., Guadall A., Orriols M., Navas M., Aguiló S., De Diego A., Navarro M.A., Garcia-Dorado D., Rodríguez-Sinovas A., Martínez-González J., Rodríguez C., Lysyl oxidase overexpression accelerates cardiac remodeling and aggravates angiotensin II-induced hypertrophy (2017) *FASEB J*, 31 (9), 3787-3799.

IF: 5.595

Gomez-Jabalera E., Bellmunt Montoya S., Fuentes-Camps E., Escudero Rodríguez J.R., Age-adjusted D-dimer for the diagnosis of deep vein thrombosis (2017) *PHLEBOLOGY*.

IF: 1.513

Marin-Garcia M., Benseny-Cases N., Camacho M., Suades J., Barnadas-Rodríguez R., Camacho Pérez De Madrid M., Low-toxicity metallosomes for biomedical applications by self-assembly of organometallic metallo-

surfactants and phospholipids (2017) *CHEM COMMUN*, 53 (60), 8455-8458.

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Pardo L., Valero C., Lopez M., Garcia J., Camacho M., Quer M., Leon X., The prognostic value of pretreatment platelet count in patients with head and neck squamous cell carcinoma (2017) *AURIS NASUS LARYNX*, 44 (3), 313-318.

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Soto B., Gallastegi-Mozos T, Rodríguez C, Martínez-González J, Escudero JR, Vila L, Camacho M. Circulating CCL20 as a New Biomarker of Abdominal Aortic Aneurysm (2017) *Sci Rep*, 7(1), 17331.

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Soto B., Vila L., Dilme J.F., Escudero J.R., Bellmunt S., Camacho M., Increased Peak Wall Stress, but Not Maximum Diameter, Is Asso-

ciated with Symptomatic Abdominal Aortic Aneurysm (2017) *EUR J VASC ENDOVASC*, 54 (6), 706-711.

IF: 3.877

Valero C., Pardo L., Lopez M., Garcia J., Camacho M., Quer M., Leon X., Pretreatment count of peripheral neutrophils, monocytes, and lymphocytes as independent prognostic factor in patients with head and neck cancer (2017) *HEAD NECK-J SCI SPEC*, 39 (2), 219-226.

IF: 2.471

Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases



Coordinator

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Members

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Casani Arazo, Laura ICCC
Catalina García, Pablo ICCC
Chiva Blanch, Gemma ICCC
Crespo Asensio, Javier ICCC
Escate Chávez, Oscar Rafael ICCC
Florit Carbonell, Sergi ICCC
Gallinat O'Callaghan, Alexandre ICCC
García García, Olaya ICCC
Gerbolés Freixas, Esther ICCC
Huertas Segarra, Sònia ICCC
Juan Babot, Josep Oriol ICCC
Juncosa Rosalén, Ángel Luis ICCC
Lambert Goitia, Carmen ICCC
López Bernal, Sergio ICCC
Moreno Gómez, Josep ICCC
Nasarre Miarnau, Laura Rosa ICCC
Segalés Aguilar, Estefanía ICCC
Velasco Murcia, María Ángeles ICCC
Vilahr Garcia, Gemma ICCC

Main Lines of Research

- ▶ Physiopathological role of LRP family proteins in chronic diseases.
- ▶ Role of lipids and inflammation in atherosclerosis and ischemic heart disease.
- ▶ Vascular impact of ischaemia and angiogenesis in heart disease. Cell therapy.
- ▶ Research into new targets to inhibit the transformation of silent atherosclerosis into ischaemic syndromes: tissue-factor-mediated angiogenic switch.

Challenges

- ▶ Broaden the experimental focus to include transgenic animal models with/without cardiovascular risk factors in order to proceed to in-depth analysis of molecules involved in the modulation of new proteins identified by post-genomic technologies and systems biology approaches.
- ▶ Maintain present scientific networks and establish new multidisciplinary collaborations.
- ▶ Increase international funding for the extension of new and established platforms in order to implement proposed activities.

Active Grants

- ▶ Lina Badimon Maestro. Red de Terapia Celular (TerCel). RD16/0011/0018. Instituto de Salud Carlos III. Duration: 2017-2021. 66,502.00 €.
- ▶ Gemma Vilahr Garcia. L'administració intravenosa d'un inhibidor modificat de l'HMG-COA-reductasa: una prometedora estratègia cardioprotectora en la malaltia isquèmica del cor, desentranar beneficis i mecanismes d'acció. MARATO 20154310. Fundació La Marató de TV3. Duration: 2016-2019. 154,150.00 €.
- ▶ Maria Montserrat Borrell Pages. Aterotrombosis y su inhibición: LRP5/WNT en la respuesta aguda a la lesión vascular. PI16/02014. Instituto de Salud Carlos III. Duration: 2017-2019. 53,500.00 €.
- ▶ Carmen Lambert Goitia. Project SAF2013-42962 LB. BES2014-068269. Ministerio de Economía y Competitividad. Duration: 2015-2019. 83,900.00 €.
- ▶ Lina Badimon Maestro (CP IP). Factor tisular no-coagulante y angiogenesis terapéutica para reparar el tejido isquémico. SAF2016-76819-R. Ministerio de Economía y Competitividad. Duration: 2016-2019. 320,000.00 €.
- ▶ Gemma Chiva Blanch. Patologia molecular i terapèutica de les malalties aterotrombòtiques i isquèmiques. IJCI-2015-26358. Ministerio de Economía y Competitividad. Duration: 2017-2019. 64,000.00 €.
- ▶ Lina Badimon Maestro. Investigación y desarrollo clínico de una nueva molécula para el control de peso y prevención de la obesidad. RTC-2016-5317-1. Ministerio de Economía y Competitividad. Duration: 2016-2018. 180,000.40 €.
- ▶ Gemma Vilahr Garcia. Remodelado estructural y funcional de las partículas HDL y su implicación en la salud cardiovascular: identificación de moduladores con potencial terapéutico. SAF2015-71653-R. Ministerio de Economía y Competitividad. Duration: 2016-2018. 90,000.00 €.
- ▶ Lina Badimon Maestro. Validación de un nuevo y original biomarcador, ApoJ-glyc, para el diagnóstico y la estratificación del riesgo en pacientes con isquemia miocárdica. DTS16/00194. Instituto de Salud Carlos III. Duration: 2017-2018. 70,500.00 €.
- ▶ Lina Badimon Maestro. Patologia molecular i terapèutica de les malalties aterotrombòtiques. 2017 SGR 1480. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 61,192.00 €.
- ▶ Lina Badimon Maestro. Identificación de nuevos biomarcadores en el manejo de la insuficiencia cardiaca. Sociedad Española de Cardiología (SEC). Duration: 2016-2017. 20,000 €.
- ▶ Lina Badimon Maestro. Moderate beer intake effects of the inflammasome pathway and TLR-mediated immunomodulation in humans. The European Foundation for Alcohol Research (ERAB Grants). Duration: 2017-2018. 65,000 €.
- ▶ Lina Badimon Maestro. CIBER Enfermedades Cardiovasculares. (CIBERCV). CB16/11/00411. Instituto de Salud Carlos III. 188,362 €.

Note: Total amount granted to PI. It does not include indirect costs.

Collaborations with other IIB Sant Pau Groups

- ▶ Clinical and Translational Cardiology (PI: Juan Cinca).
- ▶ Biomarkers for Cardiovascular Disease (PI: Teresa Padró).
- ▶ Cerebrovascular Diseases (PI: Joan Martí Fábregas).
- ▶ Endocrinology, Diabetes and Nutrition (PI: Alberto de Leiva).
- ▶ Pharmacological Research in Humans (PI: Rosa M. Antonijoan).
- ▶ Angiology, Vascular Biology and Inflammation (PI: Luis Vila)
- ▶ Radiodiagnosics (PI: Antoni Capdevila)
- ▶ Molecular Basis of Cardiovascular Risk (PI: Joan Carles Escolà)

National Collaborations

- ▶ Department of Internal Medicine, Hospital Clínic, Barcelona (Ramón Estruch).
- ▶ Department of Cardiology, Thorax Institute, Hospital Clínic, University of Barcelona (Salvatore Brugaletta, Victoria Martín-Yuste, Clarissa Cola, Manel Sabaté).
- ▶ Fundación Hipercolesterolemia Familiar. Madrid (Pedro Mata, Rodrigo Alonso, Leopoldo Pérez-Isla).
- ▶ Cell Therapy Network (TerCel), RD12/0019.
- ▶ Cardiovascular Research Network (RIC), RD12/0042.
- ▶ Department of Cardiology, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia (MA Esteve-Pastor).
- ▶ Department of Cardiology, Hospital Universitario San Juan, Alicante (V. Bertomeu-Martínez).
- ▶ Department of Cardiology, Hospital La Paz, Madrid (I Roldán-Rabadán, R Peinado).
- ▶ Department of Cardiology (A Cequier-Fillat), Internal Medicine Service (F Formiga), Hospital de Bellvitge, Barcelona.
- ▶ Department of Cardiology, Hospital Universitario A Coruña, La Coruña (J Muñiz-García).
- ▶ Department of Cardiology, Hospital Universitario Reina Sofía, Córdoba (M. Anguita-Sánchez).
- ▶ Department of Preventive Medicine and Public Health, University of Valencia, Valencia (D. Corella).
- ▶ Human Nutrition Unit, Hospital Universitari Sant Joan, Institut d'Investigacions Sanitàries Pere Virgili, Universitat Rovira i Virgili, Reus (J Salas-Salvadó).
- ▶ Department of Cardiology, University Hospital Araba, Vitoria (F Arós).
- ▶ Department of Epidemiology and Public Health, University of Navarra, Pamplona (MA Martínez-González).
- ▶ Lipid Clinic, Endocrinology and Nutrition Service, Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS), Hospital.
- ▶ Clinic, University of Barcelona, Barcelona, Spain (E Ros).

- ▶ Institut Hospital del Mar d'Investigacions Mèdiques (IMIM), Barcelona (M. Fitó).
- ▶ Servicio de Medicina Interna, Hospital Universitario La Paz, Madrid (MA Quesada, J Camacho Siles).
- ▶ Invasive Cardiology Department Puerta de Hierro Hospital, Majadahonda, Madrid, Spain (J Goicolea).
- ▶ Clinical Laboratory L'Hospitalet, Barcelona, Spain (G Padrós).

International Collaborations

- ▶ Experimental, Diagnostic and Speciality Medicine, University of Bologna, Italy (Raffaele Bugiardini).
- ▶ School of Healthcare Science, John Dalton Building, Manchester Metropolitan University, UK (Mark Slevin).
- ▶ Atherothrombosis Research Unit, Zena and Michael A. Wiener Cardiovascular Institute, Mount Sinai School of Medicine, New York, USA (Juan José Badimon).
- ▶ Department of Clinical Biochemistry and Immunohematology, Faculty of Health Sciences, University of Talca, Chile (Ivan Palomo).
- ▶ Centre for Clinical Heart Research, Department of Cardiology, Oslo University Hospital Ullevål, Oslo, Norway (Ingebjørg Seljeflot).
- ▶ Department of Food and Nutrition, Universidade Federal de Santa Maria, Palmeira das Missões, Brazil; Program of Postgraduate in Gerontology, Universidade Federal de Santa Maria, Santa Maria, Brazil (Patricia Chagas).
- ▶ Department of Pharmacology, Catholic University School of Medicine, Rome, Italy (Carlo Patrono).
- ▶ Engineering and Materials Research Centre, Manchester Metropolitan University, Manchester, M1 5GD, United Kingdom (Amir Keshmiri).
- ▶ Department of NeuroFarBa, C.I.M.M.B.A., University of Florence, Viale Pieraccini, 6, Florence 50139, Italy (Elisabetta Cerbai).
- ▶ Department of Epidemiology and Prevention, IRCCS Istituto Neurologico Mediterraneo Neuromed, 86077 Pozzilli, Italy (Giovanni de Gaetano).
- ▶ TACTICS - Transnational Alliance for Regenerative Therapies in Cardiovascular Syndromes (Fernández-Avilés F, Sanz-Ruiz R, Climent AM, Badimon L, Charron D, Fuster V, Janssens S, Kastrup J, Kim HS, Lüscher TF, Martin J, Menasché P, Simari R, Stone GW, Terzic A, Willerson JT, Wu J).
- ▶ Cardiology Department, University of Medicine and Pharmacy "Carol Davila" of Bucharest, Emergency Clinical Hospital of Bucharest, 8, Calea Floreasca, Sector 1, 014461 Bucuresti, Romania (Maria Dorobantu).
- ▶ Cardiovascular and Metabolic Diseases, Innovative Medicines and Early Development Biotech Unit, AstraZeneca, Mölndal, Sweden (Leif Carlsson).
- ▶ Division of Hematology/Oncology, Department of Internal Medicine, University of Cincinnati College of Medicine, Cincinnati, OH, USA (Vladimir Y Bogdanov).

- ▶ Lina Badimon Maestro. Validation of apo j-glyc as a biomarker of ischemic damage, 2016 PROD 00043. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 99,500.00 €.
- ▶ Gemma Arderiu Marquès. Enfermedad arterial periférica: potenciar la capacidad angiogénica de las células madre mesenqui-

males, PI17/01321. Instituto de Salud Carlos III. Duration: 2018-2020. 74,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases

Books or chapters with ISBN

- ▶ Badimon L, Tanner FC, Camici GG, Vilahur G. Pathophysiology of thrombosis (Section V / Chapter 18). In: Krams R, Bäck M. ESC Textbook of Vascular Biology. Oxford University Press, United Kingdom; pp: 273-290; 2017. ISBN: 9780198755777.

Awards

- ▶ Gemma Chiva 2017 Young Investigator Award for excellence in Clinical Research of the European Society for Clinical Investigation (ESCI).
- ▶ Lina Badimon. Visiting Professorship Manchester Metropolitan University (2017).
- ▶ Lina Badimon. Honorary Member of the Hungarian Society of Cardiology (2017).
- ▶ Lina Badimon. Member of the Scientific Advisory Board of the International Aspirin Foundation. England (2017).
- ▶ Lina Badimon. Member of the Scientific Advisory Committee of the Fundación GADEA para la Ciencia (2017).

Patents

- ▶ Lina Badimon Maestro, Gemma Vilahur García. Prevention or reduction is ischemia-related damage. EP17164137. European Union. 31/03/2017.
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- ▶ Lina Badimon Maestro, José Martínez González. Procedimiento de identificación de potenciales compuestos moduladores de la actividad de NOR-1, nueva diana diagnóstica y terapéutica de enfermedades cardiovasculares, 2288330. International. 26/08/2009.
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Transfer Products

- ▶ Co-founder of the Spin-Off "Glycardial Diagnostics SL" September 2017.

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M.F., Tamargo J., Torbicki A., Suter T.M., Zamorano J.L., Aboyans V., Achenbach S., Agewall S., Badimon L., Baron-Esquivias G., Baumgartner H., Bax J.J., Bueno H., Carerj S., Dean V., Erol C., Fitzsimons D., Gaemperli O., Kirchhof P., Kolh P., Lancellotti P., Lip G.Y.H., Nihoyannopoulos P., Piepoli M.F., Ponikows-

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Other
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- ▶ Badimon L, Vilahur G. Optimización del tratamiento antiagregante del paciente tras un infarto agudo de miocardio. Efectos cardioprotectores del ticagrelor. *Revista Española de Cardiología, Supl. 17(B)*, 3-8; 2017.
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Biomarkers for Cardiovascular Disease



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Main Lines of Research

- ▶ Identification of new biomarkers of atherothrombosis and ischaemic heart disease with potential use in diagnosis and prognosis research is based on cell culture studies, animal models of cardiovascular disease and human samples of patients with coronary heart disease risk factors.

Challenges

- ▶ Advance research aiming to identify and characterize new biomarkers of tissue remodelling, vascular injury, atherothrombotic disease and/or ischaemic, coronary and cerebrovascular syndromes using postgenomic techniques.
- ▶ Generate new information on potential soluble biomarkers (serum, plasma, urine) and in microvesicles /exosomes circulating in blood/urine, as well as in blood and/or vascular cells through proteomic and lipidomic studies based on liquid chromatography and bidimensional electrophoresis, mass spectrometry (MALDI/ToF; linear ion trap) and antigen-antibody based assays, as well as transcriptomic studies (mRNA, miRNA) using arrays systems and real-time PCR.
- ▶ Validate biomarkers identified in the diagnosis and prognosis of cardiovascular and/or cerebrovascular disease using specific quantitative techniques (confocal microscope, ELISA, multiplex assays, etc).
- ▶ Characterize molecular and functional mechanisms for selected biomarkers in cardiovascular pathology and myocardial remodeling (biology of systems).

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Molecular Pathology and Therapeutic of Ischemic and Atherothrombotic Diseases (PI: Lina Badimon; Gemma Vilahur)
- ▶ Pharmacological Research in Humans (PI: Rosa M. Antonijoan)
- ▶ Clinical and Translational Cardiology (PI: Juan Cinca; Xavier Garcia-Moll, Alessandro Sionis)
- ▶ Molecular Basis Cardiovascular Risk (PI: Francisco Blanco Vaca; Joan Carles Escolà)

National Collaborations

- ▶ Fundación Hipercolesterolemia Familiar. Madrid (Pedro Mata, Rodrigo Alonso, Leopoldo Pérez-Isla).
- ▶ Department of Internal Medicine. Hospital Clínic. Barcelona (Ramon Estruch).
- ▶ Internal Medicine Department Lipids and Vascular Risk Units, Bellvitge University Hospital, Hospitalet de Llobregat, Barcelona (Xavier Pinto).
- ▶ Internal Medicine Department, Bellvitge University Hospital, Hospitalet de Llobregat, Barcelona (Francesc Formiga).

- ▶ Department of Cardiology, Thorax Institute, Hospital Clínic, University of Barcelona, Spain (Salvatore Brugaletta, Victoria Martín-Yuste, Clarissa Cola, Manel Sabaté).
- ▶ Invasive Cardiology Department Puerta de Hierro Hospital. Majadahonda, Madrid (Javier Goicolea).
- ▶ Department of Rheumatology, Consorci Sanitari de Terrassa (CST), Terrassa, Barcelona (Carmen García-Gómez).
- ▶ Centre d'Atenció Primària Florida Sud. Direcció d'Atenció Primària Costa de Ponent-ICS. L'Hospitalet, Institut Universitari d'Investigació en Atenció Primària Jordi Gol (IDIAP Jordi Gol), Barcelona, Spain (Juan José Rodríguez).

International Collaborations

- ▶ Platelet Research Center, Faculty of Health Sciences, University of Talca, Chile (Ivan Palomo, Eduardo Fuentes).
- ▶ School of Healthcare Science, Manchester Metropolitan University, Manchester, United Kingdom (Mark Slevin).
- ▶ Division of Hematology/Oncology, Department of Internal Medicine, University of Cincinnati College of Medicine, Cincinnati, OH, USA (Vladimir Y Bogdanov).

Active Grants

- ▶ Maria Teresa Padró Capmany. Diagnòstic precoç d'insuficiència renal durant insuficiència cardíaca aguda (EDRIAHF). MARATÓ 20153110. Fundació La Marató de TV3. Duration: 2016-2019. 155,700.00 €.
- ▶ Maria Teresa Padró Capmany. Remodelado miocárdico post-infarto: regulación por la matriz extracelular y el sistema-c3 del complemento. PI16/01915. Instituto de Salud Carlos III. Duration: 2017-2019. 141,500.00 €.
- ▶ Maria Teresa Padró Capmany (CO IP). Investigación y desarrollo clínico de una nueva molécula para el control de peso y prevención de la obesidad. RTC-2016-5317-1. Ministerio de Economía y Competitividad. Duration: 2016-2018.

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- ▶ Lina Badimon, Judit Cubedo, Vilahur G, Teresa Padró. Prevention and/or treatment of ischemia or ischemia/reperfusion injury. EP16382111.9. Priority: Europe. 14/03/2016.
- ▶ Lina Badimon, Judit Cubedo, Teresa Padró. Apolipoprotein J isoforms as biomarkers of organ damage. P201030168. Priority: Spain. 26/08/2011.

Transfer Products

- ▶ Co-founder of the Spin-Off "Glycardial Diagnostics SL". September 2017.

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IF: 18.880

*Total Impact Factor **Mean Impact Factor

Biomarkers for Cardiovascular Disease

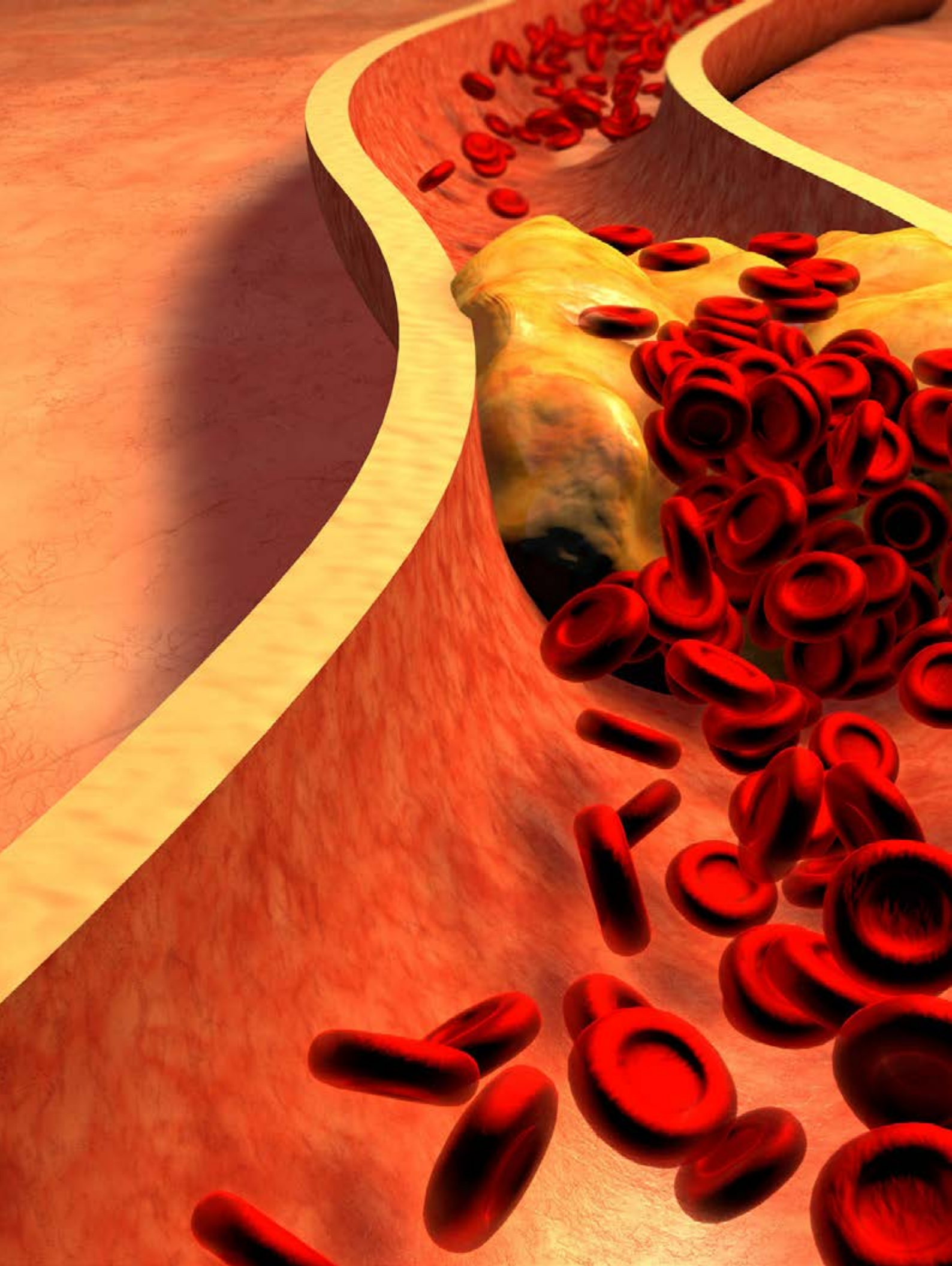
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Scientific Production

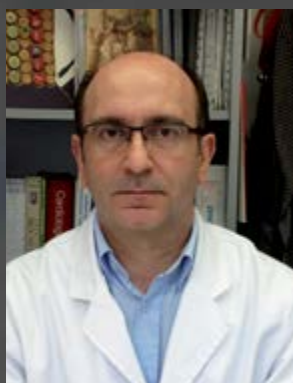
Vilahur G., Onate B., Cubedo J., Bejar M.T., Arderiu G., Pena E., Casani L., Gutierrez M., Capdevila A., Pons-Llado G., Carreras F., Hidalgo A., Badimon L., Allogenic adipose-derived stem cell therapy overcomes ischemia-induced microvessel rarefaction in the myocardium: Systems biology study (2017) STEM CELL RES THER, 8 (1).
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Other Publications

- ▶ Badimon L, Suades R, Arderiu G, Peña E, Chiva-Blanch G, Padró T. Microvesicles in Atherosclerosis and Angiogenesis: From Bench to Bedside and Reverse. FRONT CARDIOVASC MED. 2017 Dec 18; 4: 77.
- ▶ Padro T, Badimon L. Investigación en enfermedad cardiovascular femenina. DIABETES PRÁCTICA 08 (Supl Extr 5): 12-17; 2017.



Atherosclerosis and Vascular Biology



Coordinator

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Members

Alonso Nieto, Judit CIBERCV
Martí Pàmies, Ingrid ICCV
Orriols Martins, Mar CIBERCV
Varona Álvarez, Saray CSIC

Main Lines of Research

- ▶ Identification and characterization of master genes involved in the onset, development and complication of ischaemic heart disease (IHD), abdominal aortic aneurysm (AAA) and cardiac hypertrophy.
- ▶ Mechanisms involving nuclear receptors in IHD, AAA and cardiac hypertrophy.
- ▶ Identification and validation of new targets for diagnosis, prognosis and treatment of cardiovascular diseases.
- ▶ Development of new (genetically modified) animal models for IHD, AAA and cardiac hypertrophy.

Challenges

- ▶ Incorporate new PhD and postdoctoral students as well as staff investigators to preserve the core group and implement new technical expertise and experimental approaches.
- ▶ Find affinities with other IIB Sant Pau groups in order to increase critical mass and implement joint strategies to optimize resources and access to alternative funding sources.
- ▶ Consolidate present relationships with national collaborators and expand our international collaborations.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Inflammation and Vascular Remodelling (PI: Cristina Rodríguez).
- ▶ Angiology, Vascular Biology and Inflammation (PI: Luis Vila).
- ▶ Regulation of Cardiac Rhythm and Contraction (PI: Leif Hove-Madsen).
- ▶ Pablo García de Frutos (IIBB-CSIC).
- ▶ Francisco Marín. Hospital Clínico Universitario Virgen de la Arrixaca, Murcia.
- ▶ Jesús Osada. Universidad de Zaragoza.
- ▶ Mercedes Salaices. Universidad Autónoma de Madrid, UAM.
- ▶ Vicente Andrés García. CNIC.

External Collaborations

- ▶ Francisco Sánchez Madrid. Hospital de la Princesa-UAM.
- ▶ Alicia G. Arroyo. Centro Nacional de Investigaciones Cardiovasculares, CNIC.
- ▶ David García Dorado. Vall d'Hebron Research Institute, VHIR.
- ▶ Eduardo Rodríguez Boulán (Cornell University).
- ▶ Roxana Carare (University of Southampton).
- ▶ Anna Planas (IIBB-CSIC).
- ▶ Victoria Cachafeiro. Universidad Complutense de Madrid, UCM.
- ▶ Lisardo Boscá. Instituto de Investigaciones Biomédicas Alberto Sols, CSIC-UAM.

Active Grants

- ▶ José Martínez González. The nuclear receptor NOR-1 in cardiac and vascular remodeling: analysis of pathological mechanisms and validation of new animal models useful for pre-clinical studies. MINECO SAF2015-64767-R. Duration: 2016-2018.
- ▶ José Martínez González, Francisco Sánchez Madrid. Immunoregulatory molecules and miRNAs as targets in coronary heart disease and acute coronary syndrome Fundació La Marató de TV3 (Ref. 20152330 31). Duration: 2016-2018.
- ▶ José Martínez González. CIBER de Enfermedades Cardiovasculares (Ref. grupo CB16/11/00257) ISCIII-MINECO. Duration: from 2017.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Martí-Pàmies I, Cañes L, Alonso J, Romero JM, Rodríguez C, Martínez-González J. Special mention for the oral communication: NOR1 en el aneurisma de aorta abdominal (AAA): generación de un nuevo modelo animal de AAA experimentalXXX Congreso de la Sociedad Española de Aterosclerosis (SEA). (31 May-2 June 2017, Cádiz)

Theses

- ▶ Ingrid Martí Pàmies. NOR-1 en el remodelat cardiovascular: identificació de gens diana i caracterizació d'animals transgènics per a NOR-1 com a models en patologies cardiovasculars. Universitat de Barcelona. Directors: José Martínez González, Cristina Rodríguez. Date of defense: 10/03/2017.

Patents

- ▶ José Martínez González, Cristina Rodríguez Sinovas, Ingrid Martí Pàmies. Modelo animal para aneurisma aórtico y sus usos. P201631548. Spanish patent. 07/12/2016.

*TIF: 28.700 **MIF: 5.74

Scientific Production

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Martinez-Revelles S., Garcia-Redondo A.B., Avendano M.S., Varona S., Palao T., Orriols M., Roque F.R., Fortuno A., Touyz R.M., Martinez-Gonzalez J., Salaces M., Rodriguez C., Briones A.M., Lysyl Oxidase Induces Vascular

Oxidative Stress and Contributes to Arterial Stiffness and Abnormal Elastin Structure in Hypertension: Role of p38MAPK (2017) ANTI-OXID REDOX SIGN, 27 (7), 379-397.

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Marti-Pamies I., Canes L., Alonso J., Rodriguez C., Martinez-Gonzalez J., The nuclear receptor NOR-1/NR4A3 regulates the multi-functional glycoprotein vitronectin in human vascular smooth muscle cells (2017) FASEB J, 31 (10), 4588-4599.

IF: 5.595

Orriols M., Gomez-Puerto M.C., Ten Dijke P, BMP type II receptor as a therapeutic target in pulmonary arterial hypertension (2017) CELL MOL LIFE SCI, 1-17.

IF: 6.721

Soto B, Gallastegi-Mozos T, Rodríguez C, Martínez-González J, Escudero JR, Vila L, Camacho M. Circulating CCL20 as a New Biomarker of Abdominal Aortic Aneurysm. (2017) SCI REP. 2017 Dec 11;7(1):17331.

IF: 4.259

Other Publications

- ▶ Varona V, García-Redondo AB, Martínez-González J, Salaces M, Briones AM, Rodríguez C. La sobre expresión vascular de la lisil oxidasa altera la estructura de la matriz extracelular e induce estrés oxidativo. CLIN INVESTIG ARTERIOSCLER. 2017;29:157-165.

Regulation of Cardiac Rhythm and Contraction



Coordinator

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Members

Llach Martínez, Ana IR
Tarifa Lora, Carmen ICC

Main Lines of Research

- ▶ Receptor-mediated changes in intracellular calcium homeostasis in atrial fibrillation.
- ▶ Contribution of genetic variants to electrical remodelling and cardiac arrhythmogenesis.
- ▶ Effects of development and ageing on calcium handling in cardiac myocytes.
- ▶ Mathematical modeling of calcium homeostasis and electrical activity in cardiac myocytes.

Challenges

- The goal is to consolidate the group as a reference in research on calcium handling in atrial fibrillation and to establish it within other lines of research by including emerging technology and fields of research. Specifically we aim to:
- ▶ Develop computational tools and models to improve the analysis and understanding of intracellular calcium handling in cardiac myocytes.
 - ▶ Incorporate emerging technology such as stretching and measurements of force development in single cardiomyocytes.
 - ▶ Consolidate current national and international collaborations and establish new strategic collaborations within emerging fields of research such as the use of super-resolution fluorescence imaging (STORM, STED-techniques) and the detection and role of Reactive Oxygen Species in diseased cardiomyocytes.
 - ▶ Achieve international funding for incorporation of scientific expertise and participation in multidisciplinary international research projects.

Collaborations with other IIB Sant Pau Groups

- ▶ Clinical and Translational Cardiology (PI: Juan Cinca)
- ▶ Lipids and Cardiovascular Pathology (PI: Vicenta Lorente)
- ▶ Atherosclerosis and Vascular Biology (PI: José Martínez)

National Collaborations

- ▶ Diego Franco, Amelia Aranega. Departamento de Biología Experimental, Universidad de Jaén.
- ▶ Francisco Ciruela, Departament de Patologia i Terapèutica Experimental, Institut d'Investigació Biomèdica de Bellvitge (IDIBELL), Universitat de Barcelona.
- ▶ Blas Echebarria. Departament de Física Aplicada, Universitat Politècnica de Catalunya.
- ▶ Raul Benítez. Enginyeria de Sistemes, Automàtica i Informàtica Industrial, Universitat Politècnica de Catalunya.
- ▶ Vicente Andrés. Fisiopatología Cardiovascular Molecular y Genética, CNIC.
- ▶ Leif Hove-Madsen, Research Collaborator at the Spanish National Cardiovascular Research Network CIBERCV.

International Collaborations

- ▶ SR Wayne Chen. Department of Physiology and Pharmacology, University of Calgary, Canada.
- ▶ Glen F Tibbits. Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Burnaby & Child and Family Research Institute, Vancouver, Canada.
- ▶ Edwin Moore. Cardiovascular Research Group, University of British Columbia, Vancouver, Canada.

Active Research Grants coordinated by Cardiac Rhythm and Contraction Group

- ▶ Marató TV3 2015-2030. Coordinated research project on "Adenosine receptors as new targets for the treatment of atrial fibrillation: Biomarker, Risk-Stratification and Therapy". 1/4/2016 - 31/3/2019.
- ▶ SAF2014-58286-C2-1-R. Coordinated research project on "Identification of molecular and Cellular Electrophysiological Risk factors That confer patients a high risk for Atrial fibrillation". 1/1/2015 - 31/8/2018.
- ▶ SGR-2014-1465GRE. Emerging research group on "Analysis and Control of Cardiac Rhythm". 1/1/2015 - 31/12/2017.

Collaborations

Grants
Awarded
in 2017

- ▶ Ana Llach Martínez. Receptors de rianodina com a nova diana per al tractament de la fibril·lació auricular. SLT002/16/00074. Departament de Salut. Duration: 2017-2019. 103,907.80 €.

Note: Total amount granted to PI. It does not include indirect costs.

Lipids and Cardiovascular Pathology



Coordinator

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Members

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Bornachea Gómez, Olga CSIC
De Gonzalo Calvo, David IR
Nasarre Miarnau,
Laura Rosa ICCC
Veja Badenas, Angela IR

Main Lines of Research

- ▶ Molecular mechanisms involved in the modulation of LRP1 by cardiovascular risk factors.
- ▶ Impact of LRP1 on vascular and myocardial cholesterol accumulation.
- ▶ Impact of lipoproteins on LRP1-Intracellular signal pathways under normoxic and hypoxic conditions.
- ▶ Alterations in LRP1 expression and LRP1-intracellular signal pathways in hypoxia/ischaemia in in vitro and in vivo models.
- ▶ Lipids and diabetic cardiomyopathy.
- ▶ Lipids and breast cancer.
- ▶ LRP1 and inflammation.
- ▶ Circulating non-coding RNAs as biomarkers of cardiovascular disease.
- ▶ Role of non-coding RNAs in vascular lipid accumulation.
- ▶ Role of non-coding RNAs in myocardial lipid accumulation.

Challenges

- ▶ Integrate genomic and functional in vivo studies to validate LRP1 as a new therapeutic target in cardiometabolic diseases
- ▶ Maintain and amplify relationship with IIB Sant Pau groups regarding translation in this cardiometabolism.
- ▶ Maintain and strengthen national and international collaborations to set up future applications for European funding.
- ▶ Establish collaborations with companies with the aim of developing new products useful for prognosis, diagnosis and treatment of cardiometabolic diseases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Cardiovascular Biochemistry (PI: Jordi Ordóñez)
- ▶ Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases (PI: Lina Badimon)
- ▶ Clinical and Translational Cardiology (PI: Juan Cinca)
- ▶ Metabolic Bases of Cardiovascular Risk (PI: Francisco Blanco)
- ▶ Molecular Bases of Disease (PI: Pablo Fuentes)
- ▶ Clinical Oncology (PI: Agustí Barnadas)
- ▶ Enrique Lerma (researcher of Molecular Pathology of Gineacologic Cancer)

National Collaborations

- ▶ Dr. Bayés-Genís. Grupo ICREC (Insuficiencia Cardíaca y Regeneración Cardíaca). Hospital Germans Trias i Pujol. Badalona.
- ▶ Eduardo Iglesias Gutiérrez. Grupo ITS (Intervenciones Traslacionales para la Salud). Universidad de Oviedo.
- ▶ Rocío Toro. Departamento de Medicina. Facultad de Medicina, Universidad de Cádiz.
- ▶ Antonio Zorzano. IRB Barcelona

- ▶ Dolors Serra. Facultat de Farmàcia. Universitat de Barcelona
- ▶ Joan Carles Laguna. Facultat de Farmàcia. Universitat de Barcelona
- ▶ Eduard Sabidó. Centre de Regulació Genòmica. Barcelona

International Collaborations

- ▶ Colette Lacabanne & Valerie Samouillan. Group Physique des Polymères, Institut Carnot, CIRIMAT, Université Paul Sabatier. Toulouse, France.
- ▶ Max Bown. Vascular Surgery group. Department of Cardiovascular Sciences University of Leicester, New England.
- ▶ Fulvia Ortolani. Department of Experimental Clinical Medicine. Università degli Studi di Udine. Italy.
- ▶ Gustavo Alberto Chiabrando. CIBICI-CONICET/FCQ-Universidad Nacional de Córdoba, Argentina.
- ▶ Claudia Huesca Gómez. Departamento de Biomedina Cardiovascular. Instituto Nacional de Cardiología "Ignacio Chávez". México D.F.

Other Collaborations

- ▶ Teresa Tarragó. Iproteos. Parc Científic. Barcelona. Spain.

Active Grants

- ▶ David de Gonzalo Calvo. Contractes "Sara Borrell" 2014. CD14/00109. Instituto de Salud Carlos III. Duration: 2015-2017. 89,598.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Concepción Vicenta Llorente Cortés, Seguiment de la cohort poblacional de l'estudi REGICOR: tendències en la incidència de malaltia cardiovascular, en la prevalença de factors de risc, identificació de nous mecanismes i biomarcadors predicits, i avaluació d'estratègies de prevenció. SLT002/16/00088. Departament de Salut. Duration: 2017-2019. 106,212.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Extraordinary Doctorate Award of the academic year 2015-16 to the thesis by Elena Revuelta López.

*TIF: 23.534 **MIF: 3.9223

Scientific Production

Cedo L., Santos D., Roglans N., Julve J., Pal-lares V., Rivas-Urbina A., Llorente-Cortes V., Laguna J.C., Blanco-Vaca F., Escola-Gil J.C., Human hepatic lipase overexpression in mice induces hepatic steatosis and obesity through promoting hepatic lipogenesis and white adipose tissue lipolysis and fatty acid uptake (2017) PLOS ONE, 12 (12).

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De Gonzalo-Calvo D., Quezada M., Campuzano O., Perez-Serra A., Broncano J., Ayala R., Ramos M., Llorente-Cortes V., Blasco-Turrion S., Morales F.J., Gonzalez P., Brugada R., Mangas A., Toro R., Familial dilated cardiomyopathy: A multidisciplinary entity, from basic screening to novel circulating biomarkers (2017) INT J CARDIOL, 228, 870-880.

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De Gonzalo-Calvo D., Cenarro A., Garlaschelli K., Pellegatta F., Vilades D., Nasarre L., Camino-Lopez S., Crespo J., Carreras F., Leta R., Catapano A.L., Norata G.D., Civeira F., Llorente-Cortes V., Translating the microRNA signature of microvesicles derived from human coronary artery smooth muscle cells in patients with familial hypercholesterolemia and coronary artery disease (2017) J MOL CELL CARDIOL, 106, 55-67.

IF: 5.123

De Gonzalo-Calvo D., Iglesias-Gutierrez E., Llorente-Cortes V., Epigenetic Biomarkers and Cardiovascular Disease: Circulating MicroRNAs Biomarcadores epigenéticos y enfermedad cardiovascular: los microARN circulantes (2017) REV ESP CARDIOL, 70 (9), 763-769.

IF: 3.408

De Gonzalo-Calvo D., Van Der Meer R.W., Rijzewijk L.J., Smit J.W.A., Revuelta-Lopez E., Nasarre L., Escola-Gil J.C., Lamb H.J., Llorente-Cortes V., Serum microRNA-1 and microRNA-133a levels reflect myocardial steatosis in uncomplicated type 2 diabetes (2017) SCI REP-UK, 7 (1).

IF: 3.745

Samouillan V., Revuelta-Lopez E., Soler-Botija C., Dandurand J., Benitez-Amaro A., Nasarre L., de Gonzalo-Calvo D., Bayes-Genis A., Lacabanne C., Llorente-Cortes V., Conformational and thermal characterization of left ventricle remodeling post-myocardial infarction (2017) BBA-MOL BASIS DIS, 1863 (6), 1500-1509.

IF: 4.979

AREA 2

Genetic, Metabolic Inflammatory Disease

70 Genetic Diseases

72 Metabolic Bases of Cardiovascular Risk

76 Inflammatory Diseases

78 Endocrinology, Diabetes and Nutrition

82 Pituitary Gland Disorders

86 Digestive Diseases

Genetic Diseases



Coordinator

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Members

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Eva Maria IR
Cornet Ciurana, Mònica FGS
Del Rio Conde, Elisabeth FGS
González Quereda,
Lidia CIBERER
Iturbe Ferreiro, Ana Isabel FGS
Lasa Laborde, Adriana Maria FGS
Marcos Fa, Francesc Xavier IR
Moron López, Sara FGS
Ortiz Losada, Esther IR
Rodríguez Fernández,
María José FGS
Salazar Blanco, Juliana CIBERER
Vencesla García, Adoración IR

Main Lines of Research

- ▶ Study of the clinical heterogeneity of genetic autosomal recessive transmission of waist dystrophy and autosomal dominant transmission.
- ▶ Spinal atrophy and SMN genes:
 - Studies of molecular pathology, disease mechanisms and SMN gene expression.
 - Identification of modifying genes.
 - Study of biomarkers for validation processing in spinal muscular atrophy.
 - Study of the neuromuscular junction in human development.
- Hereditary breast cancer and BRCA mutations:
 - Identification of mutations and genetic variants.
 - Molecular characterization of circulating tumor cells (CTCSS) through expression profiles in patients with breast cancer.
- Analysis of free circulating tumor DNA (cfDNA) as a predictor of response to the treatment of breast cancer.
- ▶ Pharmacogenetics: adverse reactions to medications.
- ▶ Congenital coagulopathies: molecular pathology of haemophilias.
- ▶ Duchenne and Becker muscular dystrophy: molecular pathology of DMD gene.

Challenges

Pharmacogenetics

- ▶ Colorectal and lung cancer treatments.
- ▶ Chronic inflammatory disease treatment.
- ▶ HIV infection treatment.

Muscular Dystrophies

- ▶ Post-transcriptional regulation of the dystrophin gene using nonsense-mediated decay analysis in DNA from patients with Duchenne muscular dystrophy.
- ▶ Genes associated with new phenotypic forms of limb girdle muscular dystrophy.
- ▶ Workflow development for the analysis of DMD gene by NGS techniques.

Hereditary Breast/Ovarian Cancer

- ▶ DNA studies to classify DNA variants found in the BRCA genes as pathogenic or neutral.
- ▶ CTCs as prognostic markers in patients with locally advanced and disseminated breast cancer.
- ▶ Workflow development for the analysis of BRCA1 and BRCA2 genes by NGS techniques.

Hereditary Motor Neurone Diseases

- ▶ Development of neuromuscular junction studies in health and disease.
- ▶ Broadening of the spectrum of motor neuron diseases to include bulbar and spinal muscular atrophy, distal muscular atrophies and amyotrophic lateral sclerosis.

Awards

- ▶ Ana Sebio García. Young Investigator Award. Gastrointestinal Group of the European Organisation for Research and Treatment of Cancer.

Grants Awarded in 2017

- ▶ Maria Pia Gallano Petit. Implementació de la medicina personalitzada basada en la genòmica en malalties minoritàries neurològiques no diagnosticades. SLT002/16/00174, Departament de Salut. Duration: 2017-2019. 12,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Active Grants

- ▶ Ana Sebio García. Contratos Juan Rodés 2014. JR14/00006. Instituto de Salud Carlos III. Duration: 2015-2018. 135,000.00 €.
- ▶ Lidia González Quereda. Implementación de la secuenciación masiva en el estudio de las Miopatías Congénitas y los Síndromes Miasténicos congénitos: un modelo de investigación traslacional en enfermedades raras. FMM 2015. Fundación Mutua Madrileña. Duration: 2015-2018. 74,200.00 €.
- ▶ Maria Pia Gallano Petit. Implementación de la secuenciación masiva en el estudio de Miopatías Congénitas y Síndromes Miasténicos congénitos: un modelo de investigación traslacional en enfermedades raras. PI15/01898. Instituto de Salud Carlos III. Duration: 2016-2018. 56,500.00 €.
- ▶ Pau Riera Armengol. Marcadors farmacogenètics de resposta/resistència a les teràpies biològiques (anti-EGFR) en càncer colorrectal. 2016 FI_B 00368. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2016-2019. 40,806.00 €.
- ▶ David Paez López-Bravo. Estudio farmacogenético fase II randomizado para evaluar eficacia y seguridad del esquema FOLFIRI con altas dosis de irinotecán (FOLFIRIAD) en pacientes con cáncer colorrectal metastásico de acuerdo con el genotipo UGT1A 1. EC11-336. Ministerio de Sanidad y Política Social. Duration: 2015-2017. 13,965.97 €.

Note: Total amount granted to PI. It does not include indirect costs.

*TIF: 52.877 **MIF: 5.287

Scientific Production

Arqueros C., Salazar J., Arranz M.J., Sebio A., Mora J., Sullivan I., Tobena M., Martin-Richard M., Barnadas A., Baiget M., Paez D., SPARC gene variants predict clinical outcome in locally advanced and metastatic pancreatic cancer patients (2017) *MED ONCOL*, 34 (8). **IF: 2.920**

Grasselli J., Elez E., Caratu G., Matito J., Santos C., Macarulla T., Vidal J., Garcia M., Vieitez J.M., Paez D., Falco E., Lopez Lopez C., Aranda E., Jones F., Sikri V., Nuciforo P., Fasani R., Tabernero J., Montagut C., Azuara D., Dienstmann R., Salazar R., Vivancos A., Concordance of blood- and tumor-based detection of RAS mutations to guide anti-EGFR therapy in metastatic colorectal cancer (2017) *ANN ONCOL*, 28 (6), 1294-1301. **IF: 13.926**

Lorente A.M.R., Moreno-Cid M., Rodriguez M.J., Bueno G., Tenias J.M., Roman C., Arias A., Pascual A., Meta-analysis of validity of echogenic intracardiac foci for calculating the risk of Down syndrome in the second trimester of pregnancy (2017) *TAIWAN J OBSTET GYNE*, 56 (1), 16-22. **IF: 1.029**

Natera-de Benito D., Topf A., Vilchez J.J., Gonzalez-Quereda L., Dominguez-Carral J., Diaz-Manera J., Ortez C., Bestue M., Gallano P., Dusl M., Abicht A., Muller J.S., Senderek J., Garcia-Ribes A., Muelas N., Evangelista T., Azuma Y., McMacken G., Paipa Merchan A., Rodriguez Cruz P.M., Camacho A., Jimenez E., Miranda-Herrero M.C., Santana-Artiles A., Garcia-Campos O., Dominguez-Rubio R., Olive M., Colomer J., Beeson D., Lochmuller H., Nascimento A., Molecular characterization

of congenital myasthenic syndromes in Spain (2017) *NEUROMUSCULAR DISORD*, 27 (12), 1087-1098. **IF: 2.487**

Paez D., Salazar R., Tabernero J., DPYD genotype-guided fluoropyrimidines dose: Is it ready for prime time? (2017) *ANN ONCOL*, 28 (12), 2913-2914. **IF: 13.926**

Perez-Gracia J.L., Sanmamed M.F., Bosch A., Patino-Garcia A., Schalper K.A., Segura V., Bellmunt J., Tabernero J., Sweeney C.J., Choueiri T.K., Martin M., Fusco J.P., Rodriguez-Ruiz M.E., Calvo A., Prior C., Paz-Ares L., Pio R., Gonzalez-Billalabeitia E., Gonzalez Hernandez A., Paez D., Piulats J.M., Gurrpide A., Andueza M., de Velasco G., Pazo R., Grande E., Nicolas P., Abad-Santos F., Garcia-Donas J., Castellano D., Pajares M.J., Suarez C., Colomer R., Montuenga L.M., Melero I., Strategies to design clinical studies to identify predictive biomarkers in cancer research (2017) *CANCER TREAT REV*, 53, 79-97. **IF: 8.122**

Sullivan I., Salazar J., Arqueros C., Andres M., Sebio A., Majem M., Szafranska J., Martinez E., Paez D., Lopez-Pousa A., Baiget M., Barnadas A., KRAS genetic variant as a prognostic factor for recurrence in resectable non-small cell lung cancer (2017) *CLIN TRANSL ONCOL*, 19 (7), 884-890. **IF: 2.392**

Vidal S., Brandi N., Pacheco P., Gerotina E., Blasco L., Trotta J.-R., Derdak S., Del Mar O'Callaghan M., Garcia-Cazorla A., *et al.* The utility of Next Generation Sequencing for

molecular diagnostics in Rett syndrome (2017) *SCI REP-UK*, 7 (1).

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Metabolic Bases of Cardiovascular Risk



Coordinator

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Tondo Colomer, Mireia FGS

Main Lines of Research

- ▶ HDL and susceptibility to diabetes, arteriosclerosis and breast cancer: this relationship is being analysed through the study of metabolic disorders, genetic modification, and dietary or drug intervention.
- ▶ Genetic determinants of metabolic factors of cardiovascular risk: dyslipidaemia, type 2 diabetes, hyperhomocysteinaemia.
- ▶ Positive health effects of phytosterols.
- ▶ Development, validation and application of new clinical laboratory methods in the field of metabolic and cardiovascular medicine.
- ▶ Relationship of epicardial fat, lipoprotein function and inflammation in the development of arteriosclerosis and diabetic cardiomyopathy.

Challenges

- ▶ To explore the effect of olive oil in reverse cholesterol transport in vivo and characterize the components responsible of this effect.
- ▶ Determine the pathogenic relevance of cholesterol metabolism impairment in diabetic retinopathy.
- ▶ To explore the anti-cancer mechanisms related to cholesterol metabolism, especially in breast and thyroid cancer.
- ▶ Preliminary identification of lipoprotein-associated active lipid biomarkers informative of heart damage in animal models of diabetes mellitus.
- ▶ To characterize the molecular basis of the anti-inflammatory effects of nicotinamide.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Estudio de las alteraciones del metabolismo intracelular del colesterol en el cáncer de mama y carcinoma epitelial de tiroides: Evaluación de estrategias terapéuticas basadas en la HDL. ISCIII (PI16/00139). Collaborators: Enrique Lerma, Eugenia Mato, Concepción Llorente-Cortés..

External Collaborations

- ▶ Dr. Jesús Osada. Universidad de Zaragoza and CIBEROBN. Zaragoza, Spain.
- ▶ Drs. Diego Gómez-Coronado and Miguel A. Lasunción. Hospital Ramón y Cajal and CIBEROBN, Madrid, Spain.
- ▶ Dr. Alberto Dávalos. IMDEA-Food. Madrid, Spain.
- ▶ Dr. Montserrat Fitó. IMIM and CIBEROBN. Barcelona, Spain.

- ▶ Dr. Annabel F. Valledor. Universitat de Barcelona. Barcelona, Spain.
- ▶ Dr. Luís Masana. Hospital Sant Joan de Reus and Universitat Rovira i Virgili and CIBERDEM. Reus, Spain.
- ▶ Dr. Manuel Vázquez-Carrera. Universitat de Barcelona and CIBERDEM. Barcelona, Spain.
- ▶ Dr. Joan Carles Laguna. Universitat de Barcelona. Barcelona, Spain.
- ▶ Dr. Jose Luís Martín-Ventura. Fundación Jimenez-Díaz and CIBERCV, Madrid, Spain.
- ▶ Drs. Fernando Civeira y Ana Cenarro. Hospital Clínico Universitario Miguel Servet and CIBERCV. Madrid, Spain.
- ▶ Dr. Petri Kovanen. Wihuri Research Institute. Helsinki, Finland.
- ▶ Dr. Matti Jauhiainen. National Institute for Health and Welfare. Helsinki, Finland.
- ▶ Dr. Srinu Reddy. Department of Medicine, UCLA. CA, US

Active Grants

- ▶ Josep Julve Gil. Contratos Miguel Servet 2013 - Tipo I. MS13/00070. Instituto de Salud Carlos III. Duration: 2014-2019. 202,500.00 €.
- ▶ Josep Julve Gil. Molecular studies of monogenic familial dyslipemias and construction of a diagnostic/prognosis criteria in mutation-negative patients with familial hypercholesterolemia. CP13/00070. Instituto de Salud Carlos III. Duration: 2014-2017. 121,500.00 €.
- ▶ Francisco Blanco Vaca. Avances en el diagnóstico molecular de pacientes con dislipemias hereditarias, con especial referencia a la base poligénica de algunas de ellas y a la hipercolesterolemia familiar. PI14/01648. Instituto de Salud Carlos III. Duration: 2015-2018. 76,500.00 €.
- ▶ Francisco Blanco Vaca. Preventing Premature Coronary Heart Disease in Catalonia by Expanding Familial Hypercholesterolemia Diagnosis. MARATO 20152431. Fundació La Marató de TV3. Duration: 2016-2019. 119,968.00 €.
- ▶ Josep Julve Gil. Análisis del efecto de la administración de nicotinamida sobre el peso corporal y las propiedades cuantitativas y cualitativas de las lipoproteínas y su relación con el desarrollo de arteriosclerosis en modelos experimentales. BIN 03/15. Fundació i Societat Espanyola d'Arteriosclerosis. Duration: 2016-2018. 8,181.82 €.
- ▶ Josep Julve Gil. Lipotoxicity and microvascular disease: contribution to myocardial damage in clinical and experimental models of diabetes. MARATO 201602.31. Fundació La Marató de TV3. Duration: 2017-2020. 108,000.00 €.
- ▶ Juan Carlos Escola Gil. Estudio de las alteraciones del metabolismo intracelular del colesterol en el cáncer de mama y carcinoma epitelial de tiroides: Evaluación de estrategias terapéuticas basadas en la HDL. PI16/00139. Instituto de Salud Carlos III. Duration: 2017-2019. 71,500.00 €.
- ▶ Karen Alejandra Méndez Lara. Estratègies terapèutiques i nutricionals basades en la millora de les funcions antioxidant i antiinflamatòria de les lipoproteïnes d'alta densitat (HDL) en la diabetis tipus 2 i el càncer de mama. 2014FI00171. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 58,965.12 €.

Note: Total amount granted to PI. It does not include indirect costs.

Metabolic Bases of Cardiovascular Risk

*TIF: 81.284 **MIF: 4.5158

Scientific Production

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Chehaibi K., le Maire L., Bradoni S., Escola J.C., Blanco-Vaca F., Slimane M.N., Effect of PPAR- β/δ agonist GW0742 treatment in the acute phase response and blood-brain barrier permeability following brain injury (2017) *TRANSL RES*, 182, 27-48.

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De Gonzalo-Calvo D., Van Der Meer R.W., Rijzewijk L.J., Smit J.W.A., Revuelta-Lopez E., Nasarre L., Escola-Gil J.C., Lamb H.J., Llorente-Cortes V., Serum microRNA-1 and microRNA-133a levels reflect myocardial steatosis

in uncomplicated type 2 diabetes (2017) *SCI REP-UK*, 7 (1).

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Estruch M., Minambres I., Sanchez-Quesada J.L., Soler M., Perez A., Ordonez-Llanos J., Benitez S., Increased inflammatory effect of electronegative LDL and decreased protection by HDL in type 2 diabetic patients (2017) *ATHEROSCLEROSIS*, 265, 292-298.

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Fernandez-De-Retana S., Cano-Sarabia M., Marazuela P., Sanchez-Quesada J.L., Garcia-Leon A., Montanola A., Montaner J., Maspocho D., Hernandez-Guillamon M., Characterization of ApoJ-reconstituted high-density lipoprotein (rHDL) nanodisc for the potential treatment of cerebral β -amyloidosis (2017) *SCI REP-UK*, 7 (1).

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Minambres I., Perez A., Is there a justification for classifying GLP-1 receptor agonists as basal and prandial? (2017) *DIABETOL METAB SYNDR*, 9 (1).

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Padro T., Cubedo J., Camino S., Bejar M.T., Ben-Aicha S., Mendieta G., Escola-Gil J.C., Escate R., Gutierrez M., Casani L., Badimon L., Vilahur G., Detrimental Effect of Hypercholesterolemia on High-Density Lipoprotein Particle Remodeling in Pigs (2017) *J AM COLL CARDIOL*, 70 (2), 165-178.

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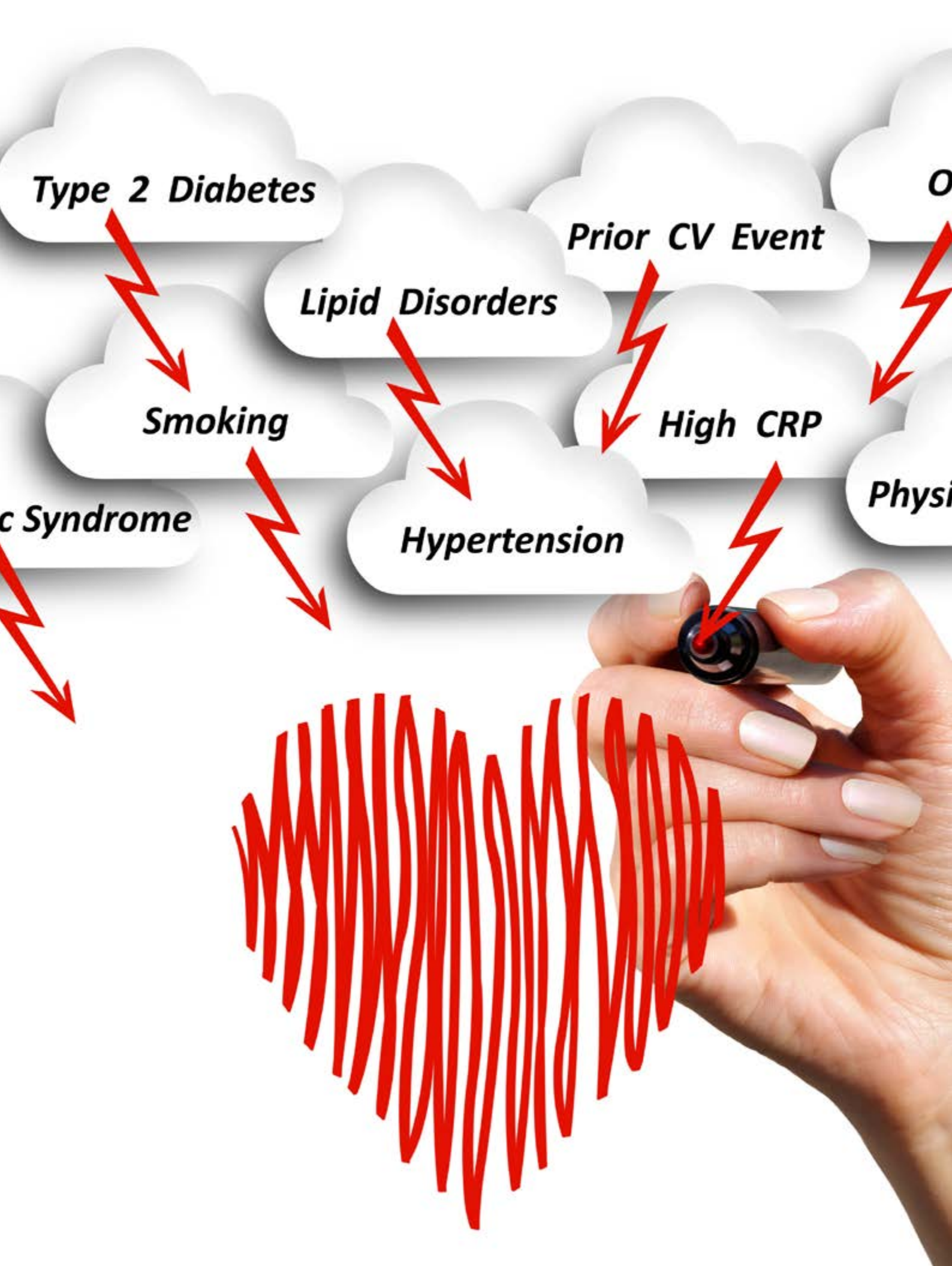
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Schanton M., Maymo J., Perez-Perez A., Gambino Y., Maskin B., Duenas J.L., Sanchez-Margalet V., Varone C., Sp1 transcription factor is a modulator of estradiol leptin induction in placental cells (2017) *PLACENTA*, 57, 152-162.

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Inflammatory Diseases



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Rubiales Robles,
María Victoria FGS
Vidal Alcorisa, Sílvia IR
Zamora Atenza, Carlos IR

Main Lines of Research

- ▶ The role of the natural immune system in the development of autoimmune and inflammatory processes.
- ▶ Immunological response and clinical course in immunomodulator treatments.
- ▶ The role of autoantibodies, components of the adaptive immunity system, in the pathogenesis of autoimmune processes and their use as diagnostic and prognostic markers in these diseases.
- ▶ Mechanisms involved in immunodeficiency.

Challenges

- ▶ Role of cells, molecules and autoantibodies of the innate and adaptive immune response in the development and control of inflammatory processes, in the appearance of autoimmune phenomena, immunodeficiencies, infections, cardiovascular diseases and development of tumours.
- ▶ Role of TLR and STAT signalling in inflammatory diseases and response to superantigens.
- ▶ Study of mechanisms involved in immunodeficiency caused by alterations of molecular components.
- ▶ Analysis of the evolution of immunological parameters and their correlation with clinical response to treatment with immunomodulators.
- ▶ Composition of complex human biological fluids. Association with clinical parameters.

Collaborations with other IIB Sant Pau Groups

- ▶ Dr. C. Guarnier and Dr. G. Soriano (Digestive Diseases and CIBER)
- ▶ Dra. Isabel Illa (Neurology)
- ▶ Dra. Esther Garcia-Planella (Digestive Diseases)
- ▶ Dr. Cesar Diaz-Torné (Reumatologia)
- ▶ Dr. Plaza and Dr. Sibila (Chronic Respiratory Diseases)
- ▶ Dr. Lluís Puig (Dermatology)
- ▶ Dra. Majem i Dr. Barnades (Clinical Oncology)
- ▶ Dr. Maroto (Clinical Oncology)

External Collaborations

- ▶ Dra. Manichanh (Digestive Pathology, Hospital Vall d'Hebron)
- ▶ Dra. Hernandez (Rheumatology, Hospital Clinic)
- ▶ Dr. Albert Selva i Dr. Moises Labrador (Allergology, Hospital Vall d'Hebron)
- ▶ Dr. Porcel (Internal Medicine, Hospital Arnau de Vilanova)
- ▶ Dr. Fernandez (Fundació Puigvert)
- ▶ Dra. Andia (Hospital Universitario de Cruces)
- ▶ Dra. Semnani i Dr. Nutman del NIAID-NIH (Bethesda, USA)
- ▶ Dra. Catalfamo del Georgetown University School of Medicine (Washington DC)

Active Grants

- ▶ Sílvia Vidal Alcorisa. Estudio de la interacción entre el linfocito T y plaquetas: su aplicación en el desarrollo de una terapia celular para regular la respuesta inmune en la artritis reumatoide. PI14/00741. Instituto de Salud Carlos III. Duration: 2015-2017. 41,500.00 €.
- ▶ Sílvia Vidal Alcorisa. Platelet-leukocyte complex/interaction: a new biomarker for the immune-related adverse events in lung cancer patients treated with immune checkpoint inhibitors. IR16-P6. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 7,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Sílvia Vidal Alcorisa. Caracterización de las plaquetas “educadas” en un entorno inflamatorio crónico para optimizar las terapias inmunoreguladoras con plaquetas. PI17/00072, Instituto de Salud Carlos III. Duration: 2018-2020. 47,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Transfer Products

- ▶ Sílvia Vidal Alcorisa. Análisis de los mecanismos inmunoreguladores de la Treg inducidos por tocilizumab en artritis reumatoide. Roche Farma, S.A.
- ▶ Sílvia Vidal Alcorisa. Caracterización de los macrófagos y las células madre del cáncer en pacientes con cáncer de pulmón, mama y ovario. MERCK.
- ▶ Sílvia Vidal Alcorisa, Marga Majem. Fuentes de PD-1 y PD-L1 en el cáncer de pulmón no microcítico. BMS.
- ▶ Pablo Maroto Análisis del perfil inmunológico de las células tumorales y de los linfocitos en la orina de pacientes con cáncer de vejiga. Roche Farma, S.A.
- ▶ César Díaz-Torné. Systemic inflammation in patients with gout. Astra Grunenthal.

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Scientific Production

Leiding J.W., Okada S., Hagin D., Abinun M., Shcherbina A., Balashov D.N., Kim V.H.D., Ovadia A., Guthery S.L., Pulsipher M., Lilic D., Devlin L.A., Christie S., Depner M., Fuchs S., van Royen-Kerkhof A., Lindemans C., Petrovic A., Sullivan K.E., Bunin N., Kilic S.S., Arpaci F., Calle-Martin O.D.L., Martinez-Martinez L., Aldave J.C., Kobayashi M., Ohkawa T., Imai K., Iguchi A., Roifman C.M., Gennery A.R., Slatter M., Ochs H.D., Morio T., Torgerson T.R., Hematopoietic stem cell transplantation in patients with gain-of-function signal transducer and activator of transcription 1 mutations (2017) J ALLERGY CLIN IMMUN.

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Martinez-Martinez L., Lleixa M.C., Boera-Carnicero G., Cortese A., Devaux J., Siles A., Rajabally Y., Martinez-Pineiro A., Carvajal A., Pardo J., Delmont E., Attarian S., Diaz-Manera J., Callegari I., Marchioni E., Franciotta D., Benedetti L., Lauria G., de la Calle Martin O., Juarez C., Illa I., Querol L., Anti-NF155 chronic in-

flammatory demyelinating polyradiculoneuropathy strongly associates to HLA-DRB15 (2017) J NEUROINFLAMM, 14 (1).

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Nieto J.C., Zamora C., Canto E., Garcia-Planel-la E., Gordillo J., Ortiz M.A., Juarez C., Vidal S., CSF-1 regulates the function of monocytes in Crohn's disease patients in remission (2017) SCI REP-UK, 7 (1).

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Sanchez E., Nieto J.C., Vidal S., Santiago A., Martinez X., Sancho F.J., Sancho-Bru P., Mirelis B., Corominola H., Juarez 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 (2017) SCI REP-UK, 7.

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Suarez-Calvet X., Gallardo E., Pinal-Fernandez I., De Luna N., Lleixa C., Diaz-Manera J., Rojas-Garcia R., Castellvi I., Martinez M.A.,

Grau J.M., Selva-O'Callaghan A., Illa I., RIG-I expression in perifascicular myofibers is a reliable biomarker of dermatomyositis (2017) ARTHRITIS RES THER, 19 (1).

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Suarez-Cuartin G., Smith A., Abo-Leyah H., Rodrigo-Troyano A., Perea L., Vidal S., Plaza V., Fardon T.C., Sibila O., Chalmers J.D., Anti-Pseudomonas aeruginosa IgG antibodies and chronic airway infection in bronchiectasis (2017) RESP MED, 128, 1-6.

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Zamora C., Canto E., Nieto J.C., Bardina J., Diaz-Torne C., Moya P., Magallares B., Ortiz M.A., Julia G., Juarez C., Llobet J.M., Vidal S., Binding of platelets to lymphocytes: A potential anti-inflammatory therapy in rheumatoid arthritis (2017) J IMMUNOL, 198 (8), 3099-3108.

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Other Publications

- ▶ Crespo-Lessmann A, Mateus E, Torrejón M, Belda A, Giner J, Vidal S, Sibila O, Plaza V. Asthma with bronchial hypersecretion: expression of mucins and toll-like receptors in sputum and blood. J Asthma Allergy. 2017 Oct 12; 10: 269-276.

Endocrinology, Diabetes and Nutrition



Coordinator

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Cubero Marcos, José María	FGS
De Leiva Hidalgo, Alberto	FGS
Gil Millán, Pedro Alejandro	IR
González Blanco, Cintia	FGS
Lupiañez Barbero, Ascensión	IR
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Martínez Roldán, María José	IR
Mato Matute,	
Eugenia	CIBERBBN
Navarro Cano, Gemma	FGS
Orellana Casado,	
Inmaculada	FGS
Pérez Pérez, Antonio	FGS

Main Lines of Research

- ▶ Endocrine neoplasms: investigation of tumour dedifferentiation mechanisms through genomic, proteomic and bioinformatic procedures.
- ▶ Autoimmune diabetes mellitus (classic type 1 and LADA) and gestational diabetes.
- ▶ Telemedicine and intelligent systems for therapeutic optimization of diabetes mellitus.
- ▶ Prediction, prevention and optimization of the treatment of obesity, hyperlipidaemia, metabolic syndrome and complications.
- ▶ Diabetes and endocrine disorders in pregnancy.
- ▶ History of insulin: old and new controversies about the discovery of insulin.

Endocrine Neoplasms

- ▶ Molecular markers of the epithelial lineage: expression of the ABCG2 gene/BCRP1 transporter.
- ▶ Transcriptomics and proteomics as prediction and prognosis instruments for epithelial thyroid cancer.
- ▶ Intramural CELL-NANO-THYROID project: investigation of human mesenchymal cell capacity as an instrument for administering anti-tumour cell drugs in the form of conjugated nanoparticles.
- ▶ Role of cholesterol & cholesterol metabolites in thyroid neoplasms differentiation.
- ▶ Assessment of glycosylated immunoglobulins as serologic markers of thyroid carcinoma.

Challenges

Autoimmune Diabetes Mellitus

- ▶ Classic type 1 autoimmune diabetes mellitus: discovery of genes that influence susceptibility to autoimmune diabetes (classic type 1).
- ▶ LADA type diabetes: prevalence of metabolic syndrome among patients with LADA compared to prevalence among patients with classic type 1 diabetes, type 2 diabetes and the general non-diabetic population in European countries.

Diabetes and Pregnancy

- ▶ Clinical research aimed at optimizing care for women with pre-gestational and ges-

tational diabetes at pre-conception, pregnancy, birth and postpartum stages.

Technology, telemedicine and intelligent systems for therapeutic optimization of diabetes mellitus

- ▶ Technology in the treatment of diabetes with special focus in insulin (new insulins, pumps), and glucose measurement including sensors.
- ▶ Development of a technological platform for the prediction, prevention and treatment of obesity, DM, HTA, dyslipidemia and cardiometabolic risk.

Optimization of the Treatment of Obesity, Hyperlipidaemia, Metabolic Syndrome and Complications

- ▶ Optimal treatment and prevention of cardiovascular risk associated with obesity, hyperlipidaemia, metabolic syndrome and diabetes mellitus 2.

History of Insulin: Old and New Controversies about the Discovery of Insulin

- ▶ To investigate with documented evidence (heuristics) if European research on the development of pancreatic extracts achieved beneficial results in the ootherapy of both experimental and clinical diabetes.

Theses

- ▶ Gabriela Monroy Rodríguez. Diabetes gestacional y la influencia de la lactancia en el metabolismo hidrocarbonado. Universitat Autònoma de Barcelona. Directors: Rosa Corcoy and Alberto de Leiva. Date of defense: 01/12/2017.
- ▶ Diana Ovejero Crespo. Descripció clínica, etiologia molecular i estudis fisiopatològics de la síndrome cutània esquelètica hipofosfatèmica: una malaltia mosaica de mutacions ras activadores, Universitat Autònoma de Barcelona. Directors: Ana Isabel Chico, Rosa Corcoy, Adolfo Díez, Alberto de Leiva. Date of defense: 18/06/2017.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Oncogenesis and Antitumour Drugs (Ramon Mangués).
- ▶ Ophthalmology (Fernando Rodríguez Álvarez).
- ▶ Cardiovascular Biochemistry (Jorge Ordóñez, José Luis Quesada, Francisco Blanco).
- ▶ General and Digestive Surgery (Antonio Moral, Ignacio Pérez).
- ▶ Reproductive Health (Juan Adelantado).
- ▶ Metabolic Bases of Cardiovascular Risk (Francisco Blanco).

External Collaborations

CIBER-BBN

- ▶ Bioengineering and Telemedicine Group at the Universidad Politécnica de Madrid, Spain (GBT-UPM). PI: Enrique J. Gómez Aguilera.

- ▶ Biomedical Engineering Research Group at the Universidad de Sevilla, Spain (GIB-US). PI: Laura Roa Romero.

CELL-NANO-THYROID

- ▶ Molecular Oncology Group at HVH, PI: S. Schwartz, Jr.
- ▶ Development of New Drugs Group at the Universidad del País Vasco, Spain. PI: JL Pedraz.

CONCEPT: Women with Type 1 Diabetes in Pregnancy Trial

Vitamin D and Lifestyle Intervention for Gestational Diabetes Mellitus (GDM) Prevention (DALI) Consortium

Action LADA European Consortium

Active Grants

- ▶ Cintia González Blanco. Intensificación y monitorización telemática personalizada de la modificación del estilo de vida en el tratamiento de la obesidad y la prevención del riesgo cardiometabólico. PI12/00931. Instituto de Salud Carlos III. Duration: 2013-2017. 68,000.00 €.
- ▶ Valeria Alcántara Aragon. Intensificación y monitorización telemática personalizada de la modificación del estilo de vida en el tratamiento de la obesidad y la prevención del riesgo cardiometabólico (PREDIRCAM 2). 2014FI00149. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 60,465.12 €.
- ▶ Alberto de Leiva Hidalgo. Grup de Recerca en Endocrinologia,Diabetes i Metabolisme. 2014 SGR 569. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 50,000.00 €.

- ▶ Ascension Lupiañez Barbero. Validació clínica de la plataforma tecnològica PREDIRCAM en l'etapa primerenca de la diabetis autoimmune tipus LADA. 2016 FI_B 00211. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2016-2019. 60,465.12 €.
- ▶ Valeria Alcántara Aragón. Impact of intermittent versus continuous walking on glucose control in type 2 diabetes. IR16-E4. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 3,500.00 €.
- ▶ Rosa Corcoy. Novel markers of glycemic control in women with Type 1 diabetes in pregnancy. An ancillary study from the CONCEPTt randomised clinical trial. EFSD/Sanofi Research Grant Programme for innovative measurement of diabetes outcomes. Duration: 2017-2018. 60,000 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Valeria Alcántara. Predircam 2- plataforma web para el soporte continuado en cambios de estilo de vida, tratamiento y seguimiento telemático de personas con obesidad y prevención de DM2. 3rd Award MSD 2017 to Innovation and Excellence in the approach of diabetic patients.

Endocrinology, Diabetes and Nutrition

*TIF: 102.487 **MIF: 6.4054

Scientific Production

Barcelo A., Morell-Garcia D., Salord N., Esquinas C., Perez G., Perez A., Monasterio C., Gasa M., Fortuna A.M., Montserrat J.M., Mayos M., A randomized controlled trial: branched-chain amino acid levels and glucose metabolism in patients with obesity and sleep apnea (2017) *J SLEEP RES*, 26 (6), 773-781.

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Cedo L., Santos D., Roglans N., Julve J., Pal-lares V., Rivas-Urbina A., Llorente-Cortes V., Laguna J.C., Blanco-Vaca F., Escola-Gil J.C., Human hepatic lipase overexpression in mice induces hepatic steatosis and obesity through promoting hepatic lipogenesis and white adipose tissue lipolysis and fatty acid uptake (2017) *PLOS ONE*, 12 (12).

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phy H.R., Continuous glucose monitoring in pregnant women with type 1 diabetes (CONCEPTT): a multicentre international randomised controlled trial (2017) *LANCET*, 390 (10110), 2347-2359.

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design? (2017) *ACTA DIABETOL*, 54 (7), 631-634.

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Simmons D., Devlieger R., Van Assche A., Jans G., Galjaard S., Corcoy R., Adelantado J.M., Dunne F., Desoye G., Harreiter J., Kautzky-Willer A., Damm P., Mathiesen E.R., Jensen D.M., Andersen L., Lapolla A., Dalfrá M.G., Bertolotto A., Wender-Ozegowska E., Zawiejska A., Hill D., Snoek F.J., Jelsma J.G.M., Van Poppel M.N.M., Effect of physical activity and/or healthy eating on gdm risk: The dali lifestyle study (2017) *J CLIN ENDOCR METAB*, 102 (3), 903-913.

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Pituitary Gland Disorders



Coordinator

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Members

Resmini, Eugenia CIBERER
Roig Garcia, Olga IR
Santos Vives, Alicia IR
Valassi, Elena CIBERER

Main Lines of Research

- ▶ ERCUSYN: European Registry on Cushing syndrome. Initiated with funding from SANCO, EU Public Health Programme.
- ▶ Role of myosteatosi in the development and persistence of residual muscular fragility in treated acromegaly and Cushing's syndrome. Study of the mechanisms involved.
- ▶ Spanish Molecular Registry of Pituitary Adenomas (REMAH study).
- ▶ Morbimortality, low-grade inflammation and cardiovascular risk in patients with acromegaly or Cushing syndrome.
- ▶ International consortium collaboration to identify genes and pathogenetic mechanisms involved in the development of craniopharyngiomas and pituitary adenomas.
- ▶ Neuroradiological, neuropsychological and clinical study of endogenous hypercortisolism: comparison of Cushing syndrome and chronic major depressive disorder.
- ▶ Validation of psychological properties of specific questionnaires to evaluate health-related quality of life (HRQoL) in Cushing syndrome and acromegaly.
- ▶ Study of bone microarchitecture and resistance and their predictors in patients with Cushing's syndrome and acromegaly in remission. A model to investigate the interaction between bone and body fat.
- ▶ Aetiology of cardiopathy in acromegaly and its relation to body composition.
- ▶ Role of telomeres in endocrine diseases.

Challenges

- ▶ Investigate the neuropsychological, neuroradiological and clinical correlation of patients with endogenous hypercortisolism (due to Cushing syndrome or chronic major depressive disorder) or exogenous exposure to low-dose glucocorticoids (due to treatment of adrenal insufficiency or rheumatoid arthritis). Similar studies for acromegaly.
- ▶ Evaluate long-term morbidity and mortality in patients who have had Cushing syndrome or acromegaly in the last 35 years, especially bone quality, muscular dysfunction and quality of life
- ▶ Analyse and update the European database of patients with Cushing syndrome (ERCUSYN), which in 2017 included over 1600 patients from 57 centres in 36 countries.
- ▶ Conduct in vitro molecular analysis of operated pituitary adenomas within the REMAH (Molecular Registry of Pituitary Adenomas) study, sponsored by the Spanish Endocrinology and Nutrition Society.

Active Grants

- ▶ Susan Webb Youdale. Estudio de microarquitectura y resistencia óseas y de factores que las determinan en el síndrome de Cushing o acromegalia en remisión. Modelo para investigar la interacción hueso-grasa corporal. PI14/00194. Instituto de Salud Carlos III. Duration: 2015-2019. 91,500.00 €.
- ▶ Susan Webb Youdale. Grup de Recerca de Malalties de la Hipòfisi i Grup CIBERER 747 (CIBER de Malalties Rares). 2014 SGR 355. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Elena Valassi. Role of myosteatosi in the development and persistence of residual muscular fragility in treated acromegaly and Cushing's syndrome. Study of the mechanisms involved. PI 17/00749. Duration: 2018-2020.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Patricia Pires Encuentra. Anomalías de la sustancia blanca cerebral en el síndrome de Cushing en relación a sintomatología psiquiátrica y rendimiento cognitivo. UAB. Directors: Susan M Webb, Beatriz Gómez Ansón. Date of defense: 19/09/2017.

Collaborations with other IIB Sant Pau Groups

- ▶ Martínez-Momblan MA, Santos A, Santesmases R, Campillo B, Guillaumet M, Serret M, Torres A, Abades M. Estudio longitudinal de la inserción laboral de los titulados de máster en enfermería. Revista ROL de Enfermería [Epub ahead of print]
- ▶ Collaboration with the Neuromuscular Research Group led by Dr Isabel Illa, specifically with Dr Jordi Manero, to evaluate muscle in patients treated for acromegaly and Cushing syndrome.

External Collaborations

- ▶ Bilateral research between E Resmini and Richard Lee of Baltimore University, Departments of Psychiatry and Medicine, the Johns Hopkins University School of Medicine. It has generated the publication Resmini E., Santos A., Aulinas A., Webb S.M., Reduced DNA methylation of FKBP5 in Cushing's syndrome. (2016) ENDOCRINE, 54 (3), 768-77.
- ▶ Genetic, molecular and clinical characterisation of craniopharyngioma. St Bartholomew's Hospital and The London Charity Hospital. With Dr. Carles Gaston-Massuet.
- ▶ Participation in the project of Personalized Medicine of the ISCIII. Improved and efficient therapy of acromegaly by implementation of a personalized and predictive algorithm including functional analysis, imaging and genomic informationn (number PMP 15/00027). Global PI: Manel Puig Domingo. Participating PIs:
 - IGTP Group/CIBERER GP: Manel Puig Domingo (PI)
 - Sant Pau Group/CIBERER 747: Susan Webb (PI), E Resmini, E Valassi, A Santos, I Crespo, A Aulinas
 - IDIBAPS/Clínic Group/CIBERER GV: Irene Halperin (PI)
 - Hospital de la Ribera Group (Alzira): Carmiña Fajardo (PI)
 - Hospital de la Princesa Group (Madrid)/CIBERER GP: Mónica Marazuela (PI)
 - Complejo Hospitalario de Santiago de Compostela Group: Ignacio Bernabéu (PI)
 - Hospital Universitario de Alicante/CIBERER GV: Antonio Picó (PI)
 - IMS Health: Montserrat Roset (PI)
- ▶ Silent corticotrope adenomas: Are they a subtype of more aggressive non-functioning pituitary adenomas? Project funded by CIBERER in the competitive call on Traslational Medicine, 2015-2016. PI: Antonio Picó (Alacant). Participating Units: U747-S. Webb (S Pau); U725A-L. Castaño (Bilbao); GCV 13_Picó (Alacant); GCV 11_Halperin (H Clinic Barcelona); GCV 12_Marazuela (Hosp Princesa, Madrid); GCV 14_Puig (Hospital GTiP, Badalona); GCV 15_Soto (HUV Rocio Sevilla).

Pituitary Gland Disorders

*TIF: 47.76 **MIF: 3.411

Scientific Production

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Caimari F., Valassi E., Garbayo P., Steffensen C., Santos A., Corcoy R., Webb S.M., Cushing's syndrome and pregnancy outcomes: a systematic review of published cases (2017) *ENDOCRINE*, 55 (2), 555-563.

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Crespo I., Valassi E., Webb S.M., Update on quality of life in patients with acromegaly (2017) *PITUITARY*, 20 (1), 185-188.

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Ibanez-Costa A., Lopez-Sanchez L.M., Gahete M.D., Rivero-Cortes E., Vazquez-Borrego M.C., Galvez M.A., De La Riva A., Venegas-Moreno E., Jimenez-Reina L., Moreno-Carazo A., Tinahones F.J., Maraver-Selfa S., Japon M.A., Garcia-Arnes J.A., Soto-Moreno A., Webb S.M., Kineman R.D., Culler M.D., Castano J.P., Luque R.M., BIM-23A760 influences key functional endpoints in pituitary adenomas and normal pituitaries: Molecular mechanisms underlying the differential response in adenomas (2017) *SCI REP-UK*, 7.

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Kyriakakis N., Lynch J., Gilbey S.G., Webb S.M., Murray R.D., Impaired quality of life in patients with treated acromegaly despite long-term biochemically stable disease: Re-

sults from a 5-years prospective study (2017) *CLIN ENDOCRINOL*, 86 (6), 806-815.

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Pires P., Santos A., Vives-Gilabert Y., Webb S.M., Sainz-Ruiz A., Resmini E., Crespo I., de Juan-Delago M., Gomez-Anson B., White matter involvement on DTI-MRI in Cushing's syndrome relates to mood disturbances and processing speed: a case-control study (2017) *PITUITARY*, 20 (3), 340-348.

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Santos A., Resmini E., Pascual J.C., Crespo I., Webb S.M., Psychiatric Symptoms in Patients with Cushing's Syndrome: Prevalence, Diagnosis and Management (2017) *DRUGS*, 77 (8), 829-842.

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Santos A., Granell E., Gomez-Anson B., Crespo I., Pires P., Vives-Gilabert Y., Valassi E., Webb S.M., Resmini E., Depression and Anxiety Scores Are Associated with Amygdala Volume in Cushing's Syndrome: Preliminary Study (2017) *BIOMED RES INT*, 2017.

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Sesnilo G., Resmini E., Sambo M., Blanco C., Calvo F., Pazos F., Fernandez-Catalina P., Martinez De Icaya P., Paramo C., Fajardo C., Marazuela M., Alvarez-Escola C., Diez J.J., Perea V., Prevalence of acromegaly in patients with symptoms of sleep apnea (2017) *PLOS ONE*, 12 (9).

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Valassi E., Crespo I., Keevil B.G., Aulinas A., Urgell E., Santos A., Trainer P.J., Webb S.M.,

Affective alterations in patients with Cushing's syndrome in remission are associated with decreased BDNF and cortisone levels (2017) *EUR J ENDOCRINOL*, 176 (2), 221-231.

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Valassi E., Franz H., Brue T., Feelders R.A., Neeta-Maier R., Tsagarakis S., Webb S.M., Yaneva M., Reincke M., Droste M., Diagnostic tests for Cushing's syndrome differ from published guidelines: Data from ERCUSYN (2017) *EUR J ENDOCRINOL*, 176 (5), 613-624.

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Valassi E., Aulinas A., Glad C.A.M., Johansson G., Ragnarsson O., Webb S.M., A polymorphism in the CYP17A1 gene influences the therapeutic response to steroidogenesis inhibitors in Cushing's syndrome (2017) *CLIN ENDOCRINOL*, 87 (5), 433-439.

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van der Lely A.J., Gomez R., Pleil A., Badia X., Brue T., Buchfelder M., Burman P., Clemmons D., Ghigo E., Jorgensen J.O.L., Luger A., van der Lans-Bussemaaker J., Webb S.M., Strasburger C.J., Development of ACRODAT®, a new software medical device to assess disease activity in patients with acromegaly (2017) *PITUITARY*, 20 (6), 692-701.

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Webb S.M., Crespo I., Santos A., Resmini E., Aulinas A., Valassi E., Quality of life tools for the management of pituitary disease (2017) *EUR J ENDOCRINOL*, 177 (1), R13-R26.

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Digestive Diseases



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Main Lines of Research

Experimental research

- ▶ Experimental rat model of cirrhosis and ascites.
- ▶ Mechanisms and prevention of bacterial translocation in rats with cirrhosis.
- ▶ Experimental model of spontaneous and induced bacterial peritonitis: physiopathology and treatment.
- ▶ MiRNAs expression profile in inflammatory bowel disease after stimulation with toll-like receptor ligands.

Clinical investigation

- ▶ Physiopathology, diagnosis, treatment and prevention of bacterial infections, ascites and hepatorenal syndrome in cirrhosis.
- ▶ Diagnosis and treatment of hepatic encephalopathy in cirrhosis.
- ▶ Cognitive impairment, falls and quality of life in patients with cirrhosis.

- ▶ Physiopathology, diagnosis, treatment and prevention of digestive haemorrhage due to portal hypertension of non-varicose origin.
- ▶ Diagnosis and treatment of chronic hepatitis B and C.
- ▶ Diagnosis and treatment of hepatocarcinoma.
- ▶ Physiopathology, diagnosis and treatment of intestinal inflammatory disease (inflammatory bowel disease).
- ▶ Diagnosis and treatment in advanced gastrointestinal endoscopy.
- ▶ Diagnosis and treatment of acute pancreatitis.
- ▶ Prevention of acute post-ERCP pancreatitis.
- ▶ Chronic pancreatitis and pancreatic neoplasms: molecular studies, early detection and treatment.

Challenges

- ▶ Consolidate the CIBEREHD, CIBER, Instituto de Salud Carlos III research group by studying complications in cirrhosis.
- ▶ Grup de Recerca de Complicacions de la Cirrosi Hepàtica. Universitat Autònoma de Barcelona
- ▶ Consolidated research group of the Generalitat de Catalunya (SGR)
- ▶ Expand the hepatology research lab and develop new research.
- ▶ Consolidate the portal hypertension research group.

- ▶ Consolidate the pancreatic illness research line.
- ▶ Consolidate the inflammatory bowel disease research line.
- ▶ Consolidate the polyps and colon cancer research line.
- ▶ Develop a digestive endoscopy research line.

Active Grants

- ▶ Carlos Guarner Argente. Ensayo clínico multicéntrico, aleatorizado y doble ciego sobre el uso de antibiótico profiláctico en la punción por ecoendoscopia de lesiones quísticas del páncreas. P113/00609. Instituto de Salud Carlos III. Duration: 2014-2018. 33,750.00 €.
- ▶ Carlos Guarner Aguilar. Estudio de las alteraciones de la barrera intestinal en la cirrosis hepática. P114/00680. Instituto de Salud Carlos III. Duration: 2015-2019. 81,500.00 €.
- ▶ Cándid Villanueva Sánchez. Evolución de la circulación colateral portosistémica y la hiperdinamia asociadas a hipertensión portal con el tratamiento etiológico de la

- ▶ cirrosis. Influencia en el desarrollo de complicaciones. P116/01992. Instituto de Salud Carlos III. Duration: 2017-2019. 101,500.00 €.
- ▶ Edilmar Auxiliadora Alvarado Tapias. Ajuts per a contractes de formació "Río Hortega" 2016. CM16/00133. Instituto de Salud Carlos III. Duration: 2017-2019. 53,732.00 €.
- ▶ Roman Abal, Eva Maria. Papel de la deficiencia de la vitamina D en los eventos clave de la cirrosis hepática e impacto de su suplementación. Beca Fondo de Investigación Sanitaria (Instituto de Salud Carlos III) P116/00920

Note: Total amount granted to PI. It does not include indirect costs.

Collaborations

Collaborations with other IIB Sant Pau Groups

IIB-Sant Pau, Institut de Recerca

Genetic, Metabolic and Inflammatory Diseases research area:

- ▶ Dr. Cándido Juárez (Inflammatory Diseases)
- ▶ Dr. Pere Coll (Microbiology and Infectious Diseases)
- ▶ Dra. Pia Gallano and Dr. Jordi Surrallés (Genetic Research)
- ▶ Dr. Alberto de Leiva (Endocrinology, Diabetes and Nutrition)

Neurological, Mental Disorders and Ageing:

- ▶ Dra. Beatriz Gómez Ansón (Neuradiology)

Molecular, Genomic, Cellular and Kinetic-Dynamic bases for Diseases and their Treatment:

- ▶ Dr. Juan García (Banc de Sang i Teixits, Generation of advanced therapy medicines)

Associated Groups:

- ▶ Dr. Lluís Puig (Dermatology)

Fundació de Gestió Sanitària Hospital de la Santa Creu i Sant Pau

- ▶ Physical Medicine and Rehabilitation

Intitut Català de Ciències Cardiovasculars

- ▶ Dr. Laura Casani (Service for external use of Animal Experimentation Unit (UEA))

External Collaborations

National collaborations

- ▶ CIBER Groups: CIBEREHD:Dr. Albillos, Dr. Frances, Dr. Bosch, Dr. Bruix, Dr. Cabré, Dr. Forn, Dr. Genesca, Dr. Andrade, Dr. Romero Gómez, Dr. Bañares, among others.; CIBERSAM: Dr. Gish; CIBERER: Dr. Pia Gallano.
- ▶ Instituto de Productos Lácteos Asturias (IPLA).
- ▶ Danone Nutricia Research, Barcelona, Spain.
- ▶ Gastrointestinal Oncology Group of the Spanish Gastroenterological Association.
- ▶ Spanish Collaborative Group for the Study of the Use of Hepatitis C Direct-Acting Drugs.

- ▶ Spanish DILI registry.
- ▶ SportDiet Collaborative Group.
- ▶ BLEPS Study Group. Spanish Collaborative Group for the Study of the Use of Hepatitis C Direct-Acting Drugs.
- ▶ Variceal Bleeding Study Group.
- ▶ Spanish Working Group on Crohn's Disease and Ulcerative Colitis (GETECCU).
- ▶ ENEIDA project.
- ▶ Spanish Microscopic Colitis Group (SMCG).
- ▶ EndoCAR group of the Spanish Gastroenterological Association and Spanish Digestive Endoscopy Society.

International collaborations

- ▶ Cleveland Abu Dhabi.
- ▶ University of Bologna Italia.
- ▶ EF Clif European Foundation for the study of chronic liver failure.
- ▶ CANONIC study investigators of the EASL-CLIF Consortium and the European Foundation for the Study of Chronic Liver Failure (EF-CLIF).
- ▶ Danone Nutricia Research.
- ▶ EPICOLON Consortium, Lynch Syndrome prediction model validation study group.
- ▶ BLEPS study group.
- ▶ Variceal Bleeding Study Group.
- ▶ European Study Group on Cystic Tumors of the Pancreas.
- ▶ Gilead
- ▶ Shionogui Group
- ▶ Actial
- ▶ Mendes
- ▶ Quintiles
- ▶ Tobira
- ▶ Boehringer Ingelheim

Awards

- ▶ Award for the best oral communication: Eva M. Román. Estudio del efecto de un probiótico multiespecies sobre la función cognitiva, el riesgo de caídas y la respuesta inflamatoria en los pacientes con cirrosis. Congrés de la Societat Catalana de Digestologia (SCD) Lleida 2017.
- ▶ Award for the best oral communication in clinical uses: Eva M. Román. Estudio del efecto de un probiótico multiespecies sobre la función cognitiva, el riesgo de caídas y la respuesta inflamatoria en los pacientes con cirrosis. VIII Workshop de la Sociedad Española sobre Probióticos y Prebióticos (SEPP). Santiago de Compostela, 22-24 february de 2017.

Theses

- ▶ Alan Colomo Ordoñez, Hemorragia digestiva alta: prevención y tratamiento. Universitat Autònoma de Barcelona, Director: Cándid Villanueva Sánchez. Date of defense: 20/01/2017.

Digestive Diseases

Books or
chapters
with ISBN

- Soriano G, Sánchez E, Poca M, Román E y Guarner C. Probióticos y prebióticos en las enfermedades hepáticas. Probióticos, prebióticos y salud: Evidencia científica. Sociedad Española de Probióticos y Prebióticos. Edit. Ergon. 2017. ISBN: 978-84-16732-09-8.

*TIF: 210.592 **MIF: 7.7997

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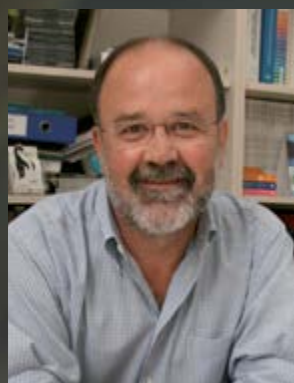
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Other Publications

- ▶ Abades M, Campillo B, Guillaumet M, Santesmases R, Hernández E, Román E. Inserción laboral de los titulados en enfermería de una escuela universitaria de enfermería (2009-2016). *Revista Enfermería Docente*. 2017; 109:12-18.
- ▶ Sánchez-Martínez MA, Garcia-Planella E, Laiz A, Puig L. Inflammatory Bowel Disease: Joint Management in Gastroenterology and Dermatology. *ACTAS DERMOSIFILIOGR*. 2017 Apr; 108(3): 184-191.

Microbiology and Infectious Diseases



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Main Lines of Research

Clinical Microbiology

- ▶ Study of resistance mechanisms.
- ▶ Tuberculosis, epidemiology and anti-tuberculosis resistance mechanisms.
- ▶ Molecular biology applications in infectious disease detection, taxonomy and epidemiology.
- ▶ Medical care projects.

Kidney Transplantation

- ▶ Biomarkers for BKV in urine samples.
- ▶ T CD8+ immunity from CMV in renal transplant patients treated with Thymoglobulin.
- ▶ Medical care projects.

Infectious Pathologies

- ▶ Restricted-use policies for antibiotic and antimicrobial agents and suitable use of antimicrobial agents.
- ▶ Study of infections associated with foreign bodies (joint prostheses, catheters, cardiac prostheses and pacemakers).
- ▶ Study of infections due to multiresistant microorganisms or requiring isolation.
- ▶ Tuberculosis.

Challenges

Clinical Microbiology

- ▶ Detection and characterization of Leishmaniasis from clinical samples.
- ▶ Study of molecular epidemiology (population and clonality studies in bacteria, mycobacteria, fungi and viruses).
- ▶ Molecular bases of bacterial resistance to antibiotics, vectors that convey resistance genes (plasmids, transposons, integrons, phages).
- ▶ The use of molecular techniques in diagnosis of infectious diseases.
- ▶ Research related to bacteraemia and endocarditis, nosocomial infections, prosthetic joint infections, central nervous system infections and tuberculosis.

Tuberculosis, Epidemiology and Resistance Mechanisms

- ▶ Prospective monitoring of primary and acquired Mycobacterium tuberculosis resistance to first-second-line drugs.
- ▶ Molecular detection of resistance using a molecular antibiogram.
- ▶ Study of the epidemiology and spread of resistant strains and assessment of the impact of immigration and the contribution of new Mycobacterium tuberculosis families (Beijing, EAI, CAS).

Molecular Biology Applications to Infectious Disease Detection, Taxonomy and Epidemiology

- ▶ Study of the usefulness of the 16S RNA gene for microbiological diagnosis and molecular identification.

- ▶ Genotype characterization of Cryptosporidium spp. oocysts from stool samples collected by the HSCSP Microbiology Unit.

Medical Care

- ▶ Government Health Department agreement (ongoing) regarding the development of epidemiological surveillance support functions for nosocomial infections and flaccid paralysis.
- ▶ Study of mycoses in depth, especially invasive fusariosis and aspergillosis and respiratory tract viral infections in patients with onco-haematological diseases.
- ▶ Multicentre studies of HIV (ongoing).
- ▶ Monitoring of congenital infection in prenat women with Chagas disease.

Kidney Surgery

- ▶ Biomarkers for BKV in urine sample: Determination of a diagnostic and prognostic biomarker in urine by proteomics of nephropathy by BK virus in renal transplant receptors, sponsored by the Infectious Diseases Department, Vall d'Hebron University Hospital, Barcelona, Spain.
- ▶ Estudio de la cinética de la Inmunidad T CD8+frente a CMV en trasplantados renales tratados con Timoglobulina. Financiación: Convocatoria de ayudas de la Fundación, Proyecto y Salud de la Junta de Andalucía.
- ▶ Ensayo clínico de suspensión de la profilaxis con valganciclovir en trasplantados renales CMV-seropositivo que mantienen la inmunidad celular CD8+ CMV-específica tras recibir timoglobulina. Financiación: Convocatoria de Ayudas Proyectos de Investigación de Salud del ISC III. FIS (P115/00402)

Challenges

Infectious Pathologies**Restricted-use Antibiotic and Antimicrobial Policies**

- ▶ To minimize resistance, reduce cost and improve compliance with surgical prophylaxis (at the time of administration) through suitable use of antimicrobial agents.

Epidemic Outbreaks and Infections Caused by Multiresistant Microorganisms and Microorganisms Requiring Isolation

- ▶ To study epidemiology for our hospital.
- ▶ To reduce incidence.
- ▶ To prevent/contain epidemic outbreaks and work with the Microbiology Unit in epidemiology and molecular studies.

Infections Associated with Foreign Bodies (Joint Prostheses, Catheters, Cardiac Prostheses, Pacemakers)

- ▶ To reduce incidence.
- ▶ To develop effective conservative treatment regimes.

Infections in Transplant Patients (Heart, Haemopoietic Progenitors)

- ▶ To study current epidemiology.
- ▶ To assess the efficacy of prophylaxis and other preventive measures.

Tuberculosis

- ▶ To cooperate with studies of resistance and with new treatment regimes for tuberculosis.

Other Projects

To continue with the Government Health Department agreement regarding the development of support functions as follows:

- ▶ Epidemiological surveillance of nosocomial infections (VINCat).
- ▶ Tuberculosis control: Barcelona-Dreta Tuberculosis Operations Committee (coordinator: Dr Sambeat).
- ▶ New influenza control: Barcelona-Dreta Epidemiological Surveillance Operations Committee (coordinator: Dr López-Contreras).
- ▶ Database for monitoring CMV infections after renal transplantation.
- ▶ Database for monitoring BK virus infections after renal transplantation.
- ▶ Observational and multicentre case-controlled (1:2) study to compare the evolution of renal transplantation in patients with HIV infection (Dr Canal, Dr Facundo and Dr Serra), sponsored by the Andalusian Organ and Tissue Transplantation Society.

Collaborations

Active Grants

- ▶ Estudio de la cinética de la Inmunidad T CD8+frente a CMV en trasplantados renales tratados con Timoglobulina. Convocatoria de ayudas de la Fundación, Proyecto y Salud de la Junta de Andalucía.
- ▶ Ensayo clínico de suspensión de la profilaxis con valganciclovir en trasplantados renales CMV-seropositivo que mantienen la inmunidad celular CD8+ CMV-específica tras recibir timoglobulina. Convocatoria de Ayudas Proyectos de Investigación de Salud del ISC III. FIS (PI15/00402)

External Collaborations

- ▶ Montserrat Gállego Culleré Sección de Parasitología, Dep. de Biología, Sanitat I Media Ambient, Facultat de Farmàcia. Universitat de Barcelona. Topic: Chagas and leishmaniasis
- ▶ Alejandro Gabriel Schijman Laboratorio de Biología molecular de la enfermedad de Chagas (LabMECh). Instituto de Investigaciones en Ingeniería Genética y Biología Molecular (INGEBI-CONICET). Buenos Aires, Argentina. Topic: Chagas
- ▶ Renaud Piarroux Université Aix-Marseille, INSERM-IRD-AMU UMR 912, Marseille, France. Topic: Leishmaniasis. Characterization
- ▶ Patrick Bastien, Laurence Lachaud. Département de Parasitologie-Mycologie, Centre National de Référence des Leishmanioses, Centre Hospitalier Universitaire de Montpellier, France. Topic: Leishmaniasis. Characterization

- ▶ Francisco Bolás Fernández. Departamento de Parasitología. Universidad Complutense de Madrid (UCM). Topic: Leishmaniasis
- ▶ Marcia Dalastra Laurenti. Universidade de São Paulo (USP). Brasil. Topic: Tegumentary leishmaniasis
- ▶ Mary Cruz Torrico de Solano. Parasitology laboratory –Medicine Faculty. Universidad Mayor de San Simón and Laboratorio de Investigación-Fundación CEADES de Cochabamba, Bolivia. Topic: Leishmaniasis in Bolivia.
- ▶ Dr. Kathryn Harris. Great Ormond Street Hospital (Camelia Botnar Laboratories). Londres, UK. Topic: Epidemiology of Mycobacterium abscessus complex using whole genome sequencing. Interhuman transmission?
- ▶ Aurora Garcia Fernández. Istituto Superiore di Sanità. Department of Infectious Diseases. Rome, Italy. Topic: Epidemiology of enteropathogenic bacteria.
- ▶ Alessandra Carattoli. Istituto Superiore di Sanità. Department of Infectious Diseases. Rome, Italy. Topic: Characterization of plasmids
- ▶ Maite Muniesa. Departament de Genètica, Microbiologia I estadística, Universitat de Barcelona. Topic: Presence of phages in clinical samples
- ▶ Carlos Balsalobre and Cristina Madrid. Departament de Genètica, Microbiologia I estadística, Universitat de Barcelona. Topic: Campilobacteriosis
- ▶ Alex Friedrik and Silvia Garcia-Cobos. University Medical Center (UMCG) Groningen, The Netherlands. Topic: Whole genome sequence in carbapenemase-producing Enterobacteriaceae.

Microbiology and Infectious Diseases

Active Grants

- ▶ Pere Coll Figa. Conveni Dpt. Salut - Dr. Coll (IR). Desenvolupar conjuntament funcions de vigilància epidemiològica de les infeccions nosocomials i la poliomielitis (Vigilància de les paralisis flaccides). Dpt. Salut - Coll. Departament de Salut. Duration: 2011-2017. 104,670.49 €.
 - ▶ Pere Coll Figa. Red Española de Investigación en Patología Infecciosa. RD12/0015/0017. Instituto de Salud Carlos III. Duration: 2013-2017. 212,100.41 €.
 - ▶ Pere Domingo Pedrol. Red de sida (RIS). RD12/0017/0014. Instituto de Salud Carlos III. Duration: 2013-2017. 121,000.00 €.
 - ▶ Paula Andrea Espinal Marin. Contratos Sara Borrell 2015. CD15/00017. Instituto de Salud Carlos III. Duration: 2016-2019. 80,598.00 €.
 - ▶ Maria Natividad de Benito Hernández. Optimización de la profilaxis quirúrgica antimicrobiana en los pacientes a los que se implanta una prótesis articular electiva en España. PI15/01026. Instituto de Salud Carlos III. Duration: 2016-2018. 59,000.00 €.
 - ▶ Ferran Navarro Risueño. Presencia de bacteriofagos en muestras clínicas estériles e interferencia de los mismos en el diagnóstico microbiológico de las infecciones. PI16/00158. Instituto de Salud Carlos III. Duration: 2017-2019. 66,000.00 €.
 - ▶ Pere Coll Figa. Grup de Recerca en Patologia Infecciosa i Microbiologia Clínica. 2014 SGR 333. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ María Natividad de Benito Hernández, Factors de risc i prevenció de les infeccions del peu diabètic: paper del control glicèmic i el microbioma de l'úlcer. SLT002/16/00089. Departament de Salut. Duration: 2017-2019. 58,714.20 €.
 - ▶ Paula Andrea Espinal Marín. Movilidad AES-Instituto Superiore di Sanita. Departament of Infectious Diseases, Rome, Italy., MV17/00046. Instituto de Salud Carlos III. Duration: 2018, 11,895.00 €.
- Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Alba Abras Feliu. Utilidad de diferentes técnicas serológicas y moleculares en el diagnóstico y seguimiento de la enfermedad de Chagas y en la caracterización de *Trypanosoma cruzi*, UAB. Directors: Montse Gállego and Carme Muñoz. Date of defense: 08/03/2017.

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Abras A., Gallego M., Munoz C., Juiz N.A., Ramirez J.C., Cura C.I., Tebar S., Fernandez-Arevalo A., Pinazo M.-J., de la Torre L., Posada E., Navarro F., Espinal P., Ballart C., Portus M., Gascon J., Schijman A.G., Identification of *Trypanosoma cruzi* Discrete Typing Units (DTUs) in Latin-American migrants in Barcelona (Spain) (2017) PARASITOL INT, 66 (2), 83-88.

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Abras A., Munoz C., Ballart C., Berenguer P., Llovet T., Herrero M., Tebar S., Pinazo M.-J., Posada E., Marti C., Fumado V., Bosch J., Coll O., Juncosa T., Ginovart G., Armengol J., Gascon J., Portus M., Gallego M., Towards a new strategy for diagnosis of congenital *Trypanosoma cruzi* infection (2017) J CLIN MICROBIOL, 55 (5), 1396-1407.

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Alvarez-Del Arco D., Fakoya I., Thomadakis C., Pantazis N., Touloumi G., Gennotte A.-F., Zuure F., Barros H., Staehelin C., Gopel S., et al. High levels of postmigration HIV acquisition within nine European countries (2017) AIDS, 31 (14), 1979-1988.

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Ariza J., Cobo J., Baraia-Etxaburu J., de Benito N., Bori G., Cabo J., Corona P., Esteban J.,

Horcajada J.P., Lora-Tamayo J., Murillo O., Palomino J., Parra J., Pigrau C., del Pozo J.L., Riera M., Rodriguez D., Sanchez-Somolinos M., Soriano A., del Toro M.D., de la Torre B., Executive summary of management of prosthetic joint infections. Clinical practice guidelines by the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC) Resumen ejecutivo de tratamiento de las infecciones de prótesis articulares. Guia clínica práctica de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (2017) ENFERM INFECC MICR CL, 35 (3), 189-195.

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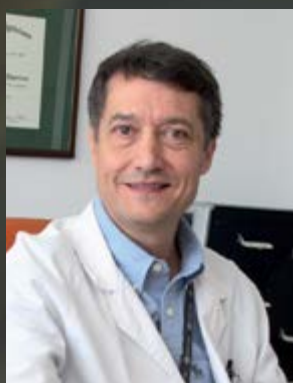
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Multi-organ Damage



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Barceló Trias, Montserrat	FGS
Benet Gusta, Maria Teresa	IR
Castella Rovira, Marta	IR
Castellví Barranco, Ivan	FGS
Díaz Torné, César	FGS
Filella Agullo, David	FGS
Francia Santamaria, Esther	FGS
Hernández de Sosa, Nerea	FGS
Herrera Bachs, Silvia	IR
Jurado González, Susana	IR
Laiz Alonso, Ana María	FGS
Magallares López, Berta Paula	IR
Malouf Sierra, Jorge	IR
Mascaró Lamarca, Jordi	FGS
Matas Pericas, Laia	FGS
Millan Arciniegas, Ana Milena	IR
Moya Alvarado, Patricia	IR
Ponte Márquez, Paola Helena	IR
Ruiz Hidalgo, Domingo	FGS
Torres Bonafonte, Olga Herminia	FGS

Main Lines of Research

Bone Metabolism and Osteoporosis

- ▶ Analysis of genetic influence on osteoporosis by means of aggregation studies in families of three or more generations with a minimum of 15 members.
- ▶ Bone structure study with quantitative CT of hip and spine, analysing the contribution of trabecular and cortical components using HRCT.
- ▶ Description of fat values and percentages in a normal population (in collaboration with the HIV Unit and CETIR Medical Group).
- ▶ Analysis of the influence of an intervention (physical exercise) on changes in the muscle compartment of patients with cirrhosis measured by DXA and HRCT (in collaboration with the Gastroenterology Department).

- ▶ Description of bone structure in patients with a history of acromegaly assessed by DXA and HRCT.

Hypertension and Vascular Risk

- ▶ Hypertension and quality of life.
- ▶ Refractory hypertension.
- ▶ Use of alirocumab in hypercholesterolaemia.

Clinical Management, Internal Medicine and Geriatrics

- ▶ Health care quality indexes (mortality, readmissions, etc).
- ▶ Perioperative medicine.
- ▶ Potentially inappropriate prescribing to older patients admitted to hospital.
- ▶ Central Sensitization Syndromes.

Rheumatology and Rheumatoid Arthritis

- ▶ Immunomodulation due to anti-CD20 (rituximab) treatment and study of polymorphisms.

- ▶ Pharmacokinetics of methotrexate.
- ▶ Evaluation of baricitinib in patients with moderately to severely active rheumatoid arthritis who have had an inadequate response to methotrexate or antiTNF therapy.
- ▶ Evaluation of tofacitinib in patients with moderately to severely active rheumatoid arthritis with inadequate response to biologic DMARD.
- ▶ Evaluation of the JAK-STAT pathway in patients with rheumatoid arthritis treated with tocilizumab.

Systemic Sclerosis

- ▶ Capillaroscopy patterns and correlation with auto-antibodies and pulmonary function tests.
- ▶ Evidence-based detection of pulmonary arterial hypertension in systemic sclerosis: the DETECT study.
- ▶ Use of endothelin receptor antagonism to prevent pulmonary arterial hypertension (in collaboration with Vall d'Hebron University Hospital, Barcelona, Spain).
- ▶ Genetic studies in systemic sclerosis and collaboration with DUO Registry and LAUDES study.
- ▶ Study of capillaroscopy patterns in diffuse connective tissue diseases: QuantiCAP study.

Gout

- ▶ Epidemiology of hyperuricaemia and gout.

Sjögren Syndrome

- ▶ Clinical and epidemiological findings in Spanish patients with primary Sjögren syndrome (in collaboration with Spanish Society of Rheumatology).

Challenges

- ▶ To establish stable work relations between the HSCSP Bone Metabolism and Genomics of Complex Diseases Groups and the Bone Metabolism Unit of Hospital del Mar Medical Research Institute and the Faculty of Biology of the University of Barcelona.
- ▶ To strengthen ties between the HSCSP Rheumatology and Immunology departments regarding the study of immunological diseases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Digestive Diseases (Dr Germán Soriano). Study by densitometry and ergospirometry of the effects of an exercise programme in overweight patients with liver cirrhosis.
- ▶ Orthopaedic Surgery and Traumatology Service (Dr José Carlos González Rodríguez). Randomized, double-blind, placebo-controlled clinical trial of parallel groups assessing the efficacy of subcutaneous denosumab for periprosthetic resorption decrease in patients with total knee prosthesis, IIB-SP-DEN-2012-24, Eudra No: 2012-001285-15.
- ▶ Cardiovascular Risk Group (Dr Laiz Matas). Longitudinal epidemiological study for the assessment of arterial stiffness in patients with renal insufficiency and treatment with vitamin D3 and vitamin D analogues, IIBSP- VIT-2013-138.

External Collaborations

- ▶ Dr Luis del Rio. Standardized measures of different tissues using dual-energy X-ray absorptiometry, CETIR Medical Group, Barcelona, Spain.
- ▶ Internal Medicine Pneumonia Study (ENEMI), coordinated by the Hospital General Universitario Gregorio Marañón, Madrid, Spain.

Active Grants

- ▶ Jordi Casademont Pou. Estudio GAO: de los fenotipos intermediarios al análisis global del genoma. P114/01036. Instituto de Salud Carlos III. Duration: 2015-2018. 76,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Ainhoa Simon Estrada. Adult Attachment Styles in American and Spanish Patients with Fibromyalgia and Rheumatoid Arthritis: a Cross-Sectional Study. Universitat Autònoma de Barcelona. Director: Jordi Casademont. Date of defense: 20/09/2017.
- ▶ Matas Pericas, Laia. Risc cardiovascular en pacients que consulten a urgències d'un hospital general amb un accident vascular agut. Universitat Autònoma de Barcelona. Directors: Juan Antonio Arroyo Díaz, Alex Roca-Cusachs Coll. Date of defense: 26/06/2017.

Multi-organ Damage

*TIF: 189.688 **MIF: 8.247

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ra J.A., Gonzalez-Macias J., Pino-Montes J.D., Munoz-Torres M., Diaz-Curiel M., Malouf J., Cano A., Perez-Castrillon J.L., Nogueas X., Garcia-Giralt N., Dlez-Perez A., SNPs in bone-related miRNAs are associated with the osteoporotic phenotype (2017) *SCI REP-UK*, 7 (1).

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Scientific Production

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Rivas-Cobas P.C., Ramirez-Duque N., Gomez Hernandez M., Garcia J., Agusti A., Vidal X., Formiga F., Lopez-Soto A., Torres O.H., San-Jose A., Characteristics of potentially inappropriate prescribing of drugs in elderly polypathological patients Características del uso inadecuado de medicamentos en pacientes pluripatológicos de edad avanzada (2017) *GAC SANIT*, 31 (4), 327-331.

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Other Publications

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Chronic Respiratory Diseases



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Main Lines of Research

Asthma

- ▶ Asthma exacerbations.
- ▶ Severe asthma.
- ▶ Good clinical practice guidelines for asthma.
- ▶ Bronchial inflammation.
- ▶ Experimental asthma and pathogenic mechanisms.
- ▶ Multicentre biobank specializing in bronchial biopsies for research into asthma.
- ▶ Bronchial thermoplasty.
- ▶ Clinical trials.

COPD and Respiratory Failure

- ▶ Non-invasive mechanical ventilation.
- ▶ Respiratory rehabilitation.
- ▶ Pathophysiology.
- ▶ Exacerbation.

Obstructive Sleep Apnoea (OSA)

- ▶ Physiology and clinical, diagnostic and treatment consequences of sleep disorders.
- ▶ Obesity-hypoventilation syndrome.
- ▶ Analysis of airway inflammation in patients with OSA.

Challenges

- ▶ Consolidate a leading clinical trial unit in respiratory diseases.
- ▶ Capture pre-clinical development contracts from the pharmaceutical and biotech industry, using the capabilities of our basic research lab and experimental animal models.
- ▶ Recruit research trainees seeking a doctorate degree.
- ▶ Support the development of multidisciplinary research networks such as the Barcelona Respiratory Network and the Programme for Integrated Research for Asthma of the Spanish Society of Pneumology and Thoracic Surgery (SEPAR), and collaborate with or become involved in existing networks such as CIBER-Respiratory Disorders.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Ear, Nose and Throat Cancers (collaboration of Dr. V. Plaza in the EPONA study).
- ▶ Genetics and Vascular Surgery Departments (collaboration of Dr. V. Plaza in the TAGA study).

External Collaborations

- ▶ Dr. V. Plaza. Emergent Asthma Group, SEPAR.
- ▶ Dr. V. Plaza. INASMA Group.
- ▶ Drs. V. Plaza and D. Ramos Barbón. Integrated Research Programme (PII) for Asthma, SEPAR.
- ▶ Drs. V. Plaza and D. Ramos Barbón. Group associated with CIBER-Respiratory.
- ▶ Drs. V. Plaza and D. Ramos Barbón. Severe Heterogenous Asthma Research collaboration, Patient-centered (SHARP) of the European Respiratory Society
- ▶ Dr. D. Castillo Villegas. National Institute for Rare Diseases, Instituto de Salud Carlos III, Madrid, Spain.

- ▶ Dr. D. Castillo Villegas. International Working Group on Langerhans Cell Histiocytosis and EUROHISTIONET.
- ▶ Dr. D. Ramos Barbón (PI). Multicentre Biobank of Bronchial Biopsies for Asthma Research, with collaborators as follows:
 - Dr. Carlos Martínez Rivera from Hospital Universitari Germans Trias i Pujol, Badalona, Spain.
 - Dr. Antolín López Viña from Hospital Universitario Puerta de Hierro, Madrid, Spain.
 - Dr. Francisco Javier González Barcala from Complejo Hospitalario de Pontevedra, Spain.
 - Dr. Teresa Bazús González from Hospital Universitario Central de Asturias, Oviedo, Spain.
 - Dr. Luis Pérez de Llano from Hospital Lucus Augusti, Lugo, Spain.
 - Dr. Patrick Berger from Université Bordeaux 2, Bordeaux, France.
 - Dr. James G Martin from McGill University, Montreal, Canada.

Active Grants

- ▶ Mercedes Mayos Pérez. Proyecto PASHOS: Plataforma Avanzada para el estudio del Síndrome de Apnea Hipopnea del Sueño (SAHS): Estudio de validación de un modelo de criba del SAHS en Atención Primaria. PI14/01985. Instituto de Salud Carlos III. Duration: 2015-2018. 19,400.00 €.
- ▶ David Ramos Barbón. Mecanismos patogénicos versus terapéuticos de las células madre mesenquimales sobre la remodelación bronquial en asma: prueba de concepto para subsiguiente desarrollo farmacéutico. PI14/00257. Instituto de Salud Carlos III. Duration: 2015-2019. 121,500.00 €.
- ▶ Oriol Sibila Vidal. El microbioma respiratorio en la EPOC; relación con la respuesta inmune pulmonar y sistémica. PI15/02042. Instituto de Salud Carlos III. Duration: 2016-2018. 72,000.00 €.
- ▶ Alfonso Torrego Fernández. Estudi dels mecanismes fisiopatològics i resultats de l'aplicació de termoplàstia bronquial en asma greu. BECA VIFOR - FUCAP 2015. Fundació Catalana de Pneumologia. Duration: 2015-2018. 10,363.65 €.
- ▶ Oriol Sibila Vidal. Respiratory Microbiome and COPD exacerbations. RAMON PLA ARMENGOL 2015. Fundació Ramón Pla Armengol. Duration: 2015-2018. 63,636.36 €.
- ▶ David Ramos Barbón. Desarrollo clínico y validación de biomarcadores de un nuevo tratamiento oral para el asma a través de un ensayo de fase II. RTC-2016-4698-1. Ministeri d'Economia i Competitivitat. Duration: 2016-2018. 178,150.00 €.
- ▶ Astrid del Carmen Crespo Lessmann. Validación de la medición de la IgE total e IgE específica en el esputo inducido de pacientes con asma alérgica y no alérgica. BECA LETI 2016. Fundació Catalana de Pneumologia. Duration: 2016-2018. 10,909.08 €.
- ▶ Diego Castillo Villegas. Caracterización genética y funcional de la histiocitosis pulmonar de células de langerhans: Implicaciones diagnósticas y terapéuticas. EPID-FUTURO 2013. Societat Espanyola de Pneumologia i Cirurgia Toràcica. Duration: 2013-2017. 5,291.00 €.
- ▶ Oriol Sibila Vidal. Infección bronquial en pacientes con EPOC y agudizaciones frecuentes; papel de la inmunidad innata y utilidad de una nariz electrónica para su diagnóstico. ASTRAZENECA 2015-1. Fundació AstraZeneca. Duration: 2015-2017. 20,000.00 €.
- ▶ Oriol Sibila Vidal. Infección bronquial en pacientes con EPOC y agudizaciones frecuentes; papel de la inmunidad innata y utilidad de una nariz electrónica para su diagnóstico. SEPAR 2014. Societat Espanyola de Pneumologia i Cirurgia Toràcica. Duration: 2016-2017. 12,847.61 €.
- ▶ Guillermo Rafael Suarez Cuartín. Infección bronquial en pacientes con bronquiectasias NO-FQ: papel de los mecanismos de defensa pulmonar y utilidad de una nariz electrónica para su diagnóstico. BECA BECARI SOCAP 2016. Societat Catalana de Pneumologia. Duration: 2016-2017. 13,090.91 €.
- ▶ Oriol Sibila Vidal. Infección bronquial en pacientes con bronquiectasias No-FQ: Papel de los mecanismos de defensa pulmonar y utilidad de una nariz electrónica para su diagnóstico. SEPAR 2015 - BECARI. Societat Espanyola de Pneumologia i Cirurgia Toràcica. Duration: 2016-2017. 17,100.00 €.
- ▶ Ana María Rodrigo Troyano. El microbioma respiratorio en la EPOC; relación con la respuesta inmune pulmonar y sistémica. IR16-R2. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2016-2017. 35,500.00 €.
- ▶ Oriol Sibila Vidal. Impacto del tabaquismo sobre los mecanismos de defensa pulmonar y la infección bronquial en pacientes con EPOC y agudizaciones frecuentes. FUCAP 2015 (La Caixa). Fundació Catalana de Pneumologia. Duration: 2015-2018. 13,300,00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Ana María Rodrigo Troyano, El microbioma respiratorio en la EPOC; relación con la respuesta inmune pulmonar y sistémica. BECA BECARI SOCAP 2017. Societat Catalana de Pneumologia. Duration: 2017-2018. 14,400.00 €.
- ▶ Vicente Plaza Moral, Asma Neutròfílica y/o No Eosinofílica. Proyecto ANNE. PI17/01950. Instituto de Salud Carlos III. 2018-2020. 87,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Chronic Respiratory Diseases

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Ceccato A., Cilloniz C., Ranzani O.T., Menendez R., Agusti C., Gabarrus A., Ferrer M., Sibila O., Niederman M.S., Torres A., Treatment with macrolides and glucocorticosteroids in severe community-acquired pneumonia: A post-hoc exploratory analysis of a randomized controlled trial (2017) *PLOS ONE*, 12 (6).

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Research Group in HIV and AIDS



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Main Lines of Research

- ▶ Medical care projects.
- ▶ Study of pathogenic mechanisms altering body fat distribution.
- ▶ Study of metabolic disorders associated with antiretroviral treatment.
- ▶ Body composition changes.
- ▶ New antiretroviral drugs.
- ▶ Cardiovascular risk associated with antiretroviral treatment.
- ▶ Comorbid conditions associated with HIV-1 infection.
- ▶ Pharmacogenetics (toxicokinetics).
- ▶ Bacterial meningitis.

Medical Care Projects

- ▶ Continuing with, expanding and, as appropriate, consolidating the care team for HIV-1 infected patients, consisting currently of 3 staff physicians, 4 grantaided research assistants (including a Río Hortega-funded research assistant) and 2 nurses).
- ▶ Continuing with participation in multicentre projects (especially the AIDS network, Gesida, VACH, EuroSIDA and ART collaboration).
- ▶ Exploration of possible participation in clinical trials of new antiretroviral drugs.
- ▶ Increasing the number of HIV-1 infected patients attended to in our hospital (given current mortality rates, an estimated annual increase of 50 patients is required).
- ▶ Continuing with current clinical research and mixed basic research-clinical research lines.

Pathogenic mechanisms altering body fat distribution

- ▶ Study of metabolism in pyrimidines and derivatives in the genesis of lipodystrophy associated with HIV-1 and antiretroviral treatment.
- ▶ Development of an animal (mouse) model of lipodystrophy.
- ▶ Development of in vitro models (adipocyte cultures) to study the adipose toxicity of antiretroviral drugs.
- ▶ Study of new manifestations of the lipodystrophy syndrome.
- ▶ Development of measurements for antiretroviral drug concentrations in adipose tissue.
- ▶ Exploration of the role of inflammation in the pathogenesis of lipodystrophy associated with HIV-1 and antiretroviral treatment.
- ▶ Metabolism of uridine and its role in the pathogenesis of lipodystrophy.

Metabolic disorders associated with antiretroviral treatment

- ▶ In vivo assessment of metabolic toxicity associated with antiretroviral treatment.
- ▶ Development of in vitro models (adipocyte cultures) to study the adipose toxicity of antiretroviral drugs.
- ▶ Study of factors contributing to hepatic steatosis in patients receiving antiretroviral treatment.
- ▶ Study of the pathogenic role of FGF21 in insulin resistance in HIV-1- infected patients.
- ▶ Study of role of FABP4 in metabolic disorders associated with antiretroviral treatment.

Body composition

- ▶ Definition of normal fat distribution in the general population.
- ▶ Establishment of abnormal fat distribution patterns.
- ▶ Development of a definition of lipodystrophy associated with HIV-1 and antiretroviral treatment.

New antiretroviral drugs

- ▶ Clinical trials of new antiretroviral drugs (phases 2 and 3).
- ▶ Ritonavir and non-ritonavir pharmacokinetic potentiation of antiretroviral drugs.

Cardiovascular risk associated with antiretroviral treatment

- ▶ Establishment of a multicentre cardiovascular risk cohort.
- ▶ Study of antiretroviral treatmentdependent and non-treatmentdependent factors in multicentre cohorts.
- ▶ Development of in vitro models (adipose cultures) to study adipose toxicity for antiretroviral drugs.

Challenges

Challenges

Comorbid conditions associated with HIV-1 infection

- ▶ Study of ageing in different tissues associated with HIV-1 infection and antiretroviral treatment.
- ▶ Study of fragility in patients with HIV-1 infection and the role of HAART.
- ▶ Evaluation of the neurocognitive function in patients with HIV-1 infection with and without antiretroviral treatment.
- ▶ Participation in multicentre cohort studies to determine the incidence of specific comorbidities (cancer, HCV, cardiovascular disease, osteogenesis/osteoporosis): EuroSIDA, ART Collaboration, Gesida, VACH, etc.
- ▶ Treatment of HCV in patients with HIV-1 and its prognostic significance.

Pharmacogenetics (toxicogenetics)

- ▶ Role of enzyme polymorphism of the pyrimidine pathways in the pathogenesis of lipodystrophy.
- ▶ Role of enzyme polymorphism of the pyrimidine pathways in the pathogenesis of clinical toxicity (neuropathy, pancreatitis).
- ▶ Role of IL28B polymorphism in spontaneous HCV clearance in the response to antiviral treatment based on interferon and ribavirin.

Bacterial meningitis

- ▶ Identification of prognostic factors in adult bacterial meningitis.
- ▶ Continuation with a cohort study of adult bacterial meningitis.
- ▶ Identification of host-intrinsic factors in the in the pathogenesis and prognosis of adult bacterial meningitis and meningococcal disease.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Microbiology and Infectious Diseases (Dr. Pere Coll).

Active Grants

- ▶ Pere Domingo Pedrol. El sistema FGF23/alpha-Klotho como mediador de las comorbilidades no directamente relacionadas con la infección por VIH en el eje cardio-osteo-renal. PI14/00700. Instituto de Salud Carlos III. Duration: 2015-2017. 116,500.00 €.
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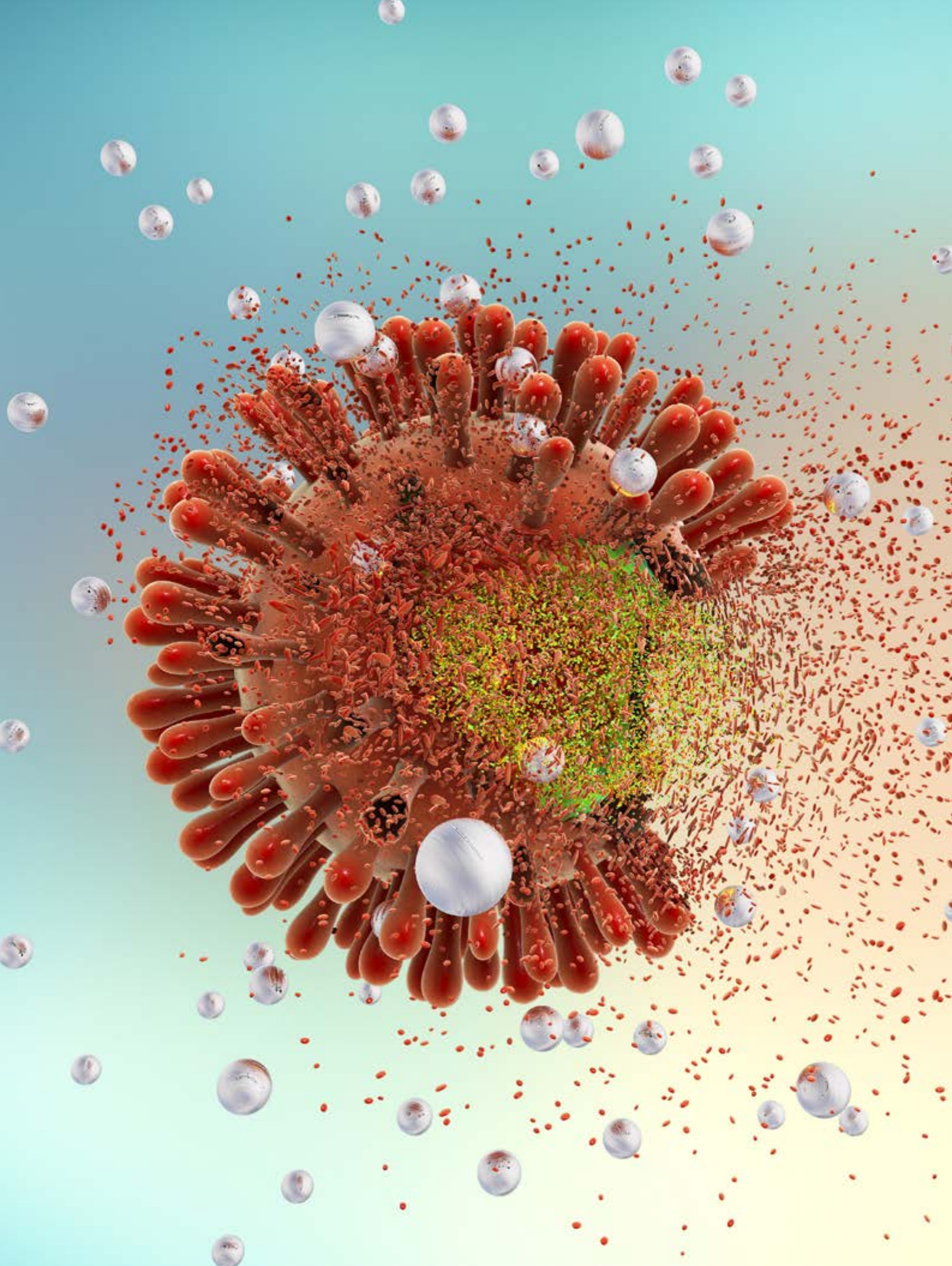
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Main Lines of Research

- ▶ Genetics and molecular biology of cancer-prone genetic syndromes with a focus in familial breast cancer and Fanconi Anemia. Genetic characterization of Fanconi patients and identification of new genes involved in the disease and into hereditary breast cancer syndrome and its functions.
- ▶ Development of new diagnostic and therapeutic tools in Fanconi anemia, including gene therapy, regenerative medicine and drug repurposing.
- ▶ Mechanism of genomic instability and predisposition to cancer. Study of DNA repair and biological and clinical consequences of DNA repair failure.
- ▶ Fanconi/BRCA pathway in cancer. Implications of Fanconi genes in cancer and their use as therapeutic target against cancer.

Challenges

- ▶ Our research interests are cancer-prone genetic syndromes with defective DNA repair with special focus in Fanconi anemia and familial cancer syndromes. We perform genetic, molecular biology and therapeutic research including gene discovery, mechanisms of DNA repair, gene and cell therapy approaches and cell-based drug screening platforms. A long term goal is to understand the mechanisms that maintain genome stability and protect us from disease, cancer, and ageing to improve the diagnostics and find novel therapeutic strategies.

Collaborations with other IIB Sant Pau Groups

- ▶ Dr. Isabel Badell. Unit of Hematology, Oncology y Hematopoietic Stem Cell Transplant, Pediatrics Service, Hospital de la Santa Creu i Sant Pau.
- ▶ Dr. Csilla Krausz' team, Andrology Department, Fundació Puigvert, Universitat Autònoma de Barcelona, Institut d'Investigacions Biomèdiques Sant Pau (IIB-Sant Pau), Barcelona.

stitute for Biomedical Research (IDIBELL), L'Hospitalet del Llobregat, Barcelona.

- ▶ Breast Cancer and Systems Biology Laboratory, Program Against Cancer Therapeutic Resistance (ProCURE), ICO, IDIBELL, L'Hospitalet del Llobregat, Barcelona.
- ▶ Centro Andaluz de Biología Molecular y Medicina Regenerativa (CABIMER) and Departamento de Genética, Universidad de Sevilla, Spain.
- ▶ Hereditary Cancer Programme, ICO, Girona Biomedical Research Institute (IDIBGI), Girona, Spain.

External Collaborations

National collaborations

- ▶ Juan A. Bueren, CIEMAT, Madrid
- ▶ Luis A. Perez Jurado, UPF, Barcelona
- ▶ Joaquín Dopazo, CIPF, València
- ▶ Miquel Àngel Pujana, ICO, Hospitalet
- ▶ Csilla Krautz, Fundació Puigvert, Barcelona
- ▶ Cristina Diaz de Heredia, H. Vall Hebron, Barcelona
- ▶ Albert Català, H. Sant Joan de Déu, Barcelona
- ▶ Judith Balmaña, H. Vall Hebron, Barcelona
- ▶ Xose Puente, Universidad de Oviedo, Oviedo
- ▶ Javier Benítez, CNIO, Madrid

Collaborating external institutions

- ▶ Hereditary Cancer Programme, Catalan Institute of Oncology (ICO), Bellvitge In-

- ▶ Oncogenetics Group, Hospital Universitari de la Vall d'Hebron; Vall d'Hebron Institute of Oncology (VHIO); Vall d'Hebron Institute of Research (VHIR); Universitat Autònoma de Barcelona, Barcelona, Spain.

- ▶ Human Cancer Genetics Program, Spanish National Cancer Research Centre (CNIO), Madrid, Spain.

- ▶ Unit of Molecular Bases of Genetic Risk and Genetic Testing, Department of Preventive and Predictive Medicine, Fondazione IRCCS (Istituto Di Ricovero e Cura a Carattere Scientifico) Istituto Nazionale dei Tumori (INT), Milan, Italy.

- ▶ IFOM, Fondazione Istituto FIRC di Oncologia Molecolare and Unit of Molecular Bases of Genetic.

International collaborations

- ▶ Detlev Schindler, University of Wursburg, Germany
- ▶ Paolo Radice, Cancer Institute of Milan, Italy

Collaborations

Collaborations

- ▶ Paolo Peterlongo, Cancer Institute of Milan, Italy
- ▶ Jean Soulier, Sant Lous Hospital de Paris, France
- ▶ Fergus Couch, Clinica Mayo, USA
- ▶ Minoru Takata, University of Kyoto, Japan
- ▶ Toomo Ogi, University de Nagasaki, Japó
- ▶ Publications with more than 100 international co-autors

Grants Awarded in 2017

- ▶ Pau Riera Armengol. Marcadores farmacogenéticos de respuesta/resistencia a las terapias biológicas (anti-EGFR) en cáncer colorrectal. FPU16/04968, Ministerio de Educación, Cultura y Deporte. Duration: 2017-2020. 51,327.00 €.
 - ▶ Jordi Surrallés. EUROFANCOLEN. Phase I/II Gene therapy trial of Fanconi anemia patients with a new Orphan Drug consisting of a lentiviral vector carrying the FANCA gene: A Coordinated International Action. European Commission. Duration: 2012-2017 (extended until 2018). HEALTH-F5-2012-305421. 260,424 €.
 - ▶ Jordi Surrallés. Drug screening and repurposing in Fanconi anemia therapeutics. Fanconi Anemia Research Foundation (FARF). Duration: 2016-2018. 144,275 €.
 - ▶ Jordi Surrallés. COFUND Project for a Postdoctoral Fellowship under the European Union's Horizon H2020 research and innovation program under the Marie Skłodowska-Curie grant agreement No 665919 between UAB and the European Commission. Acronym: P-SPHERE. 2016. Research line of the host laboratory: Targeting DNA repair in cancer and rare disease therapy. Recipient: Dr. Laia Roca.
 - ▶ Jordi Surrallés. Reparación del DNA y anemia de Fanconi: Investigación genética y aplicaciones terapéuticas (REPAIR-FANC). SAF2015-64152-R. Convocatoria Ayudas a proyectos I+D+I, Programa Estatal de Investigación, Desarrollo e Innovación orientada a los Retos de la sociedad. Ministerio de Economía y Competitividad. Duration: 2016-2018. 278,300 €.
 - ▶ Jordi Surrallés. Detección de mosaicismo clonal como marcador precoz de cáncer en pacientes con Anemia de Fanconi. Proyecto coordinado, CIBERER Acciones Cooperativas y Complementarias Intramurales (ACCI). Duration: 2016-2017. 34,500 €.
 - ▶ Investigación terapéutica en tumores escamosos. CIBERER Acciones Cooperativas y Complementarias Intramurales (ACCI). Duration: 2017-2018. 36,500 €.
- Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Fanconi Anemia International Fund Discovery Award, Atlanta, USA, 2017.

Theses

- ▶ Helena Montanuy Escribano. Investigación terapéutica y cribados de fármacos en Anemia de Fanconi. Universitat Autònoma de Barcelona. Director: Jordi Surrallés. Date of defense: 14/11/2017.
- ▶ Daniela Steigerwald. Synthetic lethal interactions in cancer treatment. Universitat Autònoma de Barcelona. Director: Jordi Surrallés. Date of defense: 01/05/2017.
- ▶ Cristina Camps. Targeting the Fanconi anemia/BRCA pathway in cancer treatment. Universitat Autònoma de Barcelona. Director: Jordi Surrallés. Date of defense: 03/04/2017.

Patents

- ▶ J. Minguillón, J.Surrallés, C.Lázaro, M.A.Pujana, Nou biomarcador pronòstic i terapèutic en càncer de mama i ovari. Titular entity: UAB, ICO. Sol.14/03/2016. European extension: april 2017, Ref.163821739.1403, Biomarcador, 03/04/2017.

Genome Instability and DNA Repair Syndromes

Transfer Products

- ▶ Agreement with Intelligent Pharma (PYTHIA SERVICE AGREEMENT). February 2017.
- ▶ Agreement with intelligent Pharma (Project: Targeting the Fanconi anemia pathway in drug discovery. March-july 2017.
- ▶ Research Agreement with Parioforma Limited. May 2017.
- ▶ Consulting agreement with Deerfield Management Company, L.P. January-december 2018.
- ▶ Research Agreement with Rocket Pharmaceuticals, USA. March 2018.
- ▶ Agreement with Boston Children's Hospital (Data and Material Use Agreement). USA. April 2018.
- ▶ The group hosts the Laboratory of Diagnosis of Chromosome Fragility of the Universitat Autònoma de Barcelona. <http://safcro.uab.es>. We performe service under invoice or signed agreement to more that 100 Spanish and European public and private hospitals and diagnostic and pharma companies.

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Scientific Production

Knies K, Inano S, Ramirez MJ, Ishiai M, Surrallés J, Takata M, and Schindler D. Biallelic mutations in the ubiquitin ligase RFD3 cause Fanconi. *JCLIN INVEST*. May (2017). 127; 8: 1-16.

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AREA 3

Haematological and Oncological D

114 Clinical Oncology

118 Oncogenesis and Antitumour Drugs

122 Haematological Diagnosis

124 Molecular Pathology of Gynaecologic Cancer

126 Ear, Nose and Throat Cancers

128 Oncology/Haematology and Transplantation

iseases



Clinical Oncology



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Main Lines of Research

Clinical

- ▶ Development of new therapeutic strategies.
- ▶ Studies to improve tumour staging.
- ▶ Studies to detect residual disease.

Translational

- ▶ Personalized anticancer therapy.
- ▶ Studies of predictive and prognostic molecular markers.

Challenges

- ▶ Consolidate clinical research into cancer.
- ▶ Foster translational research into cancer in cooperation with other internal and external research groups.
- ▶ Consolidate the bank of tumours, DNA and serum for patients with cancer diagnosed and treated in our hospital.
- ▶ Develop new early-stage drugs (phase 0/1 studies).

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Oncogenesis and Antitumour Drugs (Dr. Ramon Mangues).
- ▶ Molecular Pathology of Urologic Cancer (Dr. F Algaba)
- ▶ Genetic Diseases (Dr. Montserrat Baiget).

- ▶ Breast Cancer (Dr. E Lerma).

External Collaborations

- ▶ Tumoural progression modelling group at the Biomedical Research Institute (IRB) (Dr. A. Nebreda).
- ▶ Methylation and resistance to chemotherapy in ovarian cancer (Dr. M. Esteller).

Active Grants

- ▶ Daniel Escuín Borràs. Perfil de expresión de miRNAs en tumor primario de mama y sus ganglios linfáticos centinela: implicaciones en los mecanismos de invasión y su valor como marcadores metastásicos. PI13/00110. Instituto de Salud Carlos III. Duration: 2014-2018. 76,000.00 €.
- ▶ David Paez López-Bravo. La familia de los receptores tirosina kinasa ERBB y sus mecanismos reguladores: Identificación mediante NGS de variantes genéticas asociadas a las respuestas excepcionales a las terapias biológicas en cáncer colorrectal. AECC 2015-1. Asociación Española Contra el Cáncer. Duration: 2016-2018. 20,000.00 €.
- ▶ Georgia Anguera Palacios. Identificación de mutaciones que confieren sensibilidad a inhibidores de mTOR en Carcinoma renal de células cromóforas (chRCC), mediante estrategia de casos extremos. SOGUG 2015-2016. Grupo Español de Tratamiento de Tumores Urológicos. Duration: 2015-2017. 18,181.82 €.
- ▶ Anna Cristina Virgili Manrique. Marcadores de células madre embrionarias y mesenquimales en la predicción de respuesta al tratamiento en sarcomas de tejidos blandos de alto riesgo. IR16-R3. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2016-2017. 35,500.00 €.
- ▶ Margarita Majem Tarruella. Maneig dels pacients amb càncer de pulmó. IR16-E1. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 2,200.00 €.
- ▶ Ana Sebio Garcia. Estancia para la investigación clínica y traslacional en la Unidad de Sarcomas del Hospital Royal Marsden de Londres. MV16/00043. Instituto de Salud Carlos III. Duration: 2017-2017. 8,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Ana Sebio Garcia. Evaluación de las alteraciones de la distrofina y proteínas afines como factores pronósticos en pacientes afectos de leiomiomas. PI17/00143. Instituto de Salud Carlos III. Duration: 2018-2020. 61,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

- Ivana Sullivan. Pharmacogenetic studies and prognostic factors in non-small cell lung cancer. Universitat Autònoma de Barcelona. Directors: Agustí Barnadas Molins, Juliana Salazar Blanco. Date of defense: 22/09/2017.

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Oncogenesis and Antitumour Drugs



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Main Lines of Research

- ▶ Development of novel animal models of disseminated disease in solid tumours and haematological neoplasms for the mechanistic study of metastases and preclinical drug development.
- ▶ Identification of prognostic biomarkers in head and neck squamous cell carcinoma and their functional validation in vivo.
- ▶ Development of nanoconjugates for targeted delivery of antitumour drugs or toxins to metastasis stem cells.

Challenges

- ▶ Obtain funding to ensure stable employment of senior researchers, attract post-doctoral fellows and reinforce current collaborations with clinicians.
- ▶ Develop molecular markers for therapeutic decision-making in head and neck carcinomas.
- ▶ Achieve antimetastatic effects by targeting antitumour drugs to metastasis stem cells in solid tumors and haematological neoplasias.
- ▶ Enhance international collaboration and participation in EU networks and industrial projects.

Collaborations with other IIB Sant Pau Groups

- ▶ Collaboration with Dra. Isolda Casanova and Aïda Falgàs in: Teràpia dirigida de Auristatina E o Ara-C a cèlulas de leucèmia mieloide aguda que expresen CXCR4, receptor implicado en adhesión al estroma y quimiorresistencia. PI14/00450. IP: Jordi Sierra Gil. Instituto de Salud Carlos III. Duration: 2015-2018. 172,000.00 €.
- ▶ Collaboration of Dr. Irene Arroyo with the research group of the Otorhinolaryngology Service led by the Drs. Miquel Quer and Xavier León in the study of prognostic factors in head and neck cancer.
- ▶ Collaboration of Drs. María Virtudes Céspedes and Patricia Álamo and de Rita Sala with the research groups of the Services of Pharmacy (led by Dra. María Antònia Mangués), Pathological Anatomy (led by Drs. Enrique Lerma and Alberto Gallardo), Surgery (led by Dr. Manuel Trias) and Medical Oncology (led by Drs. Agustí Barnadas and Antonio López-Pousa), and Àlex Bayés and Marta Valle groups at IIB-Sant Pau. Project: Targeted nanoconjugates for the selective elimination of stem cells in disseminated cancer. PIE15/00028. IP: Ramon Mangués. Instituto de Salud Carlos III. Duration: 2016-2018. 423,912.00 €.

National Collaborations

- ▶ Eduard Batlle, Biomedical Research Institute (IRB) and Barcelona Scientific Park (PCB).
- ▶ Antonio Villaverde, Departament de Microbiologia Aplicada, Universitat Autònoma de Barcelona (UAB).
- ▶ CB06/01/1031. Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN). Insti-

tuto de Salud Carlos III. 2008-2018. 90,000-117,000€/year.

- ▶ OncoCat. Member of the Catalan Cancer Research Network. Xarxa ConnectEU, Biocat, Generalitat de Catalunya.
- ▶ NanoBioMed. Member of the Catalan Network on Nanobiotechnology, Xarxa Connect-EU. Biocat.

International Collaborations

- ▶ Achilea Bittencourt. Visiting Researcher, International Cooperation with Brasil, MCT/CNPq 046/2010.
- ▶ Paolo Micheli, Institute for Cancer Research and Treatment, Candiol, Turin (Italy).
- ▶ Arne Östman, Cancer Center Karolinska, Karolinska Institutet, Stockholm (Sweden).
- ▶ Alberto Bardelli, University of Torino, Medical School, Turin (Italy).
- ▶ Ramon Mangués collaborates with the French Institute National du Cancer (INCa), by being Member of the Scientific Evaluation Committee of the Translational Cancer Research Programme (PRT-K) since 2016, Ministry of Health (DGOS) and
- ▶ ATMP-EATRIS, European Union. Member of the Working Group on Advanced therapies and biologicals of ATMP (Advanced Therapy Medicinal Products), EATRIS (European Infrastructure for Translational Medicine) Network.
- ▶ ETP Nanomedicine, European Union, Member of the European Technology Platform on Nanomedicine.
- ▶ TME-AACR member. Member of the Tumor Microenvironment Working Group, American Association for Cancer Research (AACR).

Collaborations

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- ▶ Ramon Mangues Bafalluy. Desenvolupament d un nanoconjugat antimetastàtic dirigit a cèl·lules mare metastàtiques CXCR4+. 2014 PROD 00055. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2015-2017. 89,500.00 €.
- ▶ Ramon Mangues Bafalluy. Prevención de metástasis en cáncer colorrectal mediante terapia dirigida a células madre metastáticas y estromales. PI15/00378. Instituto de Salud Carlos III. Duration: 2016-2018. 172,000.00 €.
- ▶ Virtudes Céspedes Navarro. Contratos Miguel Servet I 2015. MS15/00163. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500.00 €.
- ▶ Virtudes Céspedes Navarro. Nanoconjugates for targeted therapy against CXCR4+ cancer stem cells in pancreatic cancer. CP15/00163. Instituto de Salud Carlos III. Duration: 2016-2018. 121,500.00 €.
- ▶ Ramon Mangues Bafalluy. Targeted nanoconjugates for the selective elimination of stem cells in disseminated cancer. PIE15/00028. Instituto de Salud Carlos III. Duration: 2016-2018. 423,912.00 €.
- ▶ Rita Sala Faig. Contractes predoctorals de formació en investigació en salut 2016. FI16/00017. Instituto de Salud Carlos III. Duration: 2017-2020. 82,400.00 €.
- ▶ Ramon Mangues Bafalluy. Papel de las células natural killer y del receptor CXCR4 en el desarrollo de metástasis en cáncer colorrectal. IR16-P2. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 7,000.00 €.
- ▶ Ugutz Unzueta Elorza. Contractes "Sara Borrell" 2014. CD14/00055. Instituto de Salud Carlos III. Duration: 2015-2018. 86,598.00 €.
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- ▶ Carmen Cabrera Rodriguez. Ayudas para personal técnico de apoyo a infraestructuras. convocatoria 2013. Plataforma de Nanotoxicología. Centro de Investigación en Red en Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN). PTA2013-8426-I. MINECO. Duration: 2015-2017. 36,000 €.
- ▶ Ramón Mangues. Humanized antitumoral nanodrug for the treatment of CXCR4-positive cancers (CIBER-BBN Technology Transfer Program (coordinated project). Group PI and coordinator: Antonio Villaverde (NBT-UAB). Industrial Partner: Nanoligent SL. Finance Agencies: CIBER-BBN and Nanoligent SL. Nanotracer. BBN-TRF17. Duration: 2017-2018. 35,000 €.

Note: Total amount granted to PI. It does not include indirect costs.

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- ▶ Aida Falgas Comamala, Avalució de l'activitat antitumoral de nous nanoconjugats dirigits al receptor CXCR4 en Limfoma Difús de Cèl·lules Grans B (LDCGB). 2017 FI_B 00680. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2020. 40,806.00 €.
- ▶ Virtudes Céspedes Navarro. Terapia dirigida para la eliminación selectiva de células madre metastáticas CXCR4+ en cáncer de endometrio. FMM 2017. Fundación Mutua Madrileña. Duration: 2017-2020. 133,333.33 €.
- ▶ Virtudes Céspedes Navarro. Nanoterapia dirigida y radioterapia SBRT combinada para la eliminación selectiva de células madre tumorales en cáncer de páncreas. PI17/00150. Instituto de Salud Carlos III. Duration: 2018-2020. 123,000.00 €.
- ▶ Ramon Mangues Bafalluy. Émbolos tumorales circulantes hCXCR4/SerpinE1 en el pronóstico del cáncer de cabeza y cuello. PI17/00584. Instituto de Salud Carlos III. Duration: 2018-2020. 90,000.00 €.
- ▶ Ramon Mangues Bafalluy. Implicación de la vía CXCR4/CXCL12/CXCR7 en la resistencia, recidiva y fenotipo de célula madre de la leucemia mieloide aguda. PI17/01246. Instituto de Salud Carlos III. Duration: 2018-2020. 108,000.00 €.

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- ▶ Irene Arroyo Solera. Estudio del valor pronóstico de Serpina E1 y su papel en el crecimiento y la diseminación metastática del carcinoma escamoso de cabeza y cuello. Universitat de Barcelona. Directors: Ramon Mangues and Miguel Angel Pavón. Date of defense: 24/06/2017.

Transfer Products

- ▶ Company: NANOLIGENT, SLU. (B-66970088). Spin-off of the Biomedical Research Institute Sant Pau. Founding members: M. Rodríguez-Mariscal, Ramon Mangues, Antonio Villaverde, and Esther Vázquez. Date of constitution: 03/13/2017.

Oncogenesis and Antitumour Drugs

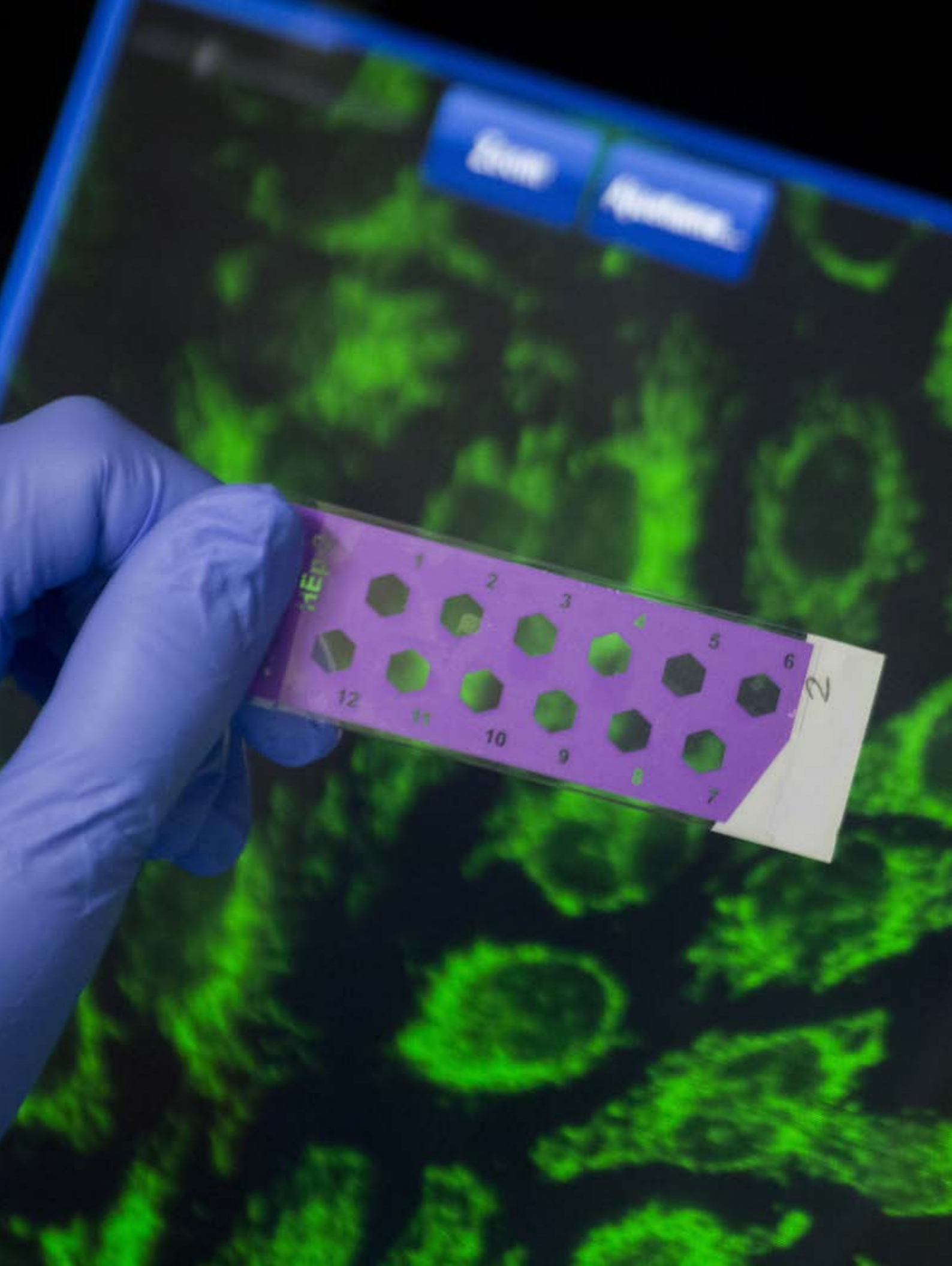
Patents

- ▶ Inventors: Antonio Villaverde, Esther Vázquez, Ugutz Unzueta, Ramon Mangues, María Virtudes Céspedes, Isolda Casanova. Owner Companies: Universitat Autònoma de Barcelona, Fundació Privada Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau and Centro de Investigación Biomédica en Red. Therapeutic Nanoconjugates And Uses Thereof. European Patent Office. Application number: EP17382461, PCT. 14/07/2017.
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Focus

Acquisition

NEP

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2

Haematological Diagnosis



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Main Lines of Research

- ▶ Hematologic malignancies: diagnostics (morphology, cytogenetics, flow cytometry, molecular diagnostics).
- ▶ Next generation sequencing, genomic (microarrays) and proteomic platforms for diagnosis.
- ▶ Patient's derived xenografts.
- ▶ Noncancerous haemopathologies
- ▶ Diagnosis and characterization of thrombocytopenias, thrombocytopathies and other platelet pathologies, especially complex pathologies (of genetic, mixed or unknown origin) and including unusual presentations of common diseases.
- ▶ In the framework of the GAIT-2 (genetic analysis of idiopathic thrombophilia, phase 2) project, to seek new phenotypes that favour the development of thrombosis, specifically related to the structure and function of platelets and other blood cells.

Challenges

- ▶ Consolidate characterization of haematological tumours and complex, rare and genetic noncancerous haematopathologies.
- ▶ Sampling management: isolation of neoplastic and non-neoplastic cells.
- ▶ Include the results of mass-analysis genomic and proteomic platforms in diagnostic algorithms and establish prognostic factors for haematological disorders, preferably complex or genetic neoplasms and noncancerous pathologies.
- ▶ Set up animal models in hematologic malignancies.
- ▶ Consolidate cooperation with the GAIT-2 project, especially regarding platelet and other blood cell participation in thrombosis generation.
- ▶ Promote interaction and stable links with internal groups (clinical hematology, pathology, gastrointestinal, hemostasis and thrombosis, complex disease genomics areas) and with other groups in Spain and abroad, especially those with complementary technologies.

Collaborations

Collaborations with other IIB Sant Pau Group

- ▶ Dr. Matilde Parreño:
 - Josep Francesc Nomdedéu Guinot, Matilde Parreño. Instituto de Salud Carlos III. PI/00940. Duration: 2017-2019. 80,465 €.
 - Support grants to the Research Groups of Catalonia. Grup de Diagnòstic Hematològic. AGAUR 2017. 2017-SGR-383. Duration: 2017-2019.
- ▶ Oncology/Haematology and Transplantation (PI: Jordi Sierra).
- ▶ Molecular Bases of Disease (PI: Pablo Fuentes).
- ▶ Dr. Ramon Mangues/Isolda Casanova.

External Collaborations

- ▶ Dr. G. Saglio. Torino University.
- ▶ Dr. G. Gaidano. Novara University.
- ▶ Dr. Anna Bigas, IMIM (Hospital del Mar).
- ▶ Dr. Luciano di Croce. CRG. Barcelona.
- ▶ Dr. Pablo Menéndez. Josep Carreras Foundation (Hospital Clínic).
- ▶ Dr. Alberto Villanueva. IDIBELL-Bellvitge Biomedical Research Institute.
- ▶ Dr. G. Vassiliou. Sanger Center. Cambridge. UK

Active Grants

- ▶ Josep Francesc Nomdedéu Guinot. Diagnostic Hematologic. 2014 SGR 383. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 30,000.00 €.
- ▶ Josep Francesc Nomdedéu Guinot. Heterogeneidad clonal en leucemia mieloide aguda: caracterización inmunofenotípica, genotípica y mediante generación de xenografts. PI16/00940. Instituto de Salud Carlos III. Duration: 2017-2019. 66,500.00 €

Note: Total amount granted to PI. It does not include indirect costs.

*TIF: 18.71 **MIF: 3.742

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Molecular Pathology of Gynaecologic Cancer



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Prat Díaz de Losada, Jaime FGS
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Main Lines of Research

- ▶ Pathogenic mechanisms of cancer (endometrial/ovarian cancer and others).
- ▶ Molecular mechanisms of stromal response and immunosuppression in endometrial cancer.
- ▶ Clinical application of prognostic factors in common cancers.
- ▶ Clinical application of tumour markers.
- ▶ Molecular biology of uterine and extra-uterine sarcomas.

Challenges

- ▶ Cooperate with other groups at the national and international levels.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Experimental Immunology (Silvia Vidal).
- ▶ Estudio de las alteraciones del metabolismo intracelular del colesterol en el cáncer de mama y carcinoma epitelial de tiroides: Evaluación de estrategias terapéuticas basadas en la HDL. (Juan Carlos Escolà Gil). PI16/00139. Instituto de Salud Carlos III. Duration: 2017-2020.
- ▶ Endocrinology, Diabetes and Nutrition (Dra. Rosa Corcoy)

External Collaborations

Molecular alterations related with progression in endometrial cancer (Spanish Association Against Cancer, AECC):

- ▶ Dr. Jaume Reventós. Vall d'Hebron Hospital Research Institute (VHIR), Barcelona, Spain.
- ▶ Dr. Xavier Matias-Guiu. Institute for Biomedical Research (IRB Lleida), Lleida, Spain.
- ▶ Dr. Miguel Abal. Santiago de Compostela University Hospital Complex (CHUS), Spain.
- ▶ Dr. Gema Moreno. Fundación MD Anderson Internacional, Madrid, Spain.

Active Grants

- ▶ Jaime Prat Díaz De Losada. Red Temática de Investigación Cooperativa en Cáncer (RTICC). RD12/0036/0011. Instituto de Salud Carlos III. Duration: 2013-2017. 160,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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IF: 2.392

Ear, Nose and Throat Cancers



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Orus Dotu, Cesar FGS
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Main Lines of Research

- ▶ Genetic and molecular predictors of response to head and neck cancer (with the Oncogenesis and Antitumour Drugs group).
- ▶ Molecular mechanisms of inflammation in head and neck cancer (with the Inflammation Laboratory).
- ▶ Nasosinal endoscopic surgery: innovations in skull base techniques.
- ▶ Internal ear: aspects related to severe deafness, cochlear implants and otoneurological surgery of tumours.

Challenges

- ▶ Promote clinical and translational research into head and neck cancer with a very large database of head and neck cancers.
- ▶ Study relevant clinical issues in depth (second-third neoplasms, staging concerns, prognostic factors, etc) and investigate translational aspects such as genetic and molecular predictors.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Angiology, Vascular Biology and Inflammation (Dr. Lluís Vila).
- ▶ Oncogenesis and Antitumour Drugs (Dr. Ramon Mangues).
- ▶ Translational Molecular Oncology (Dr. Matilde Parreño).

External Collaborations

- ▶ Catalan Institute of Oncology: Epidemiology (Dr. X. Bosch).
- ▶ Catalan Institute of Oncology: Oncology (Dr. Ricard Mesia).
- ▶ Hospital Joan XXIII: Head and Neck Cancer (Dr. F.J. Avilés).
- ▶ Hospital Central de Asturias: Head and Neck Cancer (Dr. C. Suárez).

Active Grants

- ▶ Xavier Leon Vintró. Herramienta de predicción de respuesta a la radioterapia basada en la expresión de genes relacionados con la transición epitelial-mesénquimal en cáncer de cabeza y cuello. PI14/01918. Instituto de Salud Carlos III. Duration: 2015-2018. 71,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Miquel Quer Agustí, Émbolos tumorales circulantes hCXCR4/SerpinE1 en el pronóstico del cáncer de cabeza y cuello. PI17/00584. Instituto de Salud Carlos III. Duration: 2018-2020. 2,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Ricard Simó. Intrathoracic goitres: comparative study of the transcervical approach versus the combined cervicothoracic. Universitat Autònoma de Barcelona. Directors: Miquel Quer and Xavier León. Date of defense: 11/05/2017.
- ▶ Jose Miguel Costa González. Impacto del carcinoma de cabeza y cuello en la actividad laboral de los pacientes. Universitat Autònoma de Barcelona. Directors: Miquel Quer, Xavier León and Montserrat López. Date of defense: 17/02/2017.

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IF: 1.546

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IF: 1.546

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IF: 3.085

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IF: 1.546

Martel M., Alemany L., Taberna M., Mena M., Tous S., Bague S., Castellsague X., Quer M., Leon X., The role of HPV on the risk of second primary neoplasia in patients with oropharyngeal carcinoma (2017) *ORAL ONCOL*, 64, 37-43.

IF: 4.636

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IF: 1.546

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IF: 1.387

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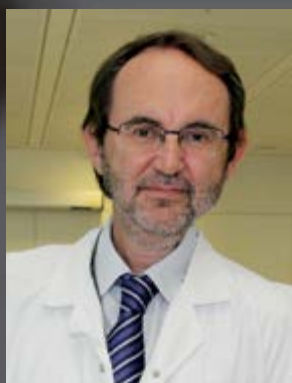
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IF: 2.471

Oncology/Haematology and Transplantation



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Main Lines of Research

- ▶ Study of the molecular and cellular pathophysiology of haematological cancers.
- ▶ Study of the prognostic value of clinical and biological parameters in haematological malignancies.
- ▶ Design of new modalities of chemotherapy, biotherapy and drug treatment targeting molecular mechanisms.
- ▶ Design of new modalities of haematopoietic stem-cell transplantation and cell therapy.
- ▶ Psychological intervention and quality of life in patients with haematological malignancies.

Challenges

- ▶ Identify new prognostic parameters for risk and therapeutic stratification.
- ▶ Evaluate targeted therapy in cell lines and animal models (with the Oncogenesis and Antitumour Drugs group).
- ▶ Reduce toxicity and increase availability of allogeneic transplants.
- ▶ Molecularly characterize acute myeloid leukaemia and determine the prognostic value of known genes and other genes of uncertain significance (with the Haematology Laboratory).
- ▶ Model leukaemia and lymphoma in animals to better understand cell pathophysiology and test new drugs (with the Oncogenesis and Antitumour Drugs group).
- ▶ Molecularly characterize and determine the prognostic significance of cell pathophysiology and immunotherapy for lymphoproliferative diseases and evaluate antitumour immunotherapy in animals and humans.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Oncogenesis and Antitumour Drugs (Dr. Ramon Mangués).
- ▶ Haematological Diagnosis (Dr. Josep Nomedéu).
- ▶ Microbiology and Infectious Diseases (Dr. Pere Coll).

External Collaborations

- ▶ Carlos III Health Institute Cooperative Cancer Research Network (RTICC): J. Sierra, coordinator.

- ▶ European Research Initiative on Chronic Lymphocytic Leukemia (ERIC): C. Moreno, coordinator.
- ▶ Spanish lymphoma transplantation groups (GELTAMO): J. Briones, S. Novelli.
- ▶ Spanish haematologic malignancies consortium (PETHEMA): J. Sierra, M. Granell, S. Brunet.
- ▶ Spanish CETLAM acute myeloid leukaemia and myelodysplasia group hospitals: coordinator, S. Brunet.
- ▶ European Leukaemia Network of Excellence groups.

Active Grants

- ▶ Jordi Sierra Gil. Red Temática de Investigación Cooperativa en Cáncer (RTICC). RD12/0036/0071. Instituto de Salud Carlos III. Duration: 2013-2017. 321,500.00 €.
- ▶ Javier Briones Meijide. Memory stem T cells transduced with a chimeric antigen receptor targeting CD30 for the treatment of hodgkin lymphoma. 20130710. Fundació La Marató de TV3. Duration: 2014-2017. 153,970.00 €.
- ▶ Jordi Sierra Gil. Grup de diagnòstic i tractament de les neoplàsies hematològiques. 2014 SGR 1281. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2015-2017. 18,000.00 €.
- ▶ Jordi Sierra Gil. Terapia dirigida de Auristatina E o Ara-C a células de leucemia mieloide aguda que expresan CXCR4, receptor implicado en adhesión al estroma y quimiorresistencia. PI14/00450. Instituto de Salud Carlos III. Duration: 2015-2018. 191,500.00 €.
- ▶ Alba Mora Raya. Caracterització immunofenotípica i molecular de la malaltia residual en leucèmia limfàtica crònica. 2015 FI_B 00295. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2015-2018. 58,965.00 €.
- ▶ Javier Briones Meijide. Terapia génica 2.0: nueva generación de vectores virales episomales de alta bioseguridad y su desarrollo pre-industrial. RTC-2015-3393-1. Ministeri d'Economia i Competitivitat. Duration: 2015-2018. 112,138.60 €.
- ▶ Javier Briones Meijide. Advancecat: aceleradora pel desenvolupament de teràpies avançades a Catalunya. COMRDI15-1-0013. BIOCAT. Duration: 2016-2019. 39,927.96 €.
- ▶ Javier Briones Meijide. Celulas T de memoria "STEM" transducidas con un receptor quimerico antigeno-especifico (CAR) dirigido al antigeno BCMA en linfoma de Hodgkin. PI15/01383. Instituto de Salud Carlos III. Duration: 2016-2018. 51,500.00 €.
- ▶ Carolina Moreno Atanasio. Long-term survivors in Chronic Lymphocytic Leukemia. AECC 2015-2. Associació Espanyola Contra el Càncer. Duration: 2016-2018. 20,000.00 €.
- ▶ Javier Briones Meijide. Memory stem T cells with optimized chimeric antigen receptors targeting CD30 for the treatment of peripheral T cells lymphomas. DJCLS 10R/2016. Fundació Josep Carreras Internacional. Duration: 2017-2020. 135,000.00 €.
- ▶ Carolina Moreno Atanasio. Anàlisi de l'expressió i funció del FcγRIIb en cèl·lules B normals i en leucèmia limfàtica crònica. Conveni CELLEX-2. Fundació CELLEX. Duration: 2015-2018. 118,181.82 €.
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tinez-Barranco P., Jarque I., Urquia M.A., Garcia-Donas G., Brunet S., Gonzalez F.A., Urbano A., Presence of acute and chronic renal failure in patients with paroxysmal nocturnal hemoglobinuria: results of a retrospective analysis from the Spanish PNH Registry (2017) ANN HEMATOL, 96 (10), 1727-1733.

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AREA 4

Neurological, Mental and Ageing

- 
- The background image features a computer monitor displaying a patient system interface. The interface includes a menu bar with 'Patient', 'System', and 'Help' options, and a clock showing '07:56'. Below the menu, there are various icons and text, including 'Patient', 'Stack A', and 'Copy'. To the right of the interface, a brain MRI scan is visible, showing a cross-section of the brain with a red grid overlay and a yellow circle highlighting a specific area. The MRI scan is labeled 'E:1' and 'S12'. At the bottom of the monitor, a table is visible with the following data:
- | 00:34:11 | |
|------------|------|
| Survey | |
| Ref_SHC_8 | Geo1 |
| IMRI SABOR | Geo3 |
| IMRI SABOR | Geo3 |
| SOPANIEVA | Geo3 |
- 136** Cerebrovascular Diseases
 - 140** Neuromuscular Diseases
 - 144** Parkinson Disease and Movement Disorders
 - 148** Molecular Neuropharmacology
 - 150** Pharmacological Research in Humans
 - 152** Clinical Psychiatry
 - 156** Genetics in Neurodegenerative Diseases

tal Disorders

158 Human Neuropsychopharmacology

160 Neurobiology of Dementia

166 Neuroradiology

168 Ageing Institute

172 Addictive Behaviours

174 Molecular Physiology of the Synapse



Cerebrovascular Diseases



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Main Lines of Research

- ▶ Brain neurorepair after stroke.
- ▶ Role of statins in ischemic and haemorrhagic stroke.
- ▶ Prevention of cerebral haemorrhage with anticoagulants.
- ▶ Endothelial progenitor cells in stroke.
- ▶ Aetiological classification of brain haemorrhage.
- ▶ Pathophysiology of hematoma growth in acute cerebral haemorrhage.
- ▶ Benefits and risks of intravenous thrombolysis.
- ▶ Non-invasive monitoring of cerebral flow with applied optic methods.
- ▶ Participation in clinical trials.
- ▶ Cancer and stroke.
- ▶ Vulnerability of the atherosclerotic plaque.
- ▶ Predictors of atrial fibrillation.

Challenges

- ▶ Enhance cooperation with other groups in the framework of Spanish stroke research.
- ▶ Network (RETICS/INVICTUS) and also intra-hospital and extra-hospital cooperation.
- ▶ To obtain funding from FIS, regional authorities and private companies.
- ▶ Increase the number of contracted and grant-aided researchers and professionally develop existing researchers.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Neuroradiology
- ▶ Thrombosis and Haemostasis
- ▶ Cardiovascular Biochemistry
- ▶ Neurobiology of Dementia
- ▶ Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases
- ▶ Stroke Pharmacogenomics and Genetics Group
- ▶ Genomics of Complex Diseases
- ▶ Clinical Epidemiology and Healthcare Services
- ▶ Inflammation and Vascular Remodelling
- ▶ Nuclear Medicine

External Collaborations

- ▶ Dr. Blanca Fuentes. Hospital La Paz, Madrid, Spain.
- ▶ Dr. Ángel Chamorro. Hospital Clínico de Barcelona, Spain.
- ▶ Dr. Antonio Dávalos. Hospital Germans Trias i Pujol, Badalona, Spain.
- ▶ Dr. Jaume Roquer. Hospital del Mar, Barcelona, Spain
- ▶ Dr. Francesc Purroy. Hospital Arnau de Vilanova, Lleida, Spain.
- ▶ RETICS (cooperative health research network) / INVICTUS (ictus research)
- ▶ Clinical trials:
 - ASSENT
 - SWITCH
 - ENCHANTED
 - RESPECT-ESUS
 - NAVIGATE-ESUS
 - CONVINC
- ▶ Dra. Jennifer Linn (SUSPECT study), University of Rochester, New York
- ▶ Dr. David Werring (HERO and CROMIS-2 study, Microbleeds consortium), National Hospital for Neurology and Neurosurgery, London.
- ▶ Dr. Peter Kelly (BIOVASC study, CONVINC study), Mater University Hospital, Dublin.
- ▶ Dr. García-Verdugo. Universidad de Valencia, Spain.
- ▶ Dr. Carles Arús. Facultat de Ciències, Universitat Autònoma de Barcelona, Spain.
- ▶ Dr. Turgut Durduran. Instituto de Ciencias Fotónicas, Castelldefels, Barcelona, Spain.
- ▶ Dr. Tomás Sobrino. Hospital General Universitario, Santiago de Compostela, Spain.
- ▶ Dr. Exuperio Díez-Tejedor. Hospital La Paz, Madrid, Spain.

Active Grants

- ▶ Joan Martí Fàbregas. INVICTUS. RD12/0014/0002. Instituto de Salud Carlos III. Duration: 2013-2017. 165,220.40 €.
- ▶ Joan Martí Fàbregas. Estudio de la progresión y la vulnerabilidad de la aterosclerosis carotídea: influencia del recuento de Células Endoteliales Progenitoras y del control de factores de riesgo vascular. PI15/00884. Instituto de Salud Carlos III. Duration: 2016-2018. 106,500.00 €.
- ▶ Joan Martí Fàbregas. REgenerative Stem cell therapy for Stroke in Europe - RESSTORE. PHC-15-2015. Unió Europea. Duration: 2015-2020. 389.58 €.
- ▶ Joan Martí Fàbregas. Red de Enfermedades Vasculares Cerebrales. INVICTUS PLUS RD16/0019/0010. Instituto de Salud Carlos III. Duration: 2017-2021. 50,008.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Raquel Delgado Mederos. Cerebral blood flow-guided early rehabilitation intervention after stroke: a pilot randomized trial. MARATO 20170930. Fundació La Marató de TV3. Duration: 2018-2021. 114,900.00 €.
- ▶ Elena Jiménez Xarrie. Biomarcadors lipoproteics per determinar la inflamació de la placa carotídia en l'íctus isquèmic., MARATO 20171610. Fundació La Marató de TV3. Duration: 2018-2021. 158,060.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Xavier Vidal Novellas. Eficacia de las ondas de choque radiales en comparación con la toxina botulínica tipo A para el tratamiento de la espasticidad en las extremidades inferiores en pacientes con parálisis cerebral. Ensayo clínico cruzado aleatorizado. Universitat Internacional de Catalunya. Director: Joan Martí Fàbregas. Date of defense: 10/02/2017.

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Scientific Production

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Cerebrovascular Diseases

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Scientific Production

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Neuromuscular Diseases



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Main Lines of Research

Autoimmune neuromuscular diseases

- ▶ Characterization of new target antigens in Myasthenia Gravis (MG), and immune neuropathies (CIDP, GBS, MMN). Their use as diagnostic and therapeutic biomarkers.
- ▶ Pathogenesis of newly recognized antigens both in MG and in CIDP.
- ▶ Analysis of the innate immunity in inflammatory myopathies.
- ▶ Analysis of the impact of new immunomodulating therapies on IgG4 mediated Neuromuscular Diseases (NMD).
- ▶ Functional aspects of immune system cells (response to ligands, production of antibodies, etc).
- ▶ Phase 2 clinical trials in autoimmune neuromuscular diseases.
- ▶ IGOS data base for Guillain Barre syndrome.
- ▶ NMD-ES Spanish registry for neuromuscular diseases.

Muscular dystrophy, dysferlinopathy and distal myopathies

- ▶ Muscle MRI analysis as a biomarker of different muscular dystrophies.
- ▶ Role of PDGF in muscular dystrophies fibrosis. Study of nintedanib as an antifibrotic drug in muscular dystrophies.
- ▶ Natural history of Dysferlinopathies. The international COS-study Jain Foundation.
- ▶ Study of proteasome inhibitors in dysferlin myopathy.
- ▶ Clinical trials in muscular dystrophies and metabolic muscle diseases.

Amyotrophic lateral sclerosis

- ▶ Epidemiology of ALS in Catalonia.
- ▶ Gene profile of ALS patients in Spain.
- ▶ Biomarkers profile in different phenotypes of ALS.

Challenges

- ▶ Advance in the knowledge of the immunological mechanisms involved in the pathogenesis of autoimmune neuromuscular diseases (MG, CIDP, MMN).
- ▶ Advance in the knowledge of the pathogenetic mechanisms of inflammatory myopathies (DM).
- ▶ Search for new antigens and develop diagnostic tests with new biomarkers in immune-mediated neuropathies and Myasthenia Gravis.
- ▶ Implement new diagnostic and disease follow-up methods for muscular dystro-

phies resulting from dysferlinopathy and other myopathies research (biomarkers (miRNA, secretome), MRI, etc).

- ▶ Advance in the knowledge of the pathogenetic mechanisms involved in dysferlin deficiency and other muscular dystrophies.
- ▶ Search for new genes and biomarkers in the different phenotypes of ALS.
- ▶ Use of the NMD.ES registry to perform research in different NMD.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Genetic Diseases
- ▶ Inflammatory Diseases

External Collaborations

- ▶ Jerome Devaux, investigador CNRS (Institut de Neurosciences de Montpellier, U1051R1). France.
- ▶ Silvere van der Maarel, Leiden, The Netherlands.
- ▶ Xavier Navarro. Departament de Medicina, Institut de Neurociències. Universitat Autònoma de Barcelona, Spain.

▶ R. Martí, Elena Garcia Arumí. Vall d'Hebron Research Institute, Barcelona, Spain. CIBERER CB 06/07/015.

▶ Vilchez JJ. Hospital La Fe Valencia. CIBERER CB 06/05/ 091.

▶ Al Chalabi A. King's College, London, UK.

▶ Benveniste, O. Hopital Salpetriere, Paris, France.

▶ Nagaraju, K/ Jaiswal, J. Children's Hospital, Washington D.C. USA.

▶ Mouly, V. Institut de Myologie, Paris, France.

▶ Pinal I. National Institute of Health, Bethesda, MD, USA.

Active Grants

- ▶ Maria Isabel Illa Sendra. Nuevas reactividades antigénicas y estudios de inmunidad innata en enfermedades neuromusculares autoinmunes. PI13/00937. Instituto de Salud Carlos III. Duration: 2014-2017. 160,250.00 €.
- ▶ Eduard Gallardo Vigo. Recerca en Malalties Neuromusculars. 2014 SGR 272. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 30,000.00 €.
- ▶ Ricardo Rojas García. Biomarkers profile in different phenotypes of Motor Neuron Disease. MARATO 20143710. Fundació La Marató de TV3. Duration: 2015-2018. 120,500.00 €.
- ▶ Jorge Alberto Díaz Manera. PDGF como nuevo biomarcador y diana terapéutica en pacientes con distrofia muscular. PI15/01822. Instituto de Salud Carlos III. Duration: 2016-2018. 76,500.00 €.
- ▶ Eduard Gallardo Vigo. Influencia de factores inmunológicos y no inmunológicos en la patogenia de las miopatías inflamatorias PI15/01597. Instituto de Salud Carlos III. Duration: 2016-2018. 91,500.00 €.
- ▶ Ricardo Rojas Garcia. Identificación de biomarcadores diagnósticos en pacientes con Esclerosis Lateral Amiotrófica . PI15/01618. Instituto de Salud Carlos III. Duration: 2016-2018. 91,500.00 €.
- ▶ Luis Antonio Querol Gutiérrez. Identificación de autoanticuerpos en neuropatías inflamatorias y caracterización del fenotipo celular implicado en su desarrollo. PI16/00627. Instituto de Salud Carlos III. Duration: 2017-2019. 76,500.00 €.
- ▶ Maria Isabel Illa Sendra. Estudios moleculares y celulares en Miastenia Gravis: Correlaciones clínicas y terapéuticas PI16/01440. Instituto de Salud Carlos III. Duration: 2017-2019. 111,500.00 €.
- ▶ Elena Cortes Vicente. Ajuts per a contractes de formació "Río Hortega" 2016. CM16/00096. Instituto de Salud Carlos III. Duration: 2017-2018. 53,732.00 €.
- ▶ Maria Isabel Illa Sendra. Aproximaciones terapéuticas en distrofias musculares mediante modelos celulares y animales. GEMIO 2016. Fundació Isabel Gemio. Duration: 2016-2019. 160,908.99 €.
- ▶ Eduard Gallardo Vigo. El proteasoma com a diana terapèutica en distròfies musculars per déficit de disferlina. IR16-P4. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 7,000.00 €.
- ▶ Noemi de Luna Salva. Activación de la inmunidad innata en células deficientes en disferlina: nuevas dianas terapéuticas F. RAMÓN ARECES 2016. Fundació Ramón Areces. Duration: 2017-2019.
- ▶ Xavier Suarez Calvet. New therapeutic targets in dermatomyositis. Research Grant Application 2014. The Myositis Association. Duration: 2015-2017. 83,586.64 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Elena Cortés Vicente. Antigen-specific regulatory networks to treat Myasthenia Gravis. MV17/00012. Instituto de Salud Carlos III. Duration: 2018. 11,960.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Extraordinary PhD award to Alba Ramos Franci for the thesis Nuevos marcadores diagnósticos y factores pronósticos en miastenia Gravis.
- ▶ Award to the best presentation of a young researcher on the treatments in the muscular dystrophy of Duchenne. Patricia Piñol. Nintedanib as a new therapeutic agent for Duchenne Muscular Dystrophy: preclinical and in vivo studies. 22nd World Muscle Society Meeting, St Malo, France.
- ▶ Elsevier WMS Membership Award. Alicia Alonso. Magnetic Resonance Image in Oculopharyngeal muscle dystrophy. 22nd World Muscle Society Meeting, St Malo, France.

Patents

- ▶ RH Brown, MF Ho, I Illa, E Gallardo. Blood-Based Assay for Dysferlinopathies. US7172858B2. USA, Canada, Japan, 06/02/2007

Neuromuscular Diseases

Books or chapters
with ISBN

Eduardo Gutiérrez-Rivas (ed). Manual de Enfermedades Neuromusculares. 2017. ISBN: 978-84-16732-35-2

- ▶ Chapter 17. Estudios inmunológicos. E Gallardo, X. Suárez, I. Illa. page 137
- ▶ Chapter 34. Neuropatías disímunes. L. Querol, R. Rojas. page 275
- ▶ Chapter 45. Distrofinopatías. J Díaz, E. Gallardo. page 375
- ▶ Chapter 67. Panorama de la Investigación sobre las enfermedades neuromusculares en España. R. Torrón, I. Illa, et al. page 581

Medicina Interna Farreras Rozman (18th edition) ISBN 978-84-9022-996-5

- ▶ Chapter 174. Ataxias y paraparesias espásticas. Enfermedades de la neurona motora. E. Muñoz, R. Rojas García. page 1409.
- ▶ Chapter 182. Enfermedades de los nervios periféricos. J. Casademont y R. Rojas García. page 1470.
- ▶ Chapter 184. Enfermedades de la unión neuromuscular: Miastenia Gravis y síndromes miasténicos. JM Grau y I. Illa. page 1496.

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Parkinson Disease and Movement Disorders



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Main Lines of Research

Cognitive Impairment and Behavioural Dysfunctions in Parkinson Disease (PD)

- ▶ Study of the neural correlates of cognitive performance, mild cognitive impairment, dementia and behavioral alterations (apathy, visual hallucinations and impulse control disorders) in PD using neurophysiological techniques (event-related brain potentials), structural, functional and molecular neuroimaging.
- ▶ Characterization of the neurodegenerative process underlying cognitive impairment in PD through the study of cortical atrophy patterns related to genetic and biomarker indicators.
- ▶ Development and validation of PD-specific tools for cognitive and functional assessment to detect subtle changes in cognitive performance and treatment response.
- ▶ Prospective follow-up study of cognition and mood in PD patients with deep-brain stimulation of the subthalamic nucleus.
- ▶ Identification of blood-based, cognitive and neurophysiological biomarkers of cognitive deterioration in PD.
- ▶ Identification of genetic and neurophysiological biomarkers of apathy and impulse control disorders in PD.
- ▶ Data science applied to large PD databases such as PPMI.
- ▶ Surgery and treatments of continuous infusion of intraduodenal levodopa.
- ▶ Study of the effects of continuous infusion of intraduodenal levodopa on cognition and mood.
- ▶ Follow-up and etiologic study of weight loss in patients treated with continuous infusion of intraduodenal levodopa.

Huntington Disease (HD)

- ▶ Clinical characterization of the natural course HD in large cohort and international studies (Enroll-HD).
- ▶ Study of the neural correlates of clinical progression, cognitive performance, mild

cognitive impairment, dementia and behavioral alterations in HD using neurophysiological techniques (event-related brain potentials), structural, functional and molecular neuroimaging.

- ▶ Identification of potential neuroimaging, blood-based, muscular tissue, CSF and clinical biomarkers of progression and phenotypic in premanifest and manifest HD.
- ▶ Study of the prevalence and neural substrates of behavioral alterations in premanifest and manifest HD.
- ▶ Development and validation of HD-specific tools for cognitive and functional assessment to detect subtle changes in cognitive performance and treatment response.
- ▶ Study of the effect of intermediate alleles and homozygosis on the clinical presentation of HD.
- ▶ Data science applied to large HD databases such as Enroll-HD and Registry.
- ▶ Identification of different cognitive phenotypes in HD.

Progressive Supranuclear Palsy (PSP)

- ▶ Development of a PSP-specific cognitive rating scale.
- ▶ Development of a standardized eye movement evaluation.
- ▶ Study of the neural correlates of clinical progression, cognitive performance and behavioral alterations in PSP using structural and functional neuroimaging.

Essential Tremor and Other Movement Disorders

- ▶ Molecular neuroimaging in essential tremor.
- ▶ Clinical, neurophysiological and neuroimaging assessment of patients with FXTAS (fragile X-associated tremor/ataxia syndrome).

Challenges

Cognitive and Behavioural Dysfunctions in Parkinson Disease

- ▶ Study and understanding of the neural substrates of cognitive impairment in Parkinson disease so as to improve diagnostic and therapeutic approaches.
- ▶ Development of specific tools to assess and track cognitive changes in Parkinson disease.
- ▶ Identification of the involvement of specific executive and reward-related brain systems in the etiology of apathy in PD

Huntington's Disease

- ▶ Study of the dynamics of mutant Htt protein aggregation and related neural and cognitive correlates along disease stages in Huntington's disease.
- ▶ Validation of new instruments to assess and track subtle cognitive changes in pre-manifested and early-stage Huntington's disease population.
- ▶ Identification of the structural and metabolic brain correlates of apathy in early and mild HD.

Essential Tremor and Other Movement Disorders

- ▶ Genetic studies and genotype-phenotype correlations in essential tremor.
- ▶ Development of new therapeutic interventions in essential tremor.
- ▶ Neurochemical and structural neuroimaging studies on the pathophysiological bases of essential tremor.

Translational Research - Animal Models of Parkinsonism

- ▶ Behavioural, physiological and pharmacological characterization of animal models of parkinsonism with combined dopaminergic and noradrenergic lesions.
- ▶ Physiopathology of motor, cognitive and behavioural complications linked to antiparkinsonian drugs in animal models of parkinsonism.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Active collaboration with the Reserach groups of Neuroradiology and Nuclear Medicine (Huntington's disease).

External Collaborations

- ▶ Active collaboration with the Cognition and Brain Plasticity Group at the Bellvitge Health Science Campus at the University of Barcelona adscribed to the Department of Basic Psychology, Faculty of Psychology - University of Barcelona and the IDIBELL (Institut d'Investigació Biomèdica de Bellvitge).
- ▶ Centro de Investigación Biomédica en Red de Enfermedades neurodegenerativas (CIBERNED), Instituto de Salud Carlos III.

- ▶ International Movement Disorders Society (MDS). Task Force for Developing Rating Scales in Parkinson's Disease (Subcomitee for Cognitive Evaluation).
- ▶ MDS Task Force for Mild Cognitive Impairment in Parkinson's Disease.
- ▶ MDS Task Force for Evidence Based Medicine in Huntington's Disease.
- ▶ Spanish Coordinator of the European Huntington Disease Network and the ENROLL Study (Cure for Huntington's Disease International - CHDI).
- ▶ Coordination of the Cognitive Phenotype Working Group of the European Huntington's Disease Network (EHDN).

Active Grants

- ▶ Jaime Kulisevsky Bojarski. Huntington's Disease Network EHDN. Duration: 2010-2021. 149,240.00 €.
- ▶ Jaime Kulisevsky Bojarski. Grup de Trastorns del Moviment de l'Hospital de la Santa Creu i Sant Pau. 2014 SGR 1203. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 21,000.00 €.
- ▶ Jaime Kulisevsky Bojarski. Prediction of apathy and impulse control disorders in Parkinson's disease based on Feedback related negativity. MARATO 20142410. Fundació La Marató de TV3. Duration: 2015-2018. 159,686.00 €.
- ▶ Javier Pagonabarraga Mora. Blood-based and neurophysiological markers of cognitive deterioration and dementia in Parkinson's disease. MARATO 20142910. Fundació La Marató de TV3. Duration: 2015-2018. 159,589.00 €.
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- ▶ Juan Marin Lahoz. Contratos Río Hortega 2015. CM15/00071. Instituto de Salud Carlos III. Duration: 2016-2018. 53,732.00 €.
- ▶ Jaime Kulisevsky Bojarski. Correlatos anatómico-funcionales de los trastornos del control de impulsos y apatía en la enfermedad de Parkinson. PI15/00962. Instituto de Salud Carlos III. Duration: 2016-2018. 61.500,00 €.
- ▶ Jesus Perez Perez. Contratos Juan Rodés 2016. JR16/00034. Instituto de Salud Carlos III. Duration: 2017-2020. 135,000.00 €.
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- ▶ Ignacio Aracil Bolaños. Búsqueda de biomarcadores prodrómicos en la demencia asociada a la enfermedad de Parkinson (EP) y enfermedad por cuerpos de Lewy (ECL) IR16-R5. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2018. 30,477.44 €.

Note: Total amount granted to PI. It does not include indirect costs.

Parkinson Disease and Movement Disorders

Grants
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- ▶ Jesus Pérez Pérez. Estudio longitudinal de los correlatos clínicos y neuroradiológicos asociados a los niveles de huntingtina y otros biomarcadores en LCR y plasma en la enfermedad de Huntington. PI17/01885. Instituto de Salud Carlos III. Duration: 2018-2020. 97,000.00 €.
- ▶ Helena Bejr-Kasem Marco. Contractes de formació en recerca "Río Hortega" 2017., CM17/00209, Instituto de Salud Carlos III. Duration: 2018-2019. 53,732.00 €.

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Other
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- ▶ Catalán MJ, Antonini A, Calopa M, Băjenaru O, de Fábregues O, Mínguez-Castellanos A, Odin P, García-Moreno JM, Pedersen SW, Pirtošek Z, Kulisevsky J. Can suitable candidates for levodopa/carbidopa intestinal gel therapy be identified using current evidence? . *eNeurologicalSci*. 2017 Sep; 8: 44–53. Published online 2017 Jul 2. doi: 10.1016/j.ensci.2017.06.004 PMID: 29260038.
- ▶ Rosa-Grilo M , Qamar MA , Taddei RN , Pagonabarraga J, Kulisevsky J, Sauerbier A, Chaudhuri KR. Rotigotine transdermal patch and sleep in Parkinson's disease: where are we now?. *NPJ Parkinsons Dis*. 2017 Sep 5;3:28. doi: 10.1038/s41531-017-0030-4. eCollection 2017.

Molecular Neuropharmacology



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Main Lines of Research

- ▶ Chronic pain affects a high percentage of population and is difficult to treat even with the most potent analgesic compounds, which represents one of the main challenges in the current research of pain. Our main objective is to investigate new strategies for the treatment of chronic pain by using pharmacological, molecular and genetic approaches.
- ▶ The main lines of research are to:
 - Investigate new targets for the treatment of chronic pain. Identify new drugs capable to alleviate inflammatory, arthritic, and/or neuropathic pain and evaluate its mechanism of action in different animal pain models.
 - Establish new strategies for the treatment of diabetic neuropathy. Identify new approaches for treating neuropathy and oxidative stress, two of the main complications associated to diabetes, by evaluating the role played by the activation of transcription factor Nrf2/HO-1 signaling pathway in type I and II diabetic animals.
- Study the emotional disorders associated to chronic pain. Investigate the role played by gaseous neurotransmitters in the modulation of the anxiety- and depressive-like behaviors associated to chronic inflammatory and neuropathic pain in animals.
- Investigate the neuropharmacology of opioid and cannabinoid receptors. Establish new strategies to enhance the analgesic effects produced by opioids and cannabinoids during the treatment of chronic pain avoiding the development of side effects.

Challenges

- Our scientific challenges are to:
- ▶ Identify new pharmacological compounds that effectively abolish chronic pain without side effects and which use can be transferred to clinical practice and/or patentable.
 - ▶ Develop new effective approaches for the treatment of diabetic neuropathy, oxidative stress and obesity associated to the development of type 2 diabetes in transgenic mice.
 - ▶ Establish the role played by gaseous neurotransmitters in the modulation of anxiety and depression associated with the development of chronic inflammatory and neuropathic pain
 - ▶ Advance in the knowledge of the molecular mechanisms involved in the increased analgesic actions produced by opioids and cannabinoids combined with Nrf2/HO-1 signaling pathway activators during chronic pain.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Metabolic Bases of Cardiovascular Risk (PI: Francisco Blanco)

External Collaborations

- ▶ Prof. Christie Ramos Andrade Leite-Panisi. University of São Paulo. Brazil.
- ▶ Prof. Luiz Guilherme de Siqueira Branco. University of São Paulo. Brazil.
- ▶ Prof. Roberto Motterlini. INSERM U955, University Paris-Est. France.
- ▶ Prof. Lydia Giménez-Llort. Universitat Autònoma de Barcelona. Spain
- ▶ Prof. Gianfranco Balboni. University of Cagliari. Italy

Active Grants

- ▶ Olga Pol Rigau. Nuevas estrategias en el tratamiento de la neuropatía diabética PI14/00927. Instituto de Salud Carlos III. Duration: 2015-2018. 71,500.00 €.
- ▶ Olga Pol Rigau. Possible interaction CO-NO in the emotional and nociception modulation: role of locus coeruleus PVE 2014. Ciencia sin Fronteras. Duration: 2015-2018.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ The Molecular Neuropharmacology Group has been awarded with the Prize in basic area for its communication "The induction of the transcription factor Nrf2 inhibits hypersensitivity to pain and increases the analgesic action of morphine in animals with chronic inflammatory pain" in the XIV Congress National of the Spanish Society of Pain celebrated in Murcia, Spain. June 2017.

*TIF: 10.159 **MIF: 5.0795

Scientific Production

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IF: 2.766

McDonnell C., Leanez S., Pol O., The inhibitory effects of cobalt protoporphyrin IX and cannabinoid 2 receptor agonists in type 2 diabetic mice (2017) INT J MOL SCI, 18 (11).
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Redondo A., Chamorro P.A.F., Riego G., Leanez S., Pol O., Treatment with sulforaphane produces antinociception and improves morphine effects during inflammatory pain in mice (2017) J PHARMACOL EXP THER, 363 (3), 293-302.
IF: 3.706

Pharmacological Research in Humans



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Main Lines of Research

Clinical Trials with no Therapeutic Benefits to Volunteer Participants

- ▶ Phase I clinical trials (healthy volunteers) whose main objectives include: first-time-in- humans, safety and tolerability (local, systemic/dermatological, ophthalmological, vaginal), pharmacokinetics, bio-availability and bioequivalence (generic drugs), pharmacodynamics, interactions (drug-drug/drug-food), evaluation and characterization of biomarkers, proofs of concept, acceptability and preference studies.
- ▶ Follow-up studies in populations with the same or different characteristics (elderly, obese, postmenopausal, with liver or kidney failure).
- ▶ Collaboration with clinical services to conduct phase II/III studies.

Neuro-Physio-Pharmacology of Sleep/Wake States

- ▶ Investigate human brain activity in sleep and wakefulness, mechanisms involved in these states, problems derived from sleep disturbances and possible interventions.
- ▶ Approach the phenomenon as a continuum: appropriate interpretation of the impact of a certain intervention, whether pharmacological or not, should take into account the complementarity of evaluations performed during sleep and during wakefulness.
- ▶ Develop studies that consider the 24-hour day/night cycle as the phenomenon under study cannot be evaluated without taking this interactivity into account.
- ▶ Develop psychomotor performance tests, subjective evaluation scales, neurophysiologic recordings (quantitative EEG, evoked-sensorial potentials and polysomnography), psychophysiological tests and pupillometric tests.

Challenges

- ▶ Consolidate and strengthen leadership in this field in Spain, conserve relationships with the pharmaceutical industry on a national level and strengthen and extend relations abroad with multinational enterprises and industries from other sectors.
- ▶ Broaden the range of questions to address in research projects along the lines of the neuro-physio-pharmacology of sleep/wake states, focusing on pharmacotherapeutic objectives and also on physiopathologic objectives in related fields, such as dreams.
- ▶ Develop neurophysiologic recording performance in ambulatory conditions, simplifying participation of volunteers but not lowering the quality of data obtained (non-negotiable element of their application as a research variable).
- ▶ Promote dissemination of our activity with a dual objective: to return knowledge generated to society and demystify research in humans, bringing it closer to the community so as to foster participation in clinical trials (particularly in specific sectors of the populations, such as the elderly).
- ▶ Set up educational activities related to our two main research lines: the application of good clinical practices in clinical research into sleep medicine and its medical (pathology, and treatment) and social (quality of life, prevention of accident risk) consequences.

Collaborations

External Collaborations

- ▶ Phase I-II clinical trials for national and international pharmaceutical companies.

Active Grants

- ▶ Rosa Maria Antonijoan Arbós. Desarrollo de una combinación de sensibilizantes de la acción de la insulina y antiandrógenos para el tratamiento del síndrome de ovario poliquístico en adolescentes y mujeres jóvenes RTC-2016-5671-1. Ministeri d'Economia i Competitivitat. Duration: 2016-2019. 100,796.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

*TIF: 22.251 **MIF: 2.7813

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Antonijoan R., Coimbra J., Garcia-Gea C., Puntos M., Gich I., Campo C., Valiente R., Labeaga L., Comparative efficacy of bilastine, desloratadine and rupatadine in the suppression of wheal and flare response induced by intradermal histamine in healthy volunteers (2017) CURR MED RES OPIN, 33 (1), 129-136.

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Barata A., Martino R., Gich I., Garcia-Cadenas I., Abella E., Barba P., Briones J., Brunet S., Esquirol A., Garcia-Pallarols F., Garrido A., Granell M., Martinez J., Mensa I., Novelli S., Sanchez-Gonzalez B., Valcarcel D., Sierra J., Do Patients and Physicians Agree When They Assess Quality of Life? (2017) BIOL BLOOD MARROW TR, 23 (6), 1005-1010.

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Diaz-Torné C, Moragues C, Toniolo E, Geli C, Castellví I, Moya P, Gich I, Llobet JM. Impact of ultrasonography on treatment decision in rheumatoid arthritis: the IMPULSAR study. (2017) RHEUMATOL INT 37 6 891-896.

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Espinós JJ, Vanrell C, Gich I, Urgell E, Calaf J. Pituitary response profile following metoclopramide administration in women with different forms of hyperprolactinemia. (2017) GYNECOL ENDOCRINOL 33 2 148-151.

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Gimenez S., Romero S., Alonso J.F., Mananas M.A., Pujol A., Baxarias P., Antonijoan R.M.,

Monitoring sleep depth: analysis of bispectral index (BIS) based on polysomnographic recordings and sleep deprivation (2017) J CLIN MONIT COMPUT, 31 (1), 103-110.

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Ginovart G., Gich I., Gutierrez A., Verd S., A Fortified Donor Milk Policy is Associated with Improved In-Hospital Head Growth and Weight Gain in Very Low-Birth-Weight Infants (2017) ADV NEONAT CARE, 17 (4), 250-257.

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Lambert C., Cubedo J., Padro T., Sanchez-Hernandez J., Antonijoan R.M., Perez A., Badimon L., Phytosterols and omega 3 supplementation exert novel regulatory effects on metabolic and inflammatory pathways: A proteomic study (2017) NUTRIENTS, 9 (6).

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Clinical Psychiatry



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Main Lines of Research

- ▶ Psychotic disorders (first episodes and persistent hallucinations).
- ▶ Affective disorders (major depression and validation of scales).
- ▶ Borderline personality disorder.

Challenges

- ▶ Foster research that reduces the health-care, social and personal costs of mental illness by exploring areas such as epidemiology, etiopathogenesis, physiopathology, prevention and treatment.
- ▶ Foster research into mental health therapies.
- ▶ Foster research to improve quality of life of patients with mental disorders.

Research into Psychotic Disorders

- ▶ Neuroimaging studies in first psychotic episodes.
- ▶ Study of environmental, biological and genetic factors in psychosis.
- ▶ Efficacy and effectiveness studies of anti-psychotic drugs.
- ▶ Efficacy and effectiveness study of psychotherapy for hallucinations.
- ▶ Study of treatment resistance in schizophrenia.

Research into Affective Disorders

- ▶ Identification and evaluation of new therapeutic targets in depression.
- ▶ Neuroimaging studies in first psychotic episodes.
- ▶ Biological and genetic markers in affective disorders.
- ▶ Implementation of new therapeutic programmes, depression evaluation and social aspects of depression.

Research into Personality Disorders

- ▶ Clinical trials regarding the usefulness of mixed treatment in patients with borderline personality disorder and validation of diagnostic instruments.
- ▶ Genetic-neuroimaging studies of borderline personality disorder (BPD).
- ▶ Efficacy and effectiveness studies of psychotherapy for treating borderline personality disorder.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Addictive Behaviours.
- ▶ Neuroradiology.
- ▶ Neurosurgery.
- ▶ Hypophysis Diseases.
- ▶ CIM – Sant Pau.
- ▶ Pain Clinic Sant Pau.
- ▶ Genetics.
- ▶ Internal Medicine.

External Collaborations

- ▶ Hospital Clínic de Barcelona, Psychiatry Department.
- ▶ Hospital Parc Taulí, Sabadell, Psychiatry Department.
- ▶ Universidad Complutense de Madrid, Medicine-Pharmacology Department.
- ▶ Hospital Universitario de la Princesa, Madrid, Psychiatry Department.
- ▶ Universidad de Valencia, Medicine-Psychiatry Department.
- ▶ Leipzig University, Medicine-Psychiatry Department.
- ▶ Universidad de Cádiz, Medicine-Pharmacology Department.
- ▶ Hospital Benito Menni – FIDMAG, Barcelona, Psychiatry Department.
- ▶ University of Oxford, Medicine-Psychiatry Department.

Active Grants

- ▶ Maria Jesús Portella Moll. Estudio longitudinal de cambios cerebrales en pacientes con un primer episodio de depresión mayor. PI13/01057. Instituto de Salud Carlos III. Duration: 2014-2018. 56,300.00 €.
- ▶ Joaquín Soler Ribaudi. Efectos del Mindfulness en la Actividad y Conectividad Funcional de la Default Mode Network en Pacientes con Trastorno Límite de la Personalidad. PI13/00134. Instituto de Salud Carlos III. Duration: 2014-2017. 46,150.00 €.
- ▶ Iluminada Corripio Collado. Mobile Therapeutic Attention for Patients with Treatment Resistant Schizophrenia (m-RESIST). PHC26-2014 (2) - IR. Unió Europea. Duration: 2015-2017. 126,474.19 €.
- ▶ Juan Carlos Pascual Mateos. Estudio Epigenómico en el Trastorno Límite de la Personalidad: estudio del patrón de metilación (EWAS-Epigenome-wide association study) y su relación con antecedentes traumáticos. PI14/00214. Instituto de Salud Carlos III. Duration: 2015-2018. 81,500.00 €.
- ▶ Eva María Grasa Bello. Eficacia del Entrenamiento Metacognitivo Individualizado (EMC+) en personas con psicosis de breve evolución. PI14/00044 C. Instituto de Salud Carlos III. Duration: 2015-2017.
- ▶ Iluminada Corripio Collado. Mobile Therapeutic Attention for Patients with Treatment Resistant Schizophrenia (m-RESIST). PHC26-2014 (2) - FGS. Unió Europea. Duration: 2015-2017. 152,667.81 €.
- ▶ Francisco Javier de Diego Adeliño. Estudio longitudinal de predicción precoz de la respuesta en depresión con la combinación multimodal de biomarcadores epigenéticos, neurocognitivos y clínicos. PI16/00302. Instituto de Salud Carlos III. Duration: 2017-2019. 86,500.00 €.
- ▶ Enric Álvarez Martínez. Efectos de un análogo de la Ayahuasca sobre el reprocesamiento emocional en pacientes con Trastorno Límite de la Personalidad. PI16/00078. Instituto de Salud Carlos III. Duration: 2017-2019. 46,500.00 €.
- ▶ Maria Jesús Portella Moll. Contractes "Miguel Servet II" 2016. CPII16/00020. Instituto de Salud Carlos III. Duration: 2017-2020. 101,250.00 €.
- ▶ Maria Jesús Portella Moll. Convocatòria d'ajuts intramurals per cofinançar despeses pel desenvolupament de projectes actius 2016. IR16-P3. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 7,000.00 €.
- ▶ Enric Álvarez Martínez. Estimulación Cerebral Profunda en el tratamiento de la esquizofrenia refractaria: Estudio piloto aleatorizado, controlado y cruzado. PI12/00042. Instituto de Salud Carlos III. Duration: 2013-2017. 91,500.00 €.
- ▶ Maria Jesús Portella Moll. Contracte SNS "M. SERVET" 2010. MS10/00393. Instituto de Salud Carlos III. Duration: 2011-2017. 151,875.00 €.
- ▶ Maria del Mar Carceller Sindreu. Contractes predoctorals de formació en investigació en salut 2014. FI14/00201. Instituto de Salud Carlos III. Duration: 2015-2019. 82,400.00 €.
- ▶ Francisco Javier de Diego Adeliño. Contratos Juan Rodés 2014. JR14/00011. Instituto de Salud Carlos III. Duration: 2015-2018. 135,000.00 €.
- ▶ Lorena Chanes Puiggrós. Contractes postdoctorals "Sara Borrell" 2016. CD16/00059. Instituto de Salud Carlos III. Duration: 2017-2019. 80,598.00 €.
- ▶ Maria Jesús Portella Moll. Grup de Recerca en Trastorns Psiquiàtrics de Sant Pau. 2017 SGR 1343. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 16,250.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Maria Jesús Portella Moll. RIDEM: Rehabilitación Integral para Depresión Mayor. Estudio de eficacia de un programa de rehabilitación integral. PI17/00056. Instituto de Salud Carlos III. Duration: 2018-2020. 47,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Anna Barata Badiella. Qualitat de vida en el receptor de trasplantament hematopoiètic. Universitat Autònoma de Barcelona. Directors: Jim Heather, Rodrigo Martino, Jordi Sierra and Enric Álvarez (tutor). Date of defense: 15/03/2017.

Clinical Psychiatry

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Alonso-Solis A., Vives-Gilbert Y., Portella M.J., Rabella M., Grasa E.M., Roldan A., Keymer-Gausset A., Molins C., Nunez-Marin F., Gomez-Anson B., Alvarez E., Corripio I., Altered amplitude of low frequency fluctuations in schizophrenia patients with persistent auditory verbal hallucinations (2017) SCHIZOPHR RES, 189, 97-103.

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Alvarez-Tomas I., Soler J., Bados A., Martin-Blanco A., Elices M., Carmona C., Bauza J., Pascual J.C., Long-term course of borderline personality disorder: A prospective 10-year follow-up study (2017) J PERS DISORD, 31 (5), 590-605.

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Bernardo M., Bioque M., Cabrera B., Lobo A., Gonzalez-Pinto A., Pina L., Corripio I., Sanjuan J., Mane A., Castro-Fornieles J., Vieta E., Arango C., Mezquida G., Gasso P., Parellada M., Saiz-Ruiz J., Cuesta M.J., Mas S., Modelling gene-environment interaction in first episodes of psychosis (2017) SCHIZOPHR RES, 189, 181-189.

IF: 3.649

Carceller-Sindreu M., de Diego-Adelino J., Portella M.J., Garcia-Moll X., Figueras M., Fernandez-Vidal A., Queralto J.M., Puigdemont D., Alvarez E., Lack of relationship between plasma levels of escitalopram and QTc-interval length (2017) EUR ARCH PSY CLIN N, 267 (8), 815-822.

IF: 3.617

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IF: 2.600

Elices M., Carmona C., Narvaez V., Seto V., Martin-Blanco A., Pascual J.C., Soriano J., Soler J., Direct experience while eating: Laboratory outcomes among individuals with eating disorders versus healthy controls (2017) EAT BEHAV, 27, 23-26.

IF: 1.870

Escandon-Nagel N., Dada G., Grau A., Soriano J., Feixas G., Eating disorder patients evolution three years after intake in Day Hospital La evolución de los pacientes con trastorno de la conducta alimentaria tres años después de ingresar a Hospital de Día (2017) REV ARGENT CLIN PSIC, 16 (1), 59-69.

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Estrada-Prat X., Alvarez-Guerrico I., Bleda-Hernandez M.J., Camprodon-Rosanas E., Battle-Vila S., Pujals-Altes E., Nascimento-Osorio M.T., Martin-Lopez L.M., Alvarez-Martinez E., Perez-Sola V., Romero-Cela S., Sleep study in disruptive mood dysregulation disorder and bipolar children Estudio del sueño en niños con Trastorno de Disregulación Disruptivo del Estado de Ánimo y Bipolares (2017) ACTAS ESP PSIQUIATRI, 45 (1), 12-20.

IF: 0.796

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IF: 2.263

Fraguas D., Diaz-Caneja C.M., Corripio I., Gonzalez-Pinto A., Lobo A., Bioque M., Cuesta M.J., Sanjuan J., Rodriguez-Toscano E., Arias B., Sarro S., Cabrera B., Bulbena A., Vieta E., Castro-Fornieles J., Arango C., Bernardo M., Parellada M., Gene-environment interaction as a predictor of early adjustment in first episode psychosis (2017) SCHIZOPHR RES, 189, 196-203.

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Huerta-Ramos E., Marco-Garcia S., Soledad-Escobar-Villegas M., Rubio-Abadal E., Ochoa S., GrasaBello E.M., Solis A.A., Rabella M., Berdun J., Hospedales M., Corripio I., Usall J., M-RESIST, a complete m-Health solution for patients with treatment-resistant schizophrenia: A qualitative study of user needs and acceptability in the Barcelona metropolitan area M-RESIST, una solución m-health integral para personas con esquizofrenia resistente: Estudio cualitativo de necesidades y aceptabilidad de usuarios en el área de Barcelona (2017) ACTAS ESP PSIQUIATRI, 45 (6), 277-289.

IF: 0.796

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Mane A., Berge D., Penzol M.J., Parellada M., Bioque M., Lobo A., Gonzalez-Pinto A., Corripio I., Cabrera B., Saiz-Ruiz J., Bernardo M., Cannabis use, COMT, BDNF and age at first-episode psychosis (2017) PSYCHIAT RES, 250, 38-43.

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Martin-Blanco A., Patrizi B., Soler J., Gasol X., Elices M., Gasol M., Carmona C., Pascual J.C., Use of nalmefene in patients with comorbid borderline personality disorder and alcohol use disorder: A preliminary report (2017) INT CLIN PSYCHOPHARM, 32 (4), 231-234.

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Martin-Blanco A., Ancochea A., Soler J., Elices M., Carmona C., Pascual J.C., Changes over the last 15 years in the psychopharmacological management of persons with borderline personality disorder (2017) ACTA PSYCHIAT SCAND, 136 (3), 323-331.

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Mas S., Gasso P., Torra M., Bioque M., Lobo A., Gonzalez-Pinto A., Olmeda M.S., Corripio I., Vieta E., Castro-Fornieles J., Rodriguez-Jimenez R., Bobes J., Usall J., Llerena A., Saiz-Ruiz J., Bernardo M., Lafuente A., Intuitive pharmacogenetic dosing of risperidone according to CYP2D6 phenotype extrapolated from genotype in a cohort of first episode psychosis patients (2017) EUR NEUROPSYCHOPHARM, 27 (7), 647-656.

IF: 3.946

Mezquida G., Cabrera B., Bioque M., Amoretti S., Lobo A., Gonzalez-Pinto A., Espliego A., Corripio I., Vieta E., Castro-Fornieles J., Berge D., Escarti M.J., Ibanez A., Penades R., Sanchez-Torres A.M., Bernardo M., The course of negative symptoms in first-episode schizophrenia and its predictors: A prospective two-year follow-up study (2017) SCHIZOPHR RES, 189, 84-90.

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Scientific Production

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Ochoa S., Lopez-Carrilero R., Barrigon M.L., Pousa E., Barajas A., Lorente-Rovira E., Gonzalez-Higueras F., Grasa E., Ruiz-Delgado I., Cid J., Birules I., Esteban-Pinos I., Casanas R., Luengo A., Torres-Hernandez P., Corripio I., Montes-Gamez M., Beltran M., De Apraiz A., Dominguez-Sanchez L., Sanchez E., Llacer B., Pelaez T., Bogas J.L., Moritz S., Randomized control trial to assess the efficacy of meta-cognitive training compared with a psycho-educational group in people with a recent-onset psychosis (2017) *PSYCHOL MED*, 47 (9), 1573-1584.

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Perez V., Salavert A., Espadaler J., Tuson M., Saiz-Ruiz J., Saez-Navarro C., Bobes J., Baca-Garcia E., Vieta E., Olivares J.M., et al., Efficacy of prospective pharmacogenetic testing in the treatment of major depressive

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Other Publications

- ▶ Elices M, Soler J, Feliu-Soler A, Carmona C, Tiana T, Pascual JC, García-Palacios A, Álvarez E. Combining emotion regulation and mindfulness skills for preventing depression relapse: a randomized-controlled study. *BORDERLINE PERSONAL DISORD EMOT DYSREGUL*. 2017 Jul 5;4:13.

Genetics in Neurodegenerative Diseases



Coordinator

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Members

Cervera Carles, Laura IR
Dols Icardo, Oriol IR
Muñoz Llahuna, Laia CIBERNED

Main Lines of Research

- ▶ Use of state-of-the-art genomic strategies to study the genetic architecture of complex diseases caused by neurodegenerative processes, including Alzheimer disease and other dementias, Parkinson disease, and amyotrophic lateral sclerosis (ALS), among others.
- ▶ Cloning and evaluation of novel genes associated with neurodegenerative disorders through genomic analyses on families with Mendelian pattern of inheritance.
- ▶ Study of the relationship between biomarkers and endophenotypes at the individual genetic background.
- ▶ Evaluation of the effect of novel genes related to neurodegenerative disorders in the Spanish population through multi-centre collaborative studies.

Challenges

- ▶ Assemble a research team of excellence in the international field of genetics of neurodegenerative disorders.
- ▶ Increase our capacity of funding through EU support.
- ▶ Develop a comprehensive genomic database from well-characterized Spanish patients of European origin suffering from neurodegenerative disorders.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Neurobiology of Dementia.
- ▶ Parkinson Disease and Movement Disorders.
- ▶ Neuromuscular Diseases.

External Collaborations

National and international consortiums

- ▶ European Early-Onset Dementia Consortium (EU-EOD)
- ▶ European Alzheimer Disease Initiative (EADI)
- ▶ International Genomics of Alzheimer Project (IGAP)
- ▶ International Parkinson's Disease Genetic Consortium (IPDGC)
- ▶ International Frontotemporal Dementia Genomics Consortium (IFGC)
- ▶ Dementia Genetics Spanish Consortium (DEGESCO)

- ▶ CIBER-Neurodegenerative Diseases (CIBERNED)

Collaborations with international centres

- ▶ Dr. John Hardy, University College of London, UK.
- ▶ Dr. Andrew Singleton, National Institutes of Health, USA.
- ▶ Dr. Jean-Charles Lambert, Directeur de recherche Inserm chez INSERM. Lille, France.
- ▶ Dr. Alfredo Ramírez, University of Bonn, Germany.
- ▶ Dr. Ekaterina Rogaeva, University of Toronto, Canada.
- ▶ Dr. Mikko Hiltunen, Kuopio University, Finland.
- ▶ Dr. Martin Ingelsson, Uppsala University, Sweden.
- ▶ Dr. Liana Fidani, Aristotle University of Thessaloniki, Greece.
- ▶ Dr. Christine Van Broekhoven, University of Antwerp, Belgium.

Grants Awarded in 2017

- ▶ Oriol Dols Icardo. Estudi del paper de les variants genètiques rares en l'arquitectura genètica de la malaltia d'Alzheimer. SLT002/16/00040. Departament de Salut. Duration: 2017-2019. 88.376,57 €.
- ▶ Jordi Clarimon Echavarría, Estudio del splicing alternativo en ARN de muestras con diagnóstico neuropatológico de ELA asociada a TDP-43. FUNDELA 2017. Fundació Espanyola per al Foment de la Investigació de l'Esclerosi Lateral Amiotròfica. Duration: 2017-2018. 26.087,00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Active Grants

- ▶ Jordi Clarimon Echavarria. Estudio del perfil de expresión de microRNA exosomal en biofluidos para la identificación de biomarcadores de uso diagnóstico en la demencia frontotemporal. PI15/00026. Instituto de Salud Carlos III. Duration: 2016-2018. 101,500.00 €.
- ▶ Jordi Clarimon Echavarria. Unitat genètica malalties neurodegeneratives. IR16-P7. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 7,000.00 €.
- ▶ Jordi Clarimon Echavarria. A comprehensive genomic analysis of patients with motor neuron disease and frontotemporal dementia to disentangle the missing genetic architecture of amyotrophic lateral sclerosis TODOS SOMOS RAROS 2014. Federación Española de Enfermedades Raras / Fundación Isabel Gemio / Federación Española de Enfermedades Neuromusculares. Duration: 2015-2017. 90,748.00 €.
- ▶ Jordi Clarimon Echavarria. Grup de Recerca en Demències. 2014 SGR 235. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 18,000.00 €.
- ▶ Jordi Clarimon Echavarria. Contratos Miguel Servet 2013 (II). MSII13/00005. Instituto de Salud Carlos III. Duration: 2014-2017. 101,250.00 €.
- ▶ Jordi Clarimon Echavarria. Grup de Recerca en Demències: Sant Pau. 2017 SGR 547. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 35,200.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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Scientific Production

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- Cervera-Carles L., Alcolea D., Estanga A., Eca-Torres M., Izaguirre A., Clerigüe M., Garcia-Sebastian M., Villanua J., Escalas C., Blesa R., Martinez-Lage P., Lleo A., Fortea J., Clarimon J., Cerebrospinal fluid mitochondrial DNA in the Alzheimer's disease continuum (2017) *NEUROBIOL AGING*, 53, 192.e1-192.e4. **IF: 4.225**
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- Pegueroles J., Vilaplana E., Montal V., Sampedro F., Alcolea D., Carmona-Iragui M., Clarimon J., Blesa R., Lleo A., Fortea J., Longitudinal brain structural changes in preclinical Alzheimer's disease (2017) *ALZHEIMERS DEMENT*, 13 (5), 499-509. **IF: 11.980**
- Querol-Vilaseca M., Colom-Cadena M., Pegueroles J., San Martin-Paniello C., Clarimon J., Belbin O., Fortea J., Lleo A., YKL-40 (Chitinase 3-like I) is expressed in a subset of astrocytes in Alzheimer's disease and other tauopathies (2017) *J NEUROINFLAMM*, 14 (1). **IF: 4.910**
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Human Neuropsychopharmacology



Coordinator

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IR

Main Lines of Research

General Neuropsychopharmacology

- ▶ Pharmacological modulation of the different neurotransmission systems to study the role of these systems in advanced cognitive functions (executive control) and emotions.

Neuropsychopharmacology of Abused Substances

- ▶ Effects on the central nervous system of psychodysleptic drugs such as ayahuasca, salvinorin A, dimethyltryptamine and THC.
- ▶ Assessment of the impact of long-term drug use on brain function (fMRI) and structure (VBM, DTI).

Challenges

- ▶ Consolidate and extend existing research lines through possible cooperation agreements with other groups and according to internal growth.
- ▶ Obtain stable funding and supporting technical staff.
- ▶ Establish new cooperation agreements within HSCSP RI.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Pharmacokinetic/Pharmacodynamic Modelling and Simulation.
- ▶ Parkinson Disease and Movement Disorders.
- ▶ Clinical Psychiatry.

External Collaborations

- ▶ Department of Psychopharmacology and Neuropsychology, Maastricht University, The Netherlands.
- ▶ Psychiatry and Behavioral Sciences Department, Johns Hopkins School of Medicine, USA.
- ▶ Department of Comparative Biomedical Sciences, Louisiana State University, USA.
- ▶ Brain Institute, Federal University of Rio Grande do Norte, Natal, Brazil.
- ▶ Neuroscience and Behaviour Department, Ribeirão Preto Medical School, University of São Paulo, Brazil.
- ▶ Cognition and Brain Plasticity Group (IDIBELL Bellvitge Biomedical Research Institute), Spain.
- ▶ Biomedical Engineering Research Centre, Universitat Politècnica de Catalunya (UPC), Spain.

Active Grants

- ▶ Jordi Riba Serrano. Farmacología humana de la salvinorina-A: estudio farmacocinético, farmacodinámico y de mecanismo de acción mediante bloqueo farmacológico de los efectos. PI12/02758. Instituto de Salud Carlos III. Duration: 2013-2017. 66,500.00 €.
- ▶ Jordi Riba Serrano and Enrique Álvarez. Efectos de un análogo de la ayahuasca sobre el procesamiento emocional en pacientes con Trastorno Límite de la Personalidad. PI16/00078. Instituto de Salud Carlos III. Duration: 2016-2019. 46,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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Morales-Garcia J.A., De La Fuente Revenga M., Alonso-Gil S., Rodriguez-Franco M.I., Feilding A., Perez-Castillo A., Riba J., The alkaloids of *Banisteriopsis caapi*, the plant source of the Amazonian hallucinogen Ayahuasca, stimulate adult neurogenesis in vitro (2017) *SCI REP-UK*, 7 (1).

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Neurobiology of Dementia



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García Losada, Lidia IR
Illan Gala, Ignacio IR
Montal Blancafórt, Víctor IR
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Subirana Castillo, Andrea IR
Torres Alcalá, Soraya IR
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Videla Toro, Laura IR
Vilaplana Martínez, Eduard CIBERNED

Main Lines of Research

- ▶ Biomarkers in Alzheimer disease and other neurodegenerative dementias:
 - CSF biomarkers in Alzheimer disease, dementia with Lewy bodies and frontotemporal dementia.
 - Amyloid and tau imaging in neurodegenerative dementias.
 - Novel MRI markers in preclinical Alzheimer disease and frontotemporal dementia.
- Biomarkers of Alzheimer disease in Down syndrome.
- Molecular basis of neurodegenerative diseases.
- Clinical trials in Alzheimer disease and dementia with Lewy bodies.

Challenges

- ▶ Maintain and increase scientific production and funding in the next 5 years.
- ▶ Develop a training plan for researchers entering the group while maintaining its translational nature.
- ▶ Establish new cooperation agreements to increase number of applications for European and international projects.
- ▶ Establish links with technological innovation groups and companies to foster additional patent applications and contracts.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Genetics in Neurodegenerative Diseases (PI: Jordi Clarimon).
- ▶ Molecular Physiology of the Synapse (PI: Alex Bayés).
- ▶ Cerebrovascular Diseases (PI: Joan Martí-Fàbregas).
- ▶ Neuromuscular Diseases (PI: Isabel Illa, Ricard Rojas).
- ▶ Parkinson Disease and Movement Disorders (PI: Jaime Kulisevsky).
- ▶ Nuclear Medicine (PI: Ignasi Carrió).

External Collaborations

- ▶ Ellen Gelpi, José L. Molinuevo, Raquel Sánchez-Valle. Hospital Clínic-IDIBAPS, Barcelona, Spain.
- ▶ Martin Ingelsson, MD, PhD, Uppsala University, Sweden.
- ▶ Tara Spiers-Jones, University of Edinburgh, UK.
- ▶ Kaj Blennow, Göteborg, Sweden.
- ▶ Bos, I. Department of Psychiatry and Neuropsychology, Maastricht University, School for Mental Health and Neuroscience, Alzheimer Center Limburg, Maastricht, Netherlands. Collaboration in the article: Estudio de los factores de riesgo en EA prodrómica.
- ▶ Collins, JA. Department of Neurology, Massachusetts General Hospital/Harvard Medical School, Charlestown, MA, USA. Collaboration in the article: Estudio de la atrofia focal temporal y la degeneración de redes en la APP semántica.
- ▶ Dekker, AD. Department of Neurology and Alzheimer Research Center, University

of Groningen, University Medical Center Groningen, Groningen, The Netherlands. Collaboration in the article: Estudio sobre biomarcadores en LCR de EA en Down.

- ▶ De Leon, MJ. Department of Psychiatry, New York University School of Medicine, Center for Brain Health, New York. Collaboration in the article: Estudio del LCR en EA medido con PET.
- ▶ De Roeck, A. Neurodegenerative Brain Diseases Group, VIB Center for Molecular Neurology, VIB, Antwerp, Belgium. Collaboration in the article: Estudio sobre mutaciones y mecanismos de transcripción en EA de inicio precoz.
- ▶ Engelborghs, S. Reference Center for Biological Markers of Dementia (BIODEM), Department of Biomedical Sciences, Institute Born-Bunge, University of Antwerp, Antwerp, Belgium. Collaboration in the article: Estudio sobre guía de consenso para punción lumbar en paciente neurológico.
- ▶ Hamlett, ED. Department of Neuroscience, Medical University of South Carolina, Charleston, SC, USA; The Knobel Institute for Healthy Aging, University of Denver, Denver, CO, USA. Collaboration in the article: Estudio sobre la revelación de los exosomas neuronales de la enfermedad de Alzheimer en el síndrome de Down.
- ▶ Irwin, DJ and Grossman, M. Center for Neurodegenerative Disease Research, Department of Pathology and Laboratory Medicine, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA. Collaboration in the article: Estudio sobre los niveles de tau en LCR ante mortem y su correlación con patología tau post mortem en demencia lobar frontotemporal.

Collaborations

- ▶ Lewczuk, P. Department of Psychiatry and Psychotherapy, Universitätsklinikum Erlangen, and Friedrich-Alexander Universität Erlangen-Nürnberg, Erlangen, Germany. Estudio del LCR y biomarcadores de sangre para las demencias neurodegenerativas.
- ▶ McCallion, P. University at Albany, Albany, NY, USA. Working Group of the International Summit on Intellectual Disability and Dementia. Collaboration in the article: Estudio sobre el consenso de la "International Summit on Intellectual Disability and Dementia" relacionada con la atención primaria en el final de la vida en demencia avanzada.
- ▶ Riancho, J. Servicio de Neurología, Universidad Hospital Marqués de Valdecilla -IDIVAL; CIBERNED, Santander, Spain. Collaboration in the article: Estudio del perfil MicroRNA en pacientes con enfermedad de Alzheimer.
- ▶ Takada, LT. Department of Neurology, Cognitive and Behavioral Neurology Unit, University of São Paulo, São Paulo, Brazil. Collaboration in the article: Estudio sobre enfermedad priónica genética y la demencia rápidamente progresiva en un centro de EUA.
- ▶ Tort-Merino, A. Alzheimer's Disease and Other Cognitive Disorders Unit, Neurology Service, Hospital Clinic, Barcelona, Spain. Collaboration in the article: Estudio sobre la detección precoz de dificultades de aprendizaje de información nueva en la enfermedad de Alzheimer preclínica.
- ▶ van Waalwijk van Doorn, LJ. Department of Neurology, Donders Institute for Brain, Cognition and Behaviour, Radboud Alzheimer Centre, Radboud University Medical Center, Nijmegen, The Netherlands. Collaboration in the article: Estudio sobre la mejora de la discriminación pacientes con Alzheimer-pacientes controles basada en el estudio de LCR.
- ▶ Verheijen, J. Neurodegenerative Brain Diseases group, VIB Center for Molecular Neurology, University of Antwerp, Antwerp, Belgium; Institute Born-Bunge, University of Antwerp, Antwerp, Belgium. Collaboration in the article: Estudio de las variantes de TBK1 en la enfermedad de Alzheimer de inicio precoz en una cohorte Europea.
- ▶ Spires-Jones, TL. The University of Edinburgh, UK Dementia Research Institute, Centre for Discovery Brain Sciences, Edinburgh Neuroscience, Euan MacDonald Centre, and Centre for Dementia Prevention, Edinburgh. Collaboration in the article: Estudio sobre la p-alpha;-synuclein sináptica en demencia por cuerpos de Lewy.
- ▶ Nordberg, A. Department of Neurobiology, Care Sciences and Society (NVS), H1, Division of Clinical geriatrics. Karolinska Institutet, Sweden. Collaboration and stage: Estudio sobre la inflamación de astrocitos en la enfermedad de Alzheimer preclínica.
- ▶ DZNE-Munich, Alemania. Collaboration and stage: Estudio de biomarcadores relacionados con la actividad microglial en enfermedades neurodegenerativas: demencia con cuerpos de Lewy, demencia frontotemporal y enfermedad de Alzheimer.
- ▶ Trinity College of Dublin, Irlanda. Estudio de la Enfermedad de Alzheimer en el síndrome de Down. Collaboration and stage as "Atlantic Fellow", programme Global Brain Health Institute.

Active Grants

- ▶ Rafael Blesa González. Enfermedad de Alzheimer y síndrome de Down. Estudios multimodales de líquido cefalorraquídeo, resonancia magnética y PET de amiloide. PI13/01532. Instituto de Salud Carlos III. Duration: 2014-2018. 107,500.00 €.
- ▶ Olivia Belbin. Contratos Miguel Servet 2013 - Tipo I. MS13/00091. Instituto de Salud Carlos III. Duration: 2014-2019. 202,500.00 €.
- ▶ Olivia Belbin. Search for synaptic biomarkers of Alzheimer's disease. CP13/00091. Instituto de Salud Carlos III. Duration: 2014-2017. 121,500.00 €.
- ▶ Alberto Lleó Bisa. Synaptic markers in preclinical Alzheimer's disease. MARATO 20142610. Fundació La Marató de TV3. Duration: 2015-2018. 159,903.00 €.
- ▶ Juan Fortea Ormaechea. Alzheimer's disease in Down's syndrome. CSF, MRI, EEG and PET multimodal studies. MARATO 20141210. Fundació La Marató de TV3. Duration: 2015-2018. 159,200.00 €.
- ▶ Juan Fortea Ormaechea. La estructura cerebral y el metabolismo en la enfermedad de Alzheimer preclínica. Interacciones entre "nuevos y viejos" biomarcadores. PI14/01126. Instituto de Salud Carlos III. Duration: 2015-2019. 101,500.00 €.
- ▶ Alberto Lleó Bisa. Marcadores sinápticos en la enfermedad de Alzheimer. PI14/01561. Instituto de Salud Carlos III. Duration: 2015-2019. 111,500.00 €.
- ▶ Olivia Belbin. Valoración y caracterización de biomarcadores del estadio preclínico de la enfermedad de Alzheimer. PI15/00058. Instituto de Salud Carlos III. Duration: 2016-2018. 56,500.00 €.
- ▶ Rafael Blesa González. Pre-clinical Alzheimer's disease and Type 2 diabetes and obesity. Effects of bariatric surgery: a multimodal study. MARATO 201614.31. Fundació La Marató de TV3. Duration: 2017-2020. 142,700.00 €.
- ▶ Rafael Blesa González. Estudio del trazador de tomografía por emisión de positrones (PET) para Tau [18F]THK-5351 en pacientes con diferentes Taupatías. PI16/01825. Instituto de Salud Carlos III. Duration: 2017-2019. 101,500.00 €.
- ▶ Alberto Lleó Bisa. Study with the tau Positron Emission Tomography radiotracer (18F)THK-5351 in patients with different Tauopathies (TAUDEM) BBVA 2016. Fundació BBVA. Duration: 2016-2019. 107,900.00 €.
- ▶ Juan Fortea Ormaechea. Contractes per a la intensificació de l'activitat investigadora en el SNS 2016. INT16/00171. Instituto de Salud Carlos III. Duration: 2017-2017. 18,000.00 €.
- ▶ María Carmona Iragui. Ajuts per a contractes de formació "Río Hortega" 2014 CM14/00029. Instituto de Salud Carlos III. Duration: 2015-2017. 53,732.00 €.
- ▶ Estrella Morenas Rodríguez. Estudi multimodal de biomarcadors en pacients amb demència amb cossos de Lewy 2015 FI_B 00336. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2015-2018. 57,465.00 €.
- ▶ Ignacio Illan Gala. Contratos i-PFIS: Doctorados IIS-Empresa en Ciencias y Tecnologías de la Salud 2015 IF15/00060. Instituto de Salud Carlos III. Duration: 2016-2017. 82,400.00 €.
- ▶ Estrella Morenas Rodríguez. Ajuts per a contractes de formació "Río Hortega" 2016 CM16/00054. Instituto de Salud Carlos III. Duration: 2017-2019. 53,732.00 €.
- ▶ Alberto Lleó Bisa. Contratos para la intensificación de la actividad en el Sistema Nacional de Salud 2015. INT15/00113. Instituto de Salud Carlos III. Duration: 2016-2017. 30,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Neurobiology of Dementia

Grants Awarded in 2017

- ▶ Raúl Nuñez Llaves. Valoración y caracterización de proteínas sinápticas como biomarcadores del daño sináptico relacionado con la enfermedad Alzheimer. SLT002/16/00099. Departament de Salut. Duration: 2017-2019. 60,783.66 €.
- ▶ Alberto Lleó Bisa. Estudio de biomarcadores y desarrollo de nuevas estrategias terapéuticas en una cohorte multicéntrica de Demencia Frontotemporal. SLT002/16/00408-01. Departament de Salut. Duration: 2017-2019. 251,426.53 €.
- ▶ Rafael Blesa González. Down Alzheimer Barcelona Neuroimaging Initiative (DABNI). LA CAIXA - DOWN ALZHEIMER, Fundació La Caixa. Duration: 2017-2020. 783,000.00 €.
- ▶ Maria Carmona Iragui. Domiciliary Alzheimer Visiting in Down syndrome. GBHI_ALZ-18-543740, ALTUM. Duration: 2017-2019. 18,433.61 €.
- ▶ Estrella Morenas Rodríguez, Estudio de biomarcadores de neuroinflamación en demencia con cuerpos de Lewy y demencia frontotemporal. MV17/00026. Instituto de Salud Carlos III. Duration: 2017-2018. 11,960.00 €.
- ▶ Alberto Lleó Bisa, Estudio de biomarcadores y desarrollo de nuevas estrategias terapéuticas en una cohorte multicéntrica de Demencia Frontotemporal. SLT002/16/00408. Departament de Salut. Duration: 2017-2019. 123,280.20 €.
- ▶ Alberto Lleó Bisa, Aplicación de Tomografía de Array (AT) para el estudio sistemático a gran escala del daño sináptico en las demencias neurodegenerativas. PI17/01896. Instituto de Salud Carlos III. Duration: 2018-2020. 77,000.00 €.
- ▶ Juan Fortea Ormaechea, Estudios longitudinales de RM magnética, de difusión y funcional en la enfermedad de Alzheimer preclínica esporádica y asociada al síndrome de Down., PI17/01019, Instituto de Salud Carlos III, Duration: 2018-2020, 127,000.00 €.
- ▶ Ignacio Illan Gala, Contractes de formació en recerca "Río Hortega" 2017., CM17/00074, Instituto de Salud Carlos III, Duration: 2018-2019, 53,732.00 €.
- ▶ Sonia Sirisi Dolcet, Contractes postdoctorals "Sara Borrell" 2017., CD17/00055, Instituto de Salud Carlos III, Duration: 2018-2020, 80,598.00 €.
- ▶ Sonia Sirisi Dolcet, Daños sinápticos en la Demencia Frontotemporal., FJCI-2016-30669, Ministeri d'Economia i Competitivitat, Duration: 2018-2019, 50,000.00 €.
- ▶ Cristina Guardia Laguarda, Efecto de las manipulaciones genéticas y farmacológicas sobre la actividad del complejo gamma-secretasa., 2016BP00112, Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 92,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Martí Colom Cadena. Neuropathology of Lewy body diseases: Confluence of multiple pathologies and role of synaptic p- α -synuclein. Universitat de Barcelona. Directors: Lleó A., Gelpi E., Ferrer, I. Date of defense: 14/06/2017.
- ▶ María Carmona-Iragui. Sporadic cerebral amyloid angiopathy, beyond lobar intracerebral hemorrhage: multimodal biomarker studies of atypical presentations. Universitat Autònoma de Barcelona, Lleó A., Fortea J., Blesa R. Date of defense: 12/06/2017.
- ▶ Miguel Ángel Santos Santos. Clinicopathologic correlations and neuroimaging biomarkers in primary progressive aphasia. Universitat Autònoma de Barcelona. Directors: Fortea J., Escartín A., Gorno-Tempini M.L. Date of defense: 29/06/2017.
- ▶ Eduard Vilaplana Martínez, A biphasic model for cortical structural changes in preclinical AD: a multimodal MRI, CSF and PET study. Universitat Autònoma de Barcelona, Lleó A., Fortea J. Date of defense: 31/10/2017.

Awards

- ▶ Daniel Alcolea. Award to the best PhD thesis in neurosciences. SEN (Sociedad Española de Neurología).
- ▶ Benejam B., Videla L, Carmona M, Alcolea D, Fernández González S, Videla S, Lleó A, Blesa R, Fortea J. Biomarcadores en líquido cefalorraquídeo y correlatos neuropsicológicos en una cohorte de personas con síndrome de Down. In: LXIX Reunión Anual de la Sociedad Española de Neurología. Valencia 21-24 nov 2017. Oral communication selected as stellar.
- ▶ Illán Gala I, Montal V, Vilaplana E, Pegueroles J, Alcolea D, Rojas R, Lladó A, Blesa R, Sánchez Valle R, Lleó A, Fortea J. Cortical Microstructural Changes in FTLD: A Novel Imaging Biomarker. In: XXI Reunión Anual de la Societat Catalana de Neurologia. Barcelona 04-05 may 2017. Oral communication awarded.
- ▶ Montal Blancafort V, Illán Gala I, Vilaplana E, Pegueroles J, Alcolea D, Borrego S, Sánchez Saudinós MB, Subirana A, Clarimón J, Lladó A, Blesa R, Sánchez Valle R, Lleó A, Fortea J. Cambios microestructurales corticales en los síndromes relacionados con la degeneración lobular frontal: un nuevo marcador de neuroimagen. In: LXIX Reunión Anual de la Sociedad Española de Neurología. Valencia 21-24 nov 2017. Oral communication selected as stellar.
- ▶ Vilaplana E, Montal V, Pegueroles J, Alcolea D, Carmona-Iragui M, Sampedro F, Camacho V, Clarimón J, Blesa R, Lleó A, Fortea J. Biphasic model of preclinical Alzheimer's disease: AV45 PET, CSF Tau and cortical thickness. In: Alzheimer Association International Conference 2017 (AAIC). London (United Kingdom) 16-20 jul 2017. Oral communication awarded with a fellowship.
- ▶ Vilaplana E, Montal V, Pegueroles J, Alcolea D, Illán I, Carmona-Iragui M, Clarimón J, Blesa R, Lleó A, Fortea J. PET de tau: envejecimiento sano y patológico. In: LXIX Reunión Anual de la Sociedad Española de Neurología. Valencia 21-24 nov 2017. Oral communication selected as stellar.

Transfer Products

- ▶ FUJIREBIO EUROPE N.V. Validación kits ELISA diagnóstico de tau y beta-amiloide con tecnología Lumipulse.
- ▶ Merck, Sharp & Dohme de España, S.A. Recursos humanos necesarios para llevar a cabo las tareas de entrada de preparación de las visitas de los pacientes.

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Neurobiology of Dementia

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Other Publications

▶ Ortiz B, Videla L, Gich I, Alcacer B, Torres D, Jover I, Sánchez E, Iglesias M, Fortea J, Videla S. Señales de alarma de trastornos del espectro autista en personas con Síndrome de Down. *Rev Med Int Sindr Down*. 2017; 21(1): 3-11.

Neuroradiology



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Méndez, Jorge	FGS
Pires, Patricia	UAB

Main Lines of Research

Ours is a multidisciplinary research group, which has the added value of combining neuroimaging skills of the members of the Neuroradiology clinical unit at Hospital de la Santa Creu i Sant Pau with technological knowledge from PIC/IFAE investigators at the Universitat Autònoma de Barcelona (Spain) and University College London (UCL, UK).

Our focus are: 1) Neuroimaging biomarkers in diseases involving the central nervous system, including neurodegenerative and neuropsychiatric conditions; 2) Automatic procedures and software tools, especially those of Deep Learning/Artificial Intelligence, in neuroradiology.

Challenges

- ▶ To achieve visibility of our research group and of neuroradiology –often considered by clinicians more a technical tool rather than a discipline in itself– as a defined field of knowledge.
- ▶ To add knowledge in clinical Neuroradiology to the development and implementation of Artificial Intelligence in Diagnostic Imaging.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Pituitary Gland Disorders, Digestive Diseases, Parkinson Disease and Movement Disorders, Cerebrovascular Diseases.
- ▶ Neuro-Oncology, Maternal Care/Obstetrics, Clinical Psychiatry, Head and neck Tumours/Otorrinolaringology.

External Collaborations

- ▶ University College London (UCL), London, UK (B. Gómez-Anson is Hon Associate Lecturer).

- ▶ Translational Imaging Group, UCL (C. Sudre), and National Hospital for Neurology and Neurosurgery (R. Jäger), London, UK.
- ▶ The role of conventional radiological approach in machine learning. C. Sudre, B. Gómez-Anson, Prof. R. Jäger, M.J. Cardoso, et al. <http://cmictig.cs.ucl.ac.uk/the-role-of-conventional-radiological-approach-in-machine-learning>
- ▶ PIC (Information Science Port) / IFAE (Institute for High Energy Physics), Universitat Autònoma de Barcelona, Spain

Theses

- ▶ Patricia Pires Encuentra. Análisis del estado e integridad de la sustancia blanca por cortisolismo endógeno en el Síndrome de Cushing. Directors: Beatriz Gómez Ansón, Susana Webb Youdale. Date of defense: 19/09/2017.

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Ageing Institute



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Main Lines of Research

Health promotion and prevention in older people

- ▶ Healthy ageing. Promotion of intrinsic capacities.
- ▶ Healthy habits: Physical activity, sedentary behaviour, healthy diet, cognition stimulation.
- ▶ Epidemiological studies.
- ▶ ICT applications to promote healthy ageing.

Geriatric Syndromes and Health problems of older people

- ▶ Geriatric Syndromes and Health problems of older people

- ▶ Fragility and sarcopenia.
- ▶ Falls.
- ▶ Functional loss.
- ▶ Alzheimer Disease and other dementias.
- ▶ Malnutrition.

Long Term Care

- ▶ Health and social services for older people.
- ▶ Personal Centered Care.
- ▶ Caregivers of older adults.
- ▶ ICT applications to health, social services.
- ▶ Functional assessment.

Challenges

Health promotion and prevention in older people

- ▶ Area mainly focused on health promotion and disability prevention to improve quality of life among older people. How we improve intrinsic capacities and functional capacity with age.
- ▶ Clinical and epidemiological research undertaken includes both observational and intervention studies, with the main lines of research referring to mobility, nutrition and cognition.
- ▶ ICT Solutions for promoting healthy ageing.

Geriatric Syndromes and Health problems of older people

- ▶ Screening, diagnosis and intervention in geriatric syndromes.
- ▶ Screening of frailty and sarcopenia. How to apply in clinical practice.
- ▶ Identifying risk of falls and falls prevention in the community and nursing homes.

Long Term Care

- ▶ How to apply Personal Centered Care in social centres is a key element to promote quality of social services.
- ▶ New models of services for older people with long term care needs.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ FRAPEM: FIS Fragilitat. EAP Sardenya.
- ▶ FIS Memory Workshops. Public Health Agency of Barcelona and EAP Sardenya.

External Collaborations

- ▶ The group participates usually in CE-funded projects.

- ▶ The Group belongs to the Global Research Network of the International Association of Geriatrics and Gerontology.

- ▶ Participation in european groups. Currently:

- The group of nutrition and cognitive decline of the EUGMS (European Union Geriatric Medicine Society)
- MOBEX group: about mobility and falls

Active Grants

- ▶ AEQUALIS. Promovent l'autocura, l'alfabetització per a la salut i el capital social en persones grans de zones urbanes desfavorides socioeconòmicament. <http://salut-nvelliment.uab.cat/aequalis/>. Recerca. IP. Sergi Blancafort. 78.111,55 €
- ▶ SITLESS. Exercise Referral Schemes enhanced by Self-Management Strategies to battle sedentary behavior. H2020. (Coordinator Centre). IP. Antoni Salvà. Local grant: 789.684 € <http://sitless.eu>
- ▶ NESTORE. Novel Empowering Solutions and Technologies for Older people to Retain Everyday life activities. H2020. IP Giuseppe Andreoni. Local IP. Laura Fernández. 299.500,71 €. <https://nestore.ro/home>
- ▶ APTITUDE. Actuar per a la prevenció Transpirinca de la dependència en les persones grans. Programa Interreg-POCTEFA 2014-2020. IP. Bruno Vellas. Local IP. Antoni Salvà. 390.000 €
- ▶ INNOBRAIN. Noves tecnologies per a la innovació en rehabilitació i estimulació cognitiva COMRDI15-1-0017Ris3Cat. IP. Antoni Rivero. 42.370,39 €
- ▶ REMI en centres d'atenció social i socio sanitària per a persones grans. Obre Social La Caixa. IP: Antoni Rivero. 45.386 €. <http://salut-envelliment.uab.cat/remi/>
- ▶ LOMAPT. Prevention of cognitive decline in older adults with low DHA/EPA index in red blood cells. IP. Bruno Vellas. Up to 723.895 € (Max.).
- ▶ SUMAR. 16470,40 €: 1. Avaluació de l'impacte d'un model d'ACP en residències per a persones grans. IP. Antoni Salvà. 2. Construcció d'una eina per a l'avaluació de la satisfacció en residències. IP Antoni Rivero.
- ▶ XARESS. Xarxa de recerca en centres socio sanitària. Dep Salut. IP. Antoni Salvà.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Laura Coll. Solitud, suport social i participació de les persones grans des d'una perspectiva de la salut. Universitat Autònoma de Barcelona. Directors: Maria Teresa Puig Reixach and Fredrica Nyqvist. Date of defense: 30/05/2017.
- ▶ Toni Rivero. Envel·liment i productivitat científica individual: Evidència empírica pel professorat d'Economia i Empresa a Catalunya 2017. Universitat Autònoma de Barcelona. Director: Josep Lluís Raymond. Date of defense: 19/07/2017.
- ▶ Xavier Rojano. Prevalença de la fragilitat i la sarcopènia a l'atenció primària: relació amb l'estat cognitiu del pacient. Universitat Autònoma de Barcelona. Director: Rosa Monteserín. Date of defense: 15/09/2017.

Other Publications

- ▶ Blancafort Alias S, Lobera Barendse A, González Fernández C, Ríos Maré A, González Riera A, Coll-Planas L. El ensayo clínico AEQUALIS para mejorar la salud autopercebida en personas mayores: evaluación de la intervención piloto Sentirnos Bien. Comunidad Julio 2017; 19(2): 4.

Ageing Institute

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Scientific Production

Arevalo-Rodriguez I., Munoz L., Godoy-Casabuenas N., Ciapponi A., Arevalo J.J., Boogaard S., Roquei Figuls M., Needle gauge and tip designs for preventing post-dural puncture headache (PDPH) (2017) COCHRANE DB SYST REV, 2017 (4).

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Coll-Planas L, Monteserín R, Cob E, Blancafort S. [What are primary health care teams doing about loneliness?] *Aten Primaria*. 2017 Mar 30.

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Addictive Behaviours



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Main Lines of Research

Alcohol

- ▶ Pharmacological, non-interventional, prospective, multicenter study with Selincro® in alcohol dependence, to determine patterns of use and consumption of alcohol in routine clinical practice in Spain.
- ▶ Prospective observational study for reducing the negative consequences associated with excessive alcohol use (RINCA) through the treatment program to reduce alcohol consumption with nalmefene.

Cocaine

- ▶ Evaluation of cocaine craving during hospitalization conditions.

Smoking

- ▶ Evaluation of the neuropsychiatric safety and efficacy of varenicline and bupropion

hydrochloride for smoking cessation in subjects with and without a history of psychiatric disorders.

- ▶ Non-treatment follow-up for cardiac assessments following use of smoking cessation treatments in subjects with and without a history of psychiatric disorders.
- ▶ Effectiveness of a telephone intervention for smoking cessation in patients with mental disorder: a pragmatic clinical trial

Opiates

- ▶ Patient satisfaction concerning maintenance treatment with opioid agonists (methadone and buprenorphine/naloxone).
- ▶ Satisfaction of the heroin-dependent patient regarding methadone and methadone pharmacogenetics.

Challenges

- ▶ Establish bidirectional links between clinical practice and investigation both to suggest hypotheses and incorporate recent advances.
- ▶ Participate in controlled clinical trials on the treatment of addictive disorders.
- ▶ Develop clinical research studies into the perspective of patients with addictions.
- ▶ Integrate clinical research in routine medical practice to assess the effectiveness of procedures.
- ▶ Evaluate the validity and reliability of frequently used clinical evaluation procedures.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Clinical Epidemiology and Healthcare Services.
- ▶ Clinical Psychiatry.
- ▶ Genetic Diseases.

External Collaborations

- ▶ DeustoPsych, R+D+I in Psychology and Health, University of Deusto, Bilbao, Spain.
- ▶ Joan Trujols. Calidad de vida y satisfacción con el tratamiento en pacientes dependientes de opioides en mantenimiento con metadona: Desarrollo y estudio piloto de dos autoinformes centrados en la perspectiva del paciente (13BICIBE08). Internal call CIBERSAM. 4,050 €.

Awards

- ▶ Pérez de los Cobos J, Trujols J, Alcaraz S, Siñol N, Lozano O, González-Saiz F, Buprenorphine/Naloxone Survey Group. Propiedades psicométricas de la Escala para Valorar la Satisfacción con los Medicamentos para Tratar las Adicciones – Buprenorfina/Naloxona para la Adicción a la Heroína (SASMAT-BUNHER). Best Poster in Neuropsychopharmacology XX Congreso Nacional de Psiquiatría. Barcelona, November 2017.

Active Grants

- ▶ José Carlos Pérez de los Cobos Peris. Hacia la identificación de los mecanismos que permiten inhibir el craving de cocaína: valoración de factores motivacionales y cognitivos potencialmente relacionados con la ausencia de craving PI12/00105. Instituto de Salud Carlos III. Duration: 2013-2017. 74,500.00 €.
- ▶ Joan Trujols Albet. Calidad de vida desde la perspectiva del paciente en tratamiento con agonistas opioides: síntesis de estudios cualitativos y desarrollo de una escala centrada en el paciente P116/00056. Instituto de Salud Carlos III. Duration: 2017-2019. 28,500.00 €.
- ▶ José Carlos Pérez de los Cobos Peris. Efecto de los polimorfismos de genes implicados en el perfil farmacodinámico y farmacocinético de la metadona sobre la satisfacción con este medicamento en pacientes dependientes de heroína con mala respuesta terapéutica 2016 I036. Ministerio de Sanitat, Serveis Socials i Igualtat. Duration: 2017-2019. 24,480.00 €.

▶ Joan Trujols Albet. Satisfacción con el tratamiento de mantenimiento con agonistas opioides: Revisión sistemática de instrumentos de medida y síntesis cuantitativa de las diferencias en los niveles de satisfacción en función del medicamento y de la escala 2013 I060. Ministerio de Sanitat i Política Social. Duration: 2014-2017. 15,630.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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Scientific Production

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Alcaraz S., Trujols J., Sinol N., Duran-Sindreu S., Batlle F., Perez de los Cobos J., Exploring predictors of response to methadone maintenance treatment for heroin addiction: The role of patient satisfaction with methadone as a medication (2017) HEROIN ADDICT REL CL, 19 (4), 35-40.
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Del Pino-Gutierrez A., Jimenez-Murcia S., Fernandez-Aranda F., Aguera Z., Granero R., Hakansson A., Fagundo A.B., Bolao F., Valdeperez A., Mestre-Bach G., Steward T., Penelo E., Moragas L., Aymami N., Gomez-Pena M., Rigol-Cuadras A., Martin-Romera V., Menchon J.M., The relevance of personality traits in impulsivity-related disorders: From substance use disorders and gambling disorder to bulimia nervosa (2017) J BEHAV ADDICT, 6 (3), 396-405.
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Pérez de los Cobos J, Alcaraz S, Siñol N, Aranz MJ, Trujols J, Batlle F, Calafell F, Durán-Sindreu S, Salazar J. Satisfaction with methadone and opioid receptor genes polymorphisms in treatment-refractory heroin-dependent patients. J CLIN PSYCHOPHARMACOL. (2017). 37 (3), 378-380.
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Trujols J., Gonzalez-Saiz F., Manresa M.J., Alcaraz S., Batlle F., Duran-Sindreu S., Perez de los Cobos J., Patient perception of methadone dose adequacy in methadone maintenance treatment: The role of perceived participation in dosage decisions (2017) PATIENT EDUC COUNS, 100 (5), 981-986.
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Vaquero L., Camara E., Sampedro F., Perez de los Cobos J., Batlle F., Fabregas J.M., Sales J.A., Cervantes M., Ferrer X., Lazcano G., Rodriguez-Fornells A., Riba J., Cocaine addiction is associated with abnormal prefrontal function, increased striatal connectivity and sensitivity to monetary incentives, and decreased connectivity outside the human reward circuit (2017) ADDICT BIOL, 22 (3), 844-856.
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Trujols J., Gonzalez-Saiz F., Manresa M.J., Alcaraz S., Batlle F., Duran-Sindreu S., Perez de los Cobos J., Patient perception of methadone dose adequacy in methadone maintenance treatment: Reflections on 10 years of research (2017). Aloma, 35 (2) 39-50.

Trujols J, Guardia-Olmos J, Iraurgi I, Pérez de los Cobos J. Approaches to the perspective of the individual receiving methadone maintenance treatment: Reflections on 10 years of research (2017). Aloma, 35 (2) 39-50.

Other Publications

- ▶ Trujols J, Guardia-Olmos J, Iraurgi I, Pérez de los Cobos J. Approaches to the perspective of the individual receiving methadone maintenance treatment: Reflections on 10 years of research (2017). Aloma, 35 (2) 39-50.

Molecular Physiology of the Synapse



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Main Lines of Research

- ▶ Molecular and cellular analyses of the vertebrate synapse.
- ▶ Molecular and cellular dysfunctions underlying intellectual disability and autism.
- ▶ Research into animal models of mental and behavioural disorders.
- ▶ Development of new biochemical methods to study the synapse.

Challenges

- ▶ Characterize the molecular roots of cognition and behaviour.
- ▶ Identify the synaptic molecules and mechanisms involved in mental and behavioural disorders, mainly intellectual disabilities and autism spectrum disorders.
- ▶ Identify drugs which might help treat mental and behavioural disorders.
- ▶ Study the reversibility after birth of neurodevelopmental disorders affecting cognition.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Neurobiology of Dementias (PI: Alberto Lleó)
- ▶ Oncogenesis and Antitumour Drugs (PI: Ramón Mangués)
- ▶ Molecular Bases of Disease (PI: Pablo Fuentes-Prior)
- ▶ Neurosurgery (PI: Joan Molet)

External Collaborations

- ▶ Prof. Seth GN Grant. University of Edinburgh, UK.
- ▶ Dr. Noboru Komiyama. University of Edinburgh, UK.
- ▶ Dr. Gavin Rumbaugh. Scripps Research Institute, USA.
- ▶ Dr. Richard Emes. University of Nottingham, UK.
- ▶ Dr. Maksym Kopanitsa. Charles River Laboratories, Finland.
- ▶ Dr. Hector Escribà. Sorbonne Universités, UPMC Univ Paris 06, CNRS, France.

- ▶ Dr. Nael Nadif-Kasri. Radboud University, The Netherlands.
- ▶ Dr. Jyoti S. Choudhari. The Wellcome Trust Sanger Institute, UK.
- ▶ Dr. Mark Collins. University of Sheffield, UK.
- ▶ Dra. Àngels García-Cazorla. Hospital Sant Joan de Déu, Barcelona.
- ▶ Dra. Nerea Roher. Universitat Autònoma de Barcelona, Bellaterra.
- ▶ Dr. Jordi García Fernández. Universitat de Barcelona, Barcelona.
- ▶ Dr. Carles Sindreu. Universitat de Barcelona, Barcelona.
- ▶ Dr. David Soto. Universitat de Barcelona, Barcelona.
- ▶ Dr. Xavier Altafaj. Bellvitge Biomedical Research Institute (IDIBELL), Barcelona
- ▶ Dra. Liset Menéndez de la Prida. Instituto Cajal, Madrid.
- ▶ Dr. Angel Barco. Instituto de Neurociencias, Alicante.
- ▶ Dr. Andres Ozaita. Universitat Pompeu Fabra, Barcelona.

Active Grants

- ▶ Gemma Gou Alsina. Contratos Predoctorales para la Formación de Doctores 2013 BES-2013-063720. Ministerio de Economía y Competitividad. Duration: 2013-2017. 83,900.00 €.
- ▶ Alejandro Bayés Puig. Red para el estudio de la sinapsis en el contexto de la disfunción cognitiva SAF2014-52624-REDT. Ministerio de Economía y Competitividad. Duration: 2014-2017. 32,000.00 €.
- ▶ Alejandro Bayés Puig. Looking into the dynamics of synaptic molecular machines to learn about the basis of cognition and intellectual disability BFU2015-69717-P. Ministerio de Economía y Competitividad. Duration: 2016-2019. 156,800.00 €.
- ▶ Alejandro Bayés Puig. Targeted nanoconjugates for the selective elimination of stem cells in disseminated cancer PIE15/00028. Instituto de Salud Carlos III. Duration: 2016-2018. 93,448.00 €.
- ▶ Alejandro Bayés Puig. Subvenciones del Programa Ramón y Cajal concedidas por la Resolución 05/12/2011. RYC-2011-08391. Ministerio de Economía y Competitividad. Duration: 2012-2017. 168,600.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Gemma Gou Alsina. Estudio de los mecanismos moleculares de la sinapsis implicados en procesos cognitivos y en la discapacidad cognitiva no sindrómica. EEBB-I-17-11996. Ministerio de Economía y Competitividad. Duration: 2017-2017. 6,280.00 €.
- ▶ Alejandro Bayés Puig. Synaptic Dysfunction in Intellectual Disability Caused by SYNGAP1. Translational Research to Develop Human Models and Advance Pharmacological Treatments. AC17/00005. Instituto de Salud Carlos III. Duration: 2018-2020. 123,500.00 €.
- ▶ Alejandro Bayés Puig. Ayudas para la incorporación estable de doctores 2017. IEDI-2017-00822. Ministerio de Economía y Competitividad. Duration: 2018-2020. 100,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ F1000 recommended our publication: Àlex Bayés, Mark O Collins, Rita Reig-Viader, Gemma Gou, David Goulding, Abril Izquierdo, Jyoti S Choudhary, Richard D Emes and Seth GN Grant. Evolution of complexity in the zebrafish synapse proteome. Nature Communications 2017 Mar 2; 8: 14613.

Books or chapters with ISBN

- ▶ Rita Reig-Viader and Àlex Bayés. Quantitative In-Depth profiling of the Postsynaptic Density Proteome to Understand the Molecular Mechanisms Governing Synaptic Physiology and Pathology. Current Proteomic Approaches Applied to Brain Function. 2017 Human Press, Springer Protocols. ISBN 978-1-4939-7119-0.

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Scientific Production

Bayes A., Collins M.O., Reig-Viader R., Gou G., Goulding D., Izquierdo A., Choudhary J.S., Emes R.D., Grant S.G.N., Evolution of complexity in the zebrafish synapse proteome (2017) NAT COMMUN, 8.
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AREA 5

Urology and Experimental S

178 General and Digestive Surgery

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Surgery



General and Digestive Surgery



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Moral Duarte, Antonio FGS
Pérez García, José Ignacio FGS
Rodríguez Blanco, Manuel FGS
Rofin Serra, Silvia FGS
Targarona Soler, Eduardo María FGS

Main Lines of Research

Gastrointestinal Surgery

- ▶ Application of laparoscopic surgery in diseases of the spleen.
- ▶ Application of laparoscopic surgery in disorders of the oesophagogastric junction.
- ▶ Advanced application of colorectal laparoscopy.
- ▶ New stratification and treatment options in colorectal cancer.

Oncological and Hepatobiliopancreatic Surgery

- ▶ Surgery for liver metastasis in colorectal cancer.
- ▶ Development of diagnostic and therapeutic techniques in the global context of treatment for liver metastasis in colorectal carcinoma.
- ▶ Surgery for primary hepatic tumours: determination of efficient prognostic parameters for surgical

resection of hepatocarcinoma and likelihood of tumour recurrence after resection.

- ▶ Introduction of the laparoscopic methodology to biliary lithiasis.
- ▶ Surgery for sarcomas: participation in GIST research through the Spanish Sarcoma Research Group (GEIS) and other entities.
- ▶ Surgery for sarcomas: participation in the development and results of surgery for retroperitoneal tumours.

Emergency Care

- ▶ Collaborative project on clinical safety for the introduction of safe practices for polytraumatized patients.

Challenges

Gastrointestinal Surgery

- ▶ Design, develop and manage a dry laboratory for endoscopic surgery, creating a multifunctional research and teaching space to conduct applied technological research in minimally invasive surgery.

Hepatobiliopancreatic Surgery

- ▶ Development of techniques to study liver volume and function.
- ▶ Development of experimental studies on the function and healing of bilio-intestinal sutures.
- ▶ Studies of the value of nutrition in patients undergoing aggressive surgery for highly debilitating cancer.
- ▶ Suitable stratification of GIST tumours in accordance with an anatomopathological classification.

- ▶ Viability of surgical interventions considering the likelihood of disease recurrence.

Emergency Surgery

- ▶ Consolidation of a multidisciplinary group for polytraumatized patient care.

Breast Surgery

- ▶ Technological innovations in surgery.
- ▶ Possible role of genetic studies in diagnosis and follow-up.

Endocrinal and Cervical Surgery

- ▶ Technical innovations in surgery.

Books or chapters with ISBN

- ▶ Monclova, Targarona, EM, Balague, C, R Luppi, C. Minimally invasive splenectomy for oncological diseases of the spleen. In: MA Cuesta. Minimally Invasive Upper Abdominal Surgery, Ed. Springer, 2017. ISBN 978-3-319-54301-7.

- ▶ Targarona, EM. Manual of the European Association of Endoscopic Surgery (EAES). Laparoscopic surgery of the spleen, In: Bonjer J. Surgical Principles of Minimally Invasive Procedures. Eds. Springer 2017. ISBN : 978-3-319-43194-9

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Scientific Production

Arezzo A., Balague C., Targarona E., Borghi F., Giraudo G., Ghezzi L., Arroyo A., Sola-Vera J., de Paolis P., Bossotti M., Bannone E., Forcignano E., Bonino M.A., Passera R., Morino M., Colonic stenting as a bridge to surgery versus emergency surgery for malignant colonic obstruction: results of a multicentre randomised controlled trial (ESCO trial) (2017) *SURG ENDOSC*, 31 (8), 3297-3305.

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ording to large databases: a systematic review (2017) *LANGENBECK ARCH SURG*, 402 (6), 885-899.

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Ordieres C., Navascues C.A., Gonzalez-Dieguez M.L., Rodriguez M., Cadahia V., Varela M., Rodrigo L., Rodriguez M., Prevalence and epidemiology of hepatitis D among patients with chronic hepatitis B virus infection: A report from Northern Spain (2017) *EUR J GASTROEN HEPAT*, 29 (3), 277-283.

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Rodriguez de Lope C., Reig M., Matilla A., Ferrer M.T., Duenas E., Minguez B., F. Castro-agudin J., Ortiz I., Pascual S., Lledo J.L., et al., 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 Características clínicas del carcinoma hepatocelular en España. Comparación con el período 2008-2009 y análisis de las causas del diagnóstico fuera de cribado. Estudio de 686 casos en 73 centros (2017) *MED CLIN-BARCELONA*, 149 (2), 61-71.

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Rodriguez-Otero Luppi C., Targarona Soler E.M., Balague Ponz C., Pantoja Millan J.P., Turrado Rodriguez V., Pallares Segura J.L., Bollo Rodriguez J., Trias Folch M., Clinical,

Anatomical, and Pathological Grading Score to Predict Technical Difficulty in Laparoscopic Splenectomy for Non-traumatic Diseases (2017) *WORLD J SURG*, 41 (2), 439-448.

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Sanchez Santos R., Corcelles R., Vilallonga Puy R., Delgado Rivilla S., Ferrer J.V., Foncillas Corvinos J., Masdevall Noguera C., Socas Macias M., Gomes P., Balague Ponz C., et al., Prognostic factors of weight loss after sleeve gastrectomy: Multi centre study in Spain and Portugal Factores predictivos de pérdida ponderal tras la gastrectomía vertical. Estudio multicéntrico hispano-portugués (2017) *CIR ESPAN*, 95 (3), 135-142.

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Targarona E.M., Frasson M., Balibrea J.M., Lopez-Cano M., Rios A., Ferrer J., CIRUGÍA ESPAÑOLA: Evolution and continuity CIRUGÍA ESPAÑOLA: evolución y continuidad (2017) *CIR ESPAN*, 95 (5), 243-244.

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Van der Pas M.H.G.M., Deijen C.L., Abis G.S.A., de Lange-de Klerk E.S.M., Haglind E., Furst A., Lacy A.M., Cuesta M.A., Bonjer H.J., D'Hoore A., et al., Conversions in laparoscopic surgery for rectal cancer (2017) *SURG ENDOSC*, 31 (5), 2263-2270.

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Other Publications

▶ Domínguez, R., Medrano, R., Rofin, S., Caballero, F. & Trias, M. Cirugía urgente de la pared abdominal. *Rev Hispanoam Hernia*. 2017; 5(3): 91-94.

▶ Hernández Casanovas MP, Martínez MC, Bollo J, Balla A, Batista Rodríguez G, Balagué C, Targarona EM. Laparoscopic approach for retrorectal tumors-results of a series of 11 cases. *Ann Laparosc Endosc Surg* 2017; 2: 126.

▶ Martín, B., Medrano, R., Caballero, F., Rofin, S., & Trias, M. (2017). Intestinal Obstruction Complicated by Large Morgagni Hernia. *Archives of Surgery and Clinical Research*, 1(1), 016-020.

Neurosurgery



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Main Lines of Research

- ▶ Biomaterials: comparative study of two different cranial bone fixations.
- ▶ Tumour biology: gliomas (prognostic value of different mutations in anaplastic astrocytoma and GBM), pituitary gland adenomas.
- ▶ Biomarkers in anaplastic astrocytomas and glioblastoma multiforme.
- ▶ Anatomy of the skull base.
- ▶ Clinical evaluation of neurostimulation techniques in different neurological entities (treatment-resistant depression and neuropathic pain).

Challenges

- ▶ Monitor the clinical trial on treatment-resistant depression treated using deep brain stimulation techniques (jointly with psychiatry).
- ▶ Evaluate neurostimulation for other disorders: cluster headache.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Fernando Muñoz, Ignasi Català. IMPACT-24 study. Effects of pterygopalatine ganglion stimulation on cerebral perfusion in patients with stroke, Brainsgate. Principal researcher: Joan Martí.
- ▶ Fernando Muñoz, Cristian de Quintada, Ignasi Català, Carles Asencio. CLEAR III. Clot Lysis: Evaluating Accelerated Resolution of Intraventricular Hemorrhage Phase III. John Hoppinkgs Hospital. Principal researcher: Joan Martí.
- ▶ Fernando Muñoz, Carlos Asencio. Estudi MISTIE III. Minimally Invasive Surgery Plus rt-PA for Intracerebral Hemorrhage Evacuation. Principal researcher: Fernando Muñoz Hernández.

- ▶ Fernando Muñoz, Carlos Asencio. SWITCH Trial. Swiss Trial of Decompressive Craniectomy versus Best Medical Treatment of Spontaneous Intracerebral Hemorrhage. A Randomized Controlled Trial. Principal researcher: Fernando Muñoz.

External Collaborations

- ▶ Joan Molet. MOBI-KITS study. Prospective multicentre worldwide study of the relationship between cell phone use and brain tumour development in the youth population, 7th Framework Programme. ENV-2008-226873. Coordinators Spain: Carlos Díaz Acedo and Sandra Plans. Coordinator Catalonia: CREAL.

Theses

- ▶ Fernando Muñoz Hernández. Estudi comparatiu entre cirurgia endoscòpica transesfenoidal versus cirurgia tradicional transesfenoidal amb microscopi per l'exèresi d'adenomes hipofisaris. Universitat Autònoma de Barcelona. Directors: Xavier Rius Cornadó, Pere Tresserras Ribó. Date of defense: 19/04/2017.

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Scientific Production

Casanova M.J., Chaparro M., Garcia-Sanchez V., Nantes O., Leo E., Rojas-Feria M., Jauregui-Amezaga A., Garcia-Lopez S., Huguet J.M., Arguelles-Arias F., et al., Evolution after Anti-TNF Discontinuation in Patients with Inflammatory Bowel Disease: A Multicenter Long-Term Follow-Up Study (2017) AM J GASTROENTEROL, 112 (1), 120-131.

IF: 10.231

Montes A., Fernandez A., Camacho V., de Quintana C., Gallego O., Craven-Bartle J., Lopez D., Molet J., Gomez-Anson B., Carrio I.,

The usefulness of 18F-fluorocholine PET/CT in the detection of recurrence of central nervous system primary neoplasms Valor de la PET/TC cerebral con 18F-fluorocolina en la detección de recurrencias de neoplasias primarias del sistema nervioso central (2017) REV ESP MED NUCL IMA, 36 (4), 227-232.

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Ordas I., Domenech E., Manosa M., Garcia-Sanchez V., Iglesias-Flores E., Penalva M., Canas-Ventura A., Merino O., Fernandez-Banares F., Gomollon F., Vera M., Gutier-

rez A., Garcia-Planella E., Chaparro M., Aguas M., Gento E., Munoz F., Aguirresarobe M., Munoz C., Fernandez L., Calvet X., Jimenez C.E., Montoro M.A., Mir A., De Castro M.L., Garcia-Sepulcre M.F., Bermejo F., Panes J., Esteve M., Long-Term Efficacy and Safety of Cyclosporine in a Cohort of Steroid-Refractory Acute Severe Ulcerative Colitis Patients from the ENEIDA Registry (1989-2013): A Nationwide Multicenter Study (2017) AM J GASTROENTEROL, 112 (11), 1709-1718.

IF: 10.231

Nephrology



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Torra Balcells, Roser F. Puigvert

Main Lines of Research

Fundació Puigvert's Nephrology Research Group has been part of the IIB since its very beginning. The group carries out translational research within the field of renal diseases along different lines from hypertension, hereditary diseases, glomerular diseases and renal fibrosis, to transplants and dialysis.

Those different lines are analysed in detail below:

- ▶ Dra. Torra is the head researcher of the hereditary diseases line she and Dra. Ars have led many research projects on these diseases, and both have supervised several doctoral theses. The hereditary renal diseases team is currently analysing phenotype variability of those diseases, both in its genomic and its clinical dimension. Dra. Torra coordinates both the Catalan and the Spanish hereditary renal diseases teams, and is a member of the homonymous European board of the EDTA (European Dialysis and Transplant Association).
- ▶ Dra. Ars heads the molecular genetics laboratory; she has optimised the Next generation sequencing tools for hereditary renal diseases, in collaboration with Dra. Gemma Bullich. Dra. Ars coordinates the Sant Pau IIB's Fundació Puigvert's On-line Biobank node belonging to the National Biobanks Platform. She is also the person responsible for organising an European Molecular Quality Network (EMQN) outline for quality control of the genetic diagnoses of ADPKD by European laboratories. Currently she is leading a research project for applying this outline to kidney and urinary tract congenital abnormalities.
- ▶ Jointly with Dra. Díaz, Dr. Ballarín leads a series of clinical trials, both national and international, on glomerular and systemic diseases affecting the kidneys. They also participate in registries at a Catalan, Spanish and European level.
- ▶ Dra. Díaz leads the studies on renal inflammation and fibrosis. Renal grafts from cadaveric donors are an apt model for her study due to their less-good prognosis and to a high probability of inflammation and ensuing fibrosis as compared to living donor grafts. Dra. Díaz and Dra. Guillén have identified the activation of purinoma elements, both in cell cultures and in grafts from cadaver donors. This activation participates in inflammation and fibrosis, triggered by the phenotype change of macrophages into anti-inflammatory and pro-fibrotic, and interacting with other pro-fibrotic classical pathways. This new role of the purinergic pathways could be the key for the detection of new markers and new therapeutic targets associated with renal graft dysfunction after transplant.
- ▶ Dra. Fernández-Llama is participating in the development of a prototype of a multiplex system for flow cytometry focused on a new multi-parametric etio-pathogenic diagnosis of acute renal damage. As an expert in hypertension, she participates in a collaborative trial for evaluating 24-hour central blood pressure, its circadian rhythms and its relationship with organic damage.
- ▶ Dr. Bover is also a member of the EDTA work force board on bone metabolism, this being his primary research subject.
- ▶ Dr. Díaz leads the dialysis research line. Currently the two major research lines are concerned with the appropriateness of peritoneal dialysis, and the investigation for biomarkers of the acute renal failure.
- ▶ Dra. Coll, who belongs in the dialysis team, heads the research of genomic damage in patients on renal replacement therapy, either transplant or dialysis. She analyses the differences of oxidative stress in transplanted vs. dialysis patients. She also analyses the effect of different antioxidants on genomic damage of dialysis patients.
- ▶ The transplant team, led by Dr. Guirado, either participates or heads over 15 studies, amongst them clinical trials with drugs against kidney rejection or for treating associated viral infections. His active participation and his leadership in the investigation of biochemical, serologic and genomic biomarkers of both rejection and viral infections associated with renal transplant, are outstanding.
- ▶ Ms. Luz San Miguel and Ms. Judith Ballart are the coordinators of clinical studies and trials. Their work is essential and of the utmost importance for carrying out the high number of clinical trials performed by the group.

Challenges

- ▶ Maintain the level of national and international publication.
- ▶ Continue with both clinical and basic research in all the previously described areas.
- ▶ Participate in the elaboration of clinical nephrology guidelines.
- ▶ Continue with active collection of research samples from CKD and transplant patients.
- ▶ Maintain participation in national working groups and increase international cooperation.
- ▶ Engage in new pharmaceutical clinical studies, including clinical trials.

Collaborations

Collaborations with other IIB Sant Pau Groups**Active collaborations in basic and clinical research projects**

- ▶ Inflammatory Diseases Group: renal fibrosis.
- ▶ Anaesthesiology Group (in collaboration with the Catalan ANES-CARDIOCAT Group): risk of major adverse cardiovascular and cerebrovascular events in non-cardiac surgery associated with the preoperative estimated glomerular filtration rate.
- ▶ Paediatrics Group: nephrotic syndrome evolution, Ig A nephropathy and inherited kidney diseases.
- ▶ Andrology Group: infertility.
- ▶ Urology Group: genetic predisposition to prostate cancer and transplant.
- ▶ Gynecology: High risk pregnancies, prenatal diagnosis, preimplantation diagnosis.
- ▶ Multidisciplinary teams for inherited kidney diseases: collaboration with most specialities from Sant Pau Hospital for different inherited kidney diseases (data bases, articles, protocols...)

Platforms

- ▶ Biobank platform.

External Collaborations**National academic collaborations**

- ▶ Department of Biochemistry and Molecular Biology, Universitat de Barcelona, Institute of Biomedicine and Oncology Programme, National Biomedical Research Institute of Liver and Gastrointestinal Diseases (CIBER EHD): renal fibrosis.
- ▶ Laboratory of Proteomics CSIC/Universitat Autònoma de Barcelona: diabetic nephropathy.
- ▶ Mutagenesis Department of Universitat Autònoma de Barcelona: renal impairment in chronic kidney disease.
- ▶ Genomic Regulation Center (CRG): inherited kidney diseases.
- ▶ Universidad de Salamanca: acute kidney injury.
- ▶ Universitat de Lleida: chronic kidney disease.

- ▶ National Scientific Societies (such as Sociedad Española de Nefrología) and investigators of other centres: basic and clinical studies (including public grants, clinical trials, observational studies...) promoted by them.

International academic collaborations

- ▶ Biochemistry and Microbiology Institute UACH (Chile): renal fibrosis and diabetic nephropathy.
- ▶ Mayo Clinic (Rochester, USA): Autosomal Dominant Polycystic Kidney Disease (ADPKD).
- ▶ Hospital Tenon (Paris, France): Nephrotic syndrome.
- ▶ EURenOmics Platform: membranous nephropathy and nephrotic syndrome.
- ▶ Toronto General Hospital (Canada): molecular genetics of idiopathic nephrotic syndrome.
- ▶ University of Melbourne (Australia): Alport syndrome.
- ▶ University Medicine Goettingen (Germany): Alport syndrome.
- ▶ EDTA (multinational, Europe): inherited kidney diseases and chronic kidney disease-mineral and bone disorders.
- ▶ Addenbrooke's Hospital, Cambridge University Hospitals NHS (United Kingdom): vasculitis.
- ▶ EUVAS Group (multinational collaborative Group): vasculitis.

Private national and international collaborations

- ▶ Participation in clinical studies including clinical trials and post-authorisation studies promoted by national and international pharmaceutical companies.
- ▶ Research Joint-Venture with VU Medisch Centrum (Amsterdam, The Netherlands); Medizinische Klinik I (Aachen, Germany) and San Paolo Hospital (Milan, Italy) sponsored by Abbvie Co on effects of vitamina D derivatives in CKD-MBD.

Other collaborations

- ▶ tient organisations: inherited diseases (AIRG), lupus (ACLECA) and chronic kidney disease (ALCER).

Nephrology

Active Grants

- ▶ Roser Torra Balcells. Nefropatías familiares no filiadas: genes implicados en su causa y su variabilidad fenotípica.. PI15/01824. Instituto de Salud Carlos III. Duration: 2016-2018. 115,500.00 €.
- ▶ Elisabeth Ars Criach. Estudio genómico de nefropatías de inicio temprano.. PI16/01998. Instituto de Salud Carlos III. Duration: 2017-2019. 107,500.00 €.
- ▶ Elisabeth Ars Criach. Enfermedades renales hereditarias quísticas y glomerulares: secuenciación masiva de un panel de genes para mejorar su diagnóstico y del exoma para identificar nuevos genes.. PI13/01731. Instituto de Salud Carlos III. Duration: 2014-2017. 68,000.00 €.
- ▶ Lluís Guirado Perich. Estudi multicèntric, aleatoritzat per avaluar l'eficàcia de la individualització del risc immunològic basat en biomarcadors selectius (disparitat d'eplets HLA i ELISPOT IFN- γ), per optimitzar el tractament immunosupressor en pacients trasplantats renals de donant viu (BIOIMMUN). Generalitat de Catalunya PERIS 2016. SLT002/16/00089. Duration: 2017-2019. 30,589.14 €.
- ▶ José Ballarín Castán. Red de Investigación Renal. ISCIII. RD16/0009/0019. Duration: 2017-2020. 121,379.50 €.
- ▶ José Ballarín Castán. Grup d'Investigació en Nefrologia. AGAUR. 2017 SGR 676. Duration: 2017-2019.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Montserrat Mercedes Díaz Encarnación. Impacto de las vías purinérgicas sobre la activación de macrófagos en el donante cadáver: pieza clave en el desarrollo de fibrosis y disfunción en el trasplante renal. PI17/01566. Instituto de Salud Carlos III. Duration: 2018-2020. 44,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Carme Facundo. Avaluació del filtrat glomerular en el donant viu renal. Universitat Autònoma de Barcelona. Director: Lluís Guirado. Date of defense: 30/10/2017.
- ▶ Nadia Ayasreh. Nefropatía tubulointerstitial autosómica dominante. Universitat Autònoma de Barcelona. Director: R. Torra and E. Ars. Date of defense: 02/06/2017.
- ▶ Cristina Canal. Supervivència d'empelt i pacient a llarg termini en el trasplantament renal a Catalunya. Universitat Autònoma de Barcelona. Director: Lluís Guirado. Date of defense: 13/12/2017.
- ▶ Helena Marco Rusiñol, El Rituximab como tratamiento en las enfermedades autoinmunes. Universitat Autònoma de Barcelona. Directors: J. Ballarín, D.Jayne, M. Díaz-Encarnación. Date of defense: 14/07/2017.

Awards

- ▶ Dra R Torra. Recognition of research, clinical outreach and the spread of rare diseases and / or orphan drugs. Best clinical career. Madrid, 27th November. Award from the Asociación Española de Laboratorios de medicamentos huérfanos y ultrahuérfanos (AELMHU).

Transfer Products

- ▶ "Talking about Dominant Kidney Poliquistosis. Patient and familiars information session". Direction: Dr J.Ballarín and ALCER Patient Association. Barcelona, 17th October.
- ▶ "Living with kidney disease (VI edition meeting for patients)". Direction: Dr J.Ballarín. Barcelona, 16th November.

Other Publications

- ▶ Vincenti F., Fervenza FC, Campbell KN., Díaz M., Gesualdo L., Nelson P, Praga M., Radhakrishnan J., Sellin L., Singh A., Thornley-Brown D., Veronese FV., Accomando B., Engstrand S., Ledbetter S., Lin J., Neylan J., Tumlin J. A phase 2, double blind, placebo controlled, randomized study of fresolimumab in patients with steroid-resistant primary focal segmental glomerulosclerosis. (2017) *Kidney Int Rep* 2 5 800-810.

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Ars E., Torra R. Rare diseases, rare presentations: recognizing atypical inherited kidney disease phenotypes in the age of genomics. (2017) *clin kidney J* 10 5 632-638.

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Nephrology

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Women and Perinatal Health Research Group



Coordinator

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Members

Porta Roda, Josep Oriol FGS
 Sánchez García, Olga IR

Main Lines of Research

- ▶ Prediction and prevention of complications arising from placental insufficiency, intrauterine growth restriction / preeclampsia (IUGR / PE)
- ▶ Placental insufficiency and maternal cardiovascular risk later in life.
- ▶ Role of the oxygen transport deficit in the placental insufficiency.
- ▶ Development of predictive methods based on the integration of pre and post-natal factors for the detection of abnormal neurodevelopment in congenital hearts diseases.

Challenges

- ▶ To study novel placental biomarkers in the diagnosis and prognosis of preeclampsia (PE) and intrauterine growth restriction (IUGR) in order to generate future hypothesis for target prevention and therapeutic interventions in these pathologies.
- ▶ To determine the usefulness of novel placental biomarkers (sFlt-1/PIGF ratio) in the diagnosis and prognosis of preeclampsia (PE) in order to change policies and improve maternal and neonatal health.
- ▶ To study novel maternal cardiovascular risk biomarkers after placental insufficiency and to explore potential preventive strategies in order to identify mother at risk for cardiovascular disease later in life.
- ▶ To study the role of placental insufficiency and hypoxia in congenital heart disease in order to gain insights into the relationships between hypoxia-dependent placental morphogenesis, placental function and effects on oxygen metabolism in the fetus.
- ▶ To develop biomarkers in fetal and neonatal life that help to predict postnatal neurological risk in congenital heart diseases.

Active Grants

- ▶ Elisa Llorba Olivé. Incorporación del ratio sFlt1/PIGF en el diagnóstico y clasificación de preeclampsia: Ensayo clínico randomizado (EuroPE estudio). PI16/00375. Instituto de Salud Carlos III. Duration: 2017-2019. 92,500.00 €.
- ▶ Elisa Llorba Olivé. Women and Perinatal Health Research Group.. 2017 SGR 1267. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 10,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Elisa Llorba Olivé. Red de salud materno-infantil y del desarrollo. RD16/0022/0015. Instituto de Salud Carlos III. Duration: 2017-2021. 71,412.00 €.
- ▶ Josep Oriol Porta Roda. Estudio de las propiedades biológicas de una matriz dérmica de origen humano para su aplicación en cirugía de corrección del prolapso de órganos pélvicos e incontinencia urinaria femenina. CONVENI BST 2017-3. Banc de Sang i Teixits. Duration: 2017-2020. 136,904.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Míriam Bella Bustamante. Heparina de Bajo Peso Molecular (HBPM) para la prevención de complicaciones derivadas de la insuficiencia placentaria en las pacientes de riesgo sin trombofilia. Universitat Autònoma de Barcelona. Director: Elisa Llorba Olivé. Date of defense: 20/07/2017.
- ▶ Aina Ruíz Romero. Impacto de las cardiopatías congénitas en el sistema nervioso central. Universitat Autònoma de Barcelona. Director: Elisa Llorba Olivé. Date of defense: 18/09/2017.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Genetic Research (Dr. Jordi Surrallés)
- ▶ Oncogenesis and Antitumour Drugs (Dra. Virtudes Céspedes)
- ▶ Reproductive Health (Dr. Joaquim Calaf)
- ▶ Anesthesiology (Dra. M Victoria Moral)
- ▶ General and Digestive Surgery (Dr. Antonio Moral)
- ▶ Endocrinology, Diabetes and Nutrition (Dra. Rosa Corcoy)
- ▶ Paediatrics (Dr. Eduard Carreras)
- ▶ Clinical Epidemiology and Healthcare Services (DR. Xavier Bonfill)
- ▶ Clinical Biochemistry Service (Dr. Francisco Blanco)
- ▶ Image Diagnostic Service, Neuroradiology Section (Dra. Beatriz Gómez-Anson)

External Collaborations

International collaborations

- ▶ Project: Role of Placental Insufficiency and Hypoxia in Congenital Heart Defects. Principal investigator: Steven A. Fisher, M.D.; Professor of Medicine and Physiology S-012a HSF II, 20 Penn St. Univ of Maryland School of Medicine (Baltimore MD 212) Hypothesis: There is an inter-relationship between mother and fetus in the genesis of CHD. Main objective: To develop new models to address these questions using genetically engineered mice is highly innovative and certainly will lead to new insights into the relationships between hypoxia-dependent placental morphogenesis, placental function and effects on oxygen metabolism in the fetus. Collaborator: Elisa Llorba.
- ▶ Project: Accuracy of clinical characteristics, biochemical and ultrasound markers in the prediction of preeclampsia: an Individual Patient Data (IPD) Meta-analysis. Principal Investigator: Shakila Thangaratinam, PhD; Professor in maternal and perinatal health at Queen Mary University of London, of Mile End Road, London, E1 4NS with administrative offices at QM Innovation Centre, 5 Walden Street, Whitechapel, (London E1 2EF) (the 'Recipient'). Main Objective: To develop, externally validate and update separate prediction models for (i) early (<34 weeks' gestation), (ii) late (≥ 34 weeks) and (iii) any onset preeclampsia and to estimate the prognostic value of individual clinical, biochemical and ultra-

sound markers for predicting preeclampsia by IPD meta-analysis. Collaborator: Elisa Llorba.

National collaborations

- ▶ Maternal and Infant Health and Development Network (SAMID Network).
- ▶ RD16/0022/0015. Principal investigator: Elisa Llorba. Objective: The main objective is to study the different pathological processes, nutritional and environmental conditions of perinatal and postnatal period, by addressing the study of factors of prematurity, prevention and patient safety, environmental and pathogenetic factors, nutrition and child development as well as promoting research into new products and therapeutic procedures. It is also their aim to study the long-term consequences and its relationship with certain disorders of high prevalence in later stages of life, such as neuropsychiatric diseases, obesity and its complications. Collaborator: Olga Sánchez.
- ▶ Project: Breast cancer during pregnancy. Neurologic and cardiologic outcomes after chemotherapy exposition during fetal period. Principal Investigator: Dr. Octavi Córdoba (Hospital Universitari Vall d'Hebron, Barcelona). Hypothesis: The incidence of breast cancer during pregnancy is increasing worldwide. Optimal chemotherapy may be given during pregnancy. However a high level of pregnancy complications is still observed and a high percentage of preterm deliveries is observed because those complications. Main objective: To gain insight into the effect on placental function and fetal development of fetal period exposition to chemotherapy, especially on the impact on neurological development and cardiac function. Collaborator: Olga Sánchez.
- ▶ Project: Angiogenic factors during pregnancy and cardiovascular risk in the medium to long term in patients with preeclampsia. Clinical and experimental approach. Principal Investigator: Dr. Lluís Cabero Roura (Hospital Universitario de la Vall d'Hebron, Barcelona). Hypothesis: There is a relationship between anti-angiogenic factors and the incidence of cardiovascular injury to medium-long term in patients with preeclampsia (PE) or intrauterine growth restriction (IUGR). Main objective: The aim is to establish measures that might be appropriate to reduce cardiovascular risk in patients with a history of PE / IUGR during pregnancy. The project consists of two studies, one in humans, and the other in sFlt-1-induced preeclampsia rat model. Collaborators: Olga Sánchez.
- ▶ The Banc de Sang i Teixits (Blood and Tissue Bank) is a public agency of the Catalan Department of Health whose mission is to guarantee the supply and proper use of human blood and tissue in Catalonia. Collaborator: Elisa Llorba.

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Scientific Production

Alijotas-Reig J, Esteve-Valverde E, Ferrer-Oliveras R, Llorba E, Ruffatti A, Tincani A, Lefkou E, Bertero M.a.T, Espinosa G, de Carolis S, Rovere-Querini P, Lundelin K, Picardo E, Mekinian A, Comparative study

between obstetric antiphospholipid syndrome and obstetric morbidity related with antiphospholipid antibodies (2017) MED CLIN-BARCELONA.
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Other Publications

- ▶ I Herraiz, E Llorba, S Verlohren, A. Galindo, en nombre del Grupo español para el estudio de los marcadores angiogénicos en la preclampsia, revista PROGRESOS. Actualización del diagnóstico y el pronóstico de la preclampsia con la ayuda del cociente sFlt-1/PlGF en embarazos únicos.

*Total Impact Factor **Mean Impact Factor

AREA T1

Epidemiology, Public Health and Healthcare Services

192 Clinical Epidemiology and Healthcare Services

198 Evaluation of Public Health Policies and Programmes

202 Transport and Health: Injuries and Mobility

204 Transmissible Diseases

210 Health Inequalities

214 Epidemiology of Addictions

218 Primary Care Research

Public Health and

S



Results

117 cases of acute flaccid paralysis were identified. Of these, 2180 did not have two adjacent and symmetrical limb weakness. The prevalence of acute flaccid paralysis was 1.7 per 100,000 children aged 0-23 months. The number of cases of acute flaccid paralysis was significantly higher in children aged 0-23 months compared with children aged 24-59 months. The number of cases of acute flaccid paralysis was significantly higher in children aged 0-23 months compared with children aged 24-59 months. The number of cases of acute flaccid paralysis was significantly higher in children aged 0-23 months compared with children aged 24-59 months.



Figure 1. The effect of vaccination coverage on population immunity (0-23 months) and the effect of vaccination coverage on population immunity (24-59 months).

Clinical Epidemiology and Healthcare Services



Coordinator

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Roqué Fíguls, Marta Cristina	IR
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Main Lines of Research

- ▶ Evidence-based medicine: systematic reviews, clinical practice guidelines and clinical trials.
- ▶ Health service evaluations.
- ▶ Methodological research.

Areas of interest

- ▶ Evidence-based medicine.
- ▶ Cancer.
- ▶ Perioperative medicine.
- ▶ Cardiovascular medicine.
- ▶ Public health.
- ▶ Appropriateness.

Challenges

- ▶ To develop and promote systematic-review production about the effects of healthcare interventions, in order to contribute to healthcare and clinical decision-making based on the best available scientific evidence.
- ▶ To promote national and international clinical and applied research projects that will contribute with new knowledge to solve clinical or healthcare problems that are relevant to the needs of the system (applied clinical studies, healthcare services assessment studies, clinical trials).
- ▶ To foster, organise and/or conduct training activities in order to promote healthcare professionals' acquisition of skills and knowledge on evidence-based Medicine (EBM) tools.
- ▶ To promote methodological research projects aiming to provide guidance and tools to improve scientific information analysis, interpretation and communication.
- ▶ To develop knowledge transfer activities (clinical practice guidelines) and scientific-knowledge dissemination tools.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Addictive Behaviours
- ▶ Anaesthesiology
- ▶ Angiology, Vascular Biology and Inflammation
- ▶ Blood and Tissue Bank
- ▶ Central Clinical Research and Clinical Trials Unit
- ▶ Clinical and Translational Cardiology
- ▶ Evaluation of Public Health Policies and Programmes - Public Health Agency of Barcelona
- ▶ Locomotor System Research
- ▶ Palliative Care
- ▶ Plastic Surgery
- ▶ Primary Care Research - EAP Sardenya
- ▶ Thrombosis and Haemostasis
- ▶ Urology

External Collaborations

- ▶ Population Health Research Institute, Mc-Master University (Canada).
- ▶ Clinical Trial Service Unit and Epidemiological Studies Unit, University of Oxford (United Kingdom).
- ▶ European Respiratory Society.
- ▶ Facultad de Ciencias de la Salud, Universidad Tecnológica Equinoccial (Ecuador).
- ▶ GRADE Working Group.
- ▶ Guidelines International Network.
- ▶ Cochrane Collaboration.
- ▶ Joint Research Centre - European Commission.
- ▶ Applied Health Research Center - Saint Michael's Hospital (Canada).
- ▶ Cochrane Collaboration.
- ▶ Joint Research Centre - European Commission.
- ▶ Applied Health Research Center - Saint Michael's Hospital (Canada).

Active Grants

- ▶ Xavier Bonfill Cosp. Análisis y mejora del grado de adecuación de la cirugía programada del aneurisma de aorta abdominal. PI12/02530. Instituto de Salud Carlos III. Duration: 2013-2017. 48,500.00 €.
- ▶ Pablo Ignacio Alonso Coello. La toma de decisiones compartida en cáncer de pulmón. PROYECTOS SINGULARES 2013. Associació Espanyola Contra el Càncer. Duration: 2014-2018. 54,000.00 €.
- ▶ Xavier Bonfill Cosp. Grup de Recerca Clínica i Sanitària Aplicada. 2014 SGR 673. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 21,000.00 €.
- ▶ Pablo Ignacio Alonso Coello. Contratos Miguel Servet II 2015. MS115/00034. Instituto de Salud Carlos III. Duration: 2016-2019. 101,250.00 €.
- ▶ Xavier Bonfill Cosp. Estudio de adecuación de la terapia hormonal intermitente en pacientes con cáncer de próstata. PI15/00886. Instituto de Salud Carlos III. Duration: 2016-2018. 81,500.00 €.
- ▶ Laura Martínez García. Elaboración de una herramienta de priorización para la actualización de preguntas clínicas y aplicación a las guías de práctica clínica del Sistema Nacional de Salud. PI15/00325. Instituto de Salud Carlos III. Duration: 2016-2018. 50,000.00 €.
- ▶ María José Martínez Zapata. Contratos Miguel Servet I 2015. MS15/00116. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500.00 €.
- ▶ María José Martínez Zapata. International, multi-centre, randomized controlled trial to assess transfusion thresholds in patients undergoing cardiac surgery (TRICS III). CP15/00116. Instituto de Salud Carlos III. Duration: 2016-2018. 114,350.00 €.
- ▶ Pablo Ignacio Alonso Coello. Perioperative myocardial ischemia: implementation of troponin monitoring, economic analysis and further insights in pathophysiology. MARATO 20150110. Fundació La Marató de TV3. Duration: 2016-2019. 159,202.88 €.
- ▶ Laura Martínez García. Contratos Juan Rodés 2015. JR15/00004. Instituto de Salud Carlos III. Duration: 2016-2018. 135,000.00 €.
- ▶ Ekaterine Popova. Mecanismos implicados en la lesión miocárdica perioperatoria: estudio mediante angiografía coronaria computarizada y resonancia magnética cardíaca. PI16/01162. Instituto de Salud Carlos III. Duration: 2017-2019. 74,500.00 €.
- ▶ María José Martínez Zapata. Ensayo clínico aleatorizado multicéntrico paralelo en pacientes antiagregados con fractura peritrocantérea de fémur que evalúa una estrategia para acortar el tiempo hasta la cirugía. PI16/01879. Instituto de Salud Carlos III. Duration: 2017-2019. 71,500.00 €.
- ▶ Montserrat Rabassa Bonet. Contractes postdoctorals "Sara Borrell" 2016. CD16/00157. Instituto de Salud Carlos III. Duration: 2017-2019. 80,598.00 €.
- ▶ Pablo Ignacio Alonso Coello. Isquemia miocárdica perioperatoria: aplicación de monitorización de troponina, análisis económico y más conocimientos sobre fisiopatología. IR16-P1. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 7,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Pablo Ignacio Alonso Coello. COMPAR-EU - Comparing effectiveness of self-management interventions in 4 high priority chronic diseases in Europe. 754936-IR. European Union. Duration: 2018-2022. 456,109.00 €.
- ▶ Gerard Urrutia Cuchi. The effect of additional core stability exercises on improving dynamic sitting balance, trunk control and functional rehabilitation for subacute stroke patients: A randomized controlled trial. MARATO 20173710, Fundació La Marató de TV3. Duration: 2018-2021. 159,530.00 €.
- ▶ Ena Pery Niño de Guzman Guispe. Contractes de formació en recerca "Río Hortega" 2017. CM17/00199. Instituto de Salud Carlos III. Duration: 2018-2019. 53,732.00 €.
- ▶ Pablo Ignacio Alonso Coello. La toma de decisiones compartida de la terapia trombotrófica durante el embarazo: el valor añadido del método de Análisis de Decisión. PI17/01874. Instituto de Salud Carlos III. Duration: 2018-2020. 52,000.00 €.
- ▶ Pablo Ignacio Alonso Coello. COMPAR-EU - Comparing effectiveness of self-management interventions in 4 high priority chronic diseases in Europe. 754936-FGS. European Union. Duration: 2018-2022. 180,120.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Héctor Alexander Pardo Hernández. Estrategias para prevenir y controlar el sesgo de diseminación de los ensayos clínicos con distribución aleatoria. Universitat Autònoma de Barcelona. Directors: Xavier Bonfill Cosp, Gerard Urrutia Cuchi. Date of defense: 20/12/2017.
- ▶ Margarita Posso Rivera. Cribado poblacional del cáncer de mama: aspectos relacionados con la efectividad y coste-efectividad, Universitat Autònoma de Barcelona. Directors: Xavier Bonfill Cosp, M. Teresa Puig Reixach. Date of defense: 18/12/2017.
- ▶ Lluís Campins Bernadas. Evaluación del impacto clínico y económico de una intervención farmacéutica orientada a disminuir la medicación inadecuada en personas mayores de 70 años polimedradas. Universitat Autònoma de Barcelona. Directors: Ignasi Bolívar Ribas, Mateu Serra Prat. Date of defense: 28/09/2017.
- ▶ Laura Coll Planas. Solitud, suport social i participació de les persones grans des d'una perspectiva de la salut., Universitat Autònoma de Barcelona. Directors: M. Teresa Puig Reixach, Fredrica Nyqvist. Date of defense: 30/05/2017.
- ▶ Xavier Rojano Luque. Prevalença de la fragilitat i la sarcopènia a l'atenció primària. Relació amb l'estat cognitiu del pacient. Universitat Autònoma de Barcelona. Directors: Rosa Monteserín Nadal, Ignasi Bolívar Ribas (tutor). Date of defense: 15/06/2017.
- ▶ Marcos Jordán Sales. Prevención del sangrado postoperatorio en las fracturas subcapitales de fémur tratadas mediante sustitución protésica: eficacia y seguridad del ácido tranexámico y la cola de fibrina, Universitat Autònoma de Barcelona. Directors: M. José Martínez Zapata, Enrique Caceres Palou, Fernando Celaya Ibañez. Date of defense: 25/10/2017.

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IF: 4.245

Evaluation of Public Health Policies and Programmes



Coordinator

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Puigpinós Riera, Rosa ASPB
Sánchez Martínez, Francesca ASPB
Serral Cano, Gemma ASPB
Villalbí Hereter, Joan Ramon ASPB

Main Lines of Research

Evaluation of Public Health Policies and Programmes

- ▶ Monitoring of behaviours and other health risk factors such as environmental exposure.
- ▶ Process and impact evaluation of public health programmes and services (school-

based prevention programmes for obesity, smoking, alcohol and cannabis consumption, breast cancer screening programmes and memory training workshops for elderly people).

- ▶ Evaluation of ICT innovation in public health.
- ▶ Evaluation of food contaminants.

Challenges

- ▶ Promote research into the evaluation of policies and programmes.
- ▶ Support the debate on conceptual and methodological aspects of results evaluation in prevention and health promotion.
- ▶ Consolidate the group's research, fostering less developed aspects such as financial assessment and evaluation of health protection interventions.

▶ Develop a theoretical corpus of concepts, principles, methods and examples that contribute to filling the gap in undergrad postgraduate teaching regarding the design and evaluation of risk prevention and health promotion interventions.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Clinical Epidemiology and Healthcare Services (PI: Xavier Bonfill).
- ▶ Transport and Health: Injuries and Mobility (PI: Catherine Pérez).
- ▶ Health Inequalities (PI: Carme Borrell).
- ▶ Epidemiology of Addictions (PI: M. Teresa Brugal).

▶ Foreign universities: Johns Hopkins University, USA.

▶ Spanish universities: Universitat Pompeu Fabra, Universitat Ramon Llull, Universitat de Vic, Universitat Internacional de Catalunya, Universitat Oberta de Catalunya, Universidad de Santiago de Compostela.

▶ Primary care centres: Ciutat Meridiana, Roquetes, Sant Rafael and Sardanya (Barcelona).

▶ Catalan Institute of Oncology (ICO).

External Collaborations

- ▶ CIBER-Epidemiology and Public Health (Group 18: Evaluation of public health policies and programmes).
- ▶ CIBER-Obesity and Nutrition (Group PI: Fernando Fernández de Aranda)
- ▶ AGAUR Consolidated Research Group (Evaluation of public health policies and programmes).
- ▶ Tobacco Working Group of the Spanish Epidemiology Society.
- ▶ Social Determinants Group of the Spanish Epidemiology Society.

▶ Municipal bodies: Barcelona Sports Institute (IBE), Barcelona Municipal Institute of Education (IME).

▶ Regional bodies: Public Health Agency of Catalunya (Promoting Health through Physical Activity and Healthy Eating Plan) and Catalan Health Information and Quality Agency (AQUAS).

▶ Other bodies: Catalan Recreation Foundation (FCE).

▶ Companies: Fontvella and Danone (Health Affairs Departments).

Active Grants

- ▶ Rosa Puigpinós Riera. Influencia de determinantes sociales, estilos de vida, bienestar emocional y uso de terapias no convencionales en la evolución del cáncer de mama en una cohorte de mujeres diagnosticadas. PI13/01977. Instituto de Salud Carlos III. Duration: 2014-2018. 64,470.00 €.
- ▶ Carles Ariza Cardenal. Diseño y evaluación de la efectividad de una intervención de prevención selectiva del consumo de alcohol y cannabis en jóvenes vulnerables en el ámbito comunitario. 20151070. Ministeri de Sanitat, Serveis Socials i Igualtat. Duration: 2016-2018. 61,773.00 €.
- ▶ Carles Ariza Cardenal. Evaluación de un proyecto de prevención integral de la obesidad infantil en la etapa pre-escolar en Barcelona (proyecto POIBA-2ª fase). PI16/00701. Instituto de Salud Carlos III. Duration: 2017-2019. 66,500.00 €.
- ▶ María José López. Exposición al humo ambiental de tabaco en menores de 12 años: estimación de la prevalencia y medición de marcadores en hogares y vehículos (PI13/02734). Duration: 2014-2017. 93,000 €.
- ▶ María José López. Tackling secondhand tobacco smoke and e-cigarette emissions: exposure assessment, novel interventions, impact on lung diseases and economic burden in diverse European populations (project ID: 681040). European Commission (H2020). Duration/2015-2019. 343,152.78 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ María José López Medina, Exposición al humo ambiental y residual del tabaco en niños y niñas: cohorte HUMO. PI17/01359. Instituto de Salud Carlos III. Duration: 2018-2020. 73,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Books or chapters with ISBN

- ▶ Ariza C. La salut conculcada. Editorial Claret. 2017. ISBN: 9788491360049.
- ▶ Ariza C, Sánchez-Martínez F, Pérez A. School-Based Cannabis Prevention Programs. In: Handbook of Cannabis and Related Pathologies. Elsevier. 2017. ISBN: 9780128007563.

Awards

- ▶ Francesc Freixa Prize at the SOCIDROGALCOHOL Symposium held in Oviedo, for the poster on visibility of alcohol in the urban environment of Barcelona. Villalbí, J.R.; Espelt, A.; Sureda, X.; Bosque Prous, M.; Teixidó Compañó, E.; Puigcorbó, S.; Franco, M.; Brugal, M.T. "Disponibilidad, promoción y visibilidad del consumo de alcohol en el entorno urbano. Un estudio en barrios de Barcelona"

Theses

- ▶ Gemma Serral. Desigualdades en el control mamográfico: el papel de los programas de cribado. Universitat Pompeu Fabra. Director: Rosa Puigpinós. Date of defense: 09/02/2017.

Other Publications

- ▶ Serral G, Puigpinós-Riera R. Desigualdades en la realización de mamografías y citologías cervicales en las mujeres españolas según las encuestas nacionales de salud. Revista de Senología y Patología Mamaria. 2017 30: 110-8.
- ▶ Puigpinós-Riera R, Contente X, Serral G, Bargalló X, Doménech M, Espinosa-Bravo M, Grau J, Macià F, Manzanera R, Pla M, Quintana MJ, Sala M, Vidal E. Influence of Social Determinants, Lifestyle, Emotional Well-Being and the Use of Unconventional Therapies in Breast Cancer Progression in a Cohort of Women in Barcelona: Protocol for the DAMA Cohort. JMIR Research Protocols. 2017 Dec 18; 6(12): e249.

Evaluation of Public Health Policies and Programmes

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Scientific Production

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Villalbi J.R., Borrell C., Macia M., Subirana T., Lopez M.J., Portana S., Llebaria X., Casas C., Adapting the service portfolio of a public health organisation to shrinking resources Adaptación de los servicios de una organización de salud pública a la disminución de los recursos (2017) GAC SANIT, 31 (3), 242-245.

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Transport and Health: Injuries and Mobility



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Members

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Main Lines of Research

- ▶ Public health injury surveillance.
- ▶ Evaluation of road safety strategies at the urban level.
- ▶ Evaluation of road safety strategies in Spain.
- ▶ Indicators of mobility exposure and risk of traffic injuries.
- ▶ Determinants of walking as a mode of transport.
- ▶ Health impact assessment of active transport (walking and cycling).
- ▶ Record linkage of health and police registers to study road traffic injury determinants.
- ▶ Inter-sector policies in transport: impact on sustainable environment, health and equity.

Challenges

- ▶ Study of the nature of injuries and their severity according to the characteristics of the collision and the vehicles involved, particularly in urban settings.
- ▶ Evaluate road safety policies and interventions.
- ▶ Calculation of risk indicators using mobility exposure.
- ▶ Health impact of urban, air pollution interventions.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Health Inequalities (PI: Carme Borrell).

External Collaborations

- ▶ All members of the group are members of the Working Group for Health Impact Evaluation of Injuries in Spain (Sociedad Española de Epidemiología), which is led by the IP of the group (Catherine Pérez).
- ▶ All members of the group are members of the group of Social Inequalities of CIBERESP (Consorcio de Investigación Biomédica de Epidemiología y Salud Pública).
- ▶ The IP of the group is member of the European Committee of The Transport and Health Study Group (THSG) (UK).
- ▶ Joint action on monitoring injuries in Europe (JAMIE) (European Agency for Health and Consumers).
- ▶ Member of the Scientific Committee of the Institut Français des Sciences et Technologies des Transports, de l'Amenagement et de Réseaux (IFSTTAR). From 2016.
- ▶ Safer City Streets IRTAD Cities (Joint Transport Research Centre of the OECD and the International Transport Forum, JTRC).
- ▶ Marta Olabarria, Elena Santamariña. Collaboration with Carmen Miralles (UAB) in: Movilidad cotidiana activa y saludable en entornos urbanos de proximidad. Enfoques multimetodológicos: tracking living labs, encuestas de movilidad y estudios cualitativos. Ministerio de Economía y Competitividad. CSO2016-74904-R. Duration: 2017-2019 43,000 €.
- ▶ Marta Olabarria, Elena Santamariña. Collaboration with Carmen Miralles (UAB) in: Ciudad, calidad de vida y movilidad activa en la tercera edad. Un análisis multimetodológico a través de Tracking Living Labs. Recercaixa 2016. Duration: 2016-2018. 95,688.33 €.

Active Grants

- ▶ Catherine Pérez. Safety CaUsation, Benefits and Efficiency (SafetyCube). H2020 N. 633485. European Commission. Duration: 2015-2018. 120,000 €.
- ▶ Catherine Pérez, Carme Borrell. Participatory Urban Living for Sustainable Environments (PULSE). Horizon 2020 H2020 N. 727816. European Commission. Duration: 2016-2018. 309.625 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Katherine Pérez and Elena Santamariña-Rubio. Are Barcelona's Advanced Zones for Motorcycles Effective? High Abstract Award Winners. Practitioner Category. II International Conference on Transport and Health. Barcelona, July 2017.

*TIF: 12.835 **MIF: 1.8335

Scientific Production

Cryer C., Miller T.R., Lyons R.A., Macpherson A.K., Perez K., Petridou E.T., Dessypris N., Davie G.S., Gulliver P.J., Lauritsen J., Boufous S., Lawrence B., de Graaf B., Steiner C.A., Towards valid 'serious non-fatal injury' indicators for international comparisons based on probability of admission estimates (2017) INJURY PREV, 23 (1), 47-57.
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Llimona P, Perez G., Rodriguez-Sanz M., Novoa A.M., Espelt A., Garcia de Olalla P, Borrell C., Infobarris: an interactive tool to monitor and disseminate information on health and its determinants in the neighbourhoods of Barcelona (Spain) Infobarris: una herramienta interactiva para monitorizar y divulgar información sobre la salud y sus determinantes en los barrios de Barcelona (2017) GAC SANIT, 31 (5), 427-431.
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Mari-Dell'Olmo M., Novoa A.M., Camprubi L., Peralta A., Vasquez-Vera H., Bosch J., Amat J., Diaz F., Palencia L., Mehdipanah R., Rodriguez-Sanz M., Malmusi D., Borrell C., Housing Policies and Health Inequalities (2017) INT J HEALTH SERV, 47 (2), 207-232.
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Other Publications

- ▶ López-Ruiz M, Mancebo Fernández N, Pérez K, Serra Saurina L, G Benavides F. [Work-Related Fatal Traffic Injuries in Spain According to Travelling Reasons and Sex (2010-2013)]. REV ESP SALUD PUBLICA. 2017 Jan 23;91. pii: e201701013. Spanish. PubMed PMID: 28112714.
- ▶ Katherine Pérez, Anna Gómez-Gutiérrez. La qualitat de l'aire i la salut com a nous factors en la definició de polítiques de mobilitat. Revista Papers. N.59 – Nous reptes en la mobilitat quotidiana. Polítiques públiques per a un model més equitatiu i sostenible. pages 26-32. Institut d'Estudis Regionals i Metropolitans de Barcelona. Barcelona Novembre 2017. ISSN: 1888-3621.

Transmissible Diseases



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Main Lines of Research

Line 1: Tuberculosis prevention and treatment adherence

Investigate the impact of the incorporation of new technologies and circuits to favor the control of TB transmission, treatment adherence and TB contact tracing (Farma TITL project, Video DOT, etc.). To describe the incidence and epidemiological characteristics of multidrug resistant TB and TB in people infected with HIV in Europe (Study groups: TB-Net and EuroTB are carrying out observational epidemiological studies to get a more accurate view of this illness). Develop network information tools with different people in charge of the control of TB in other European cities, which allow developing strategies of assistance and control of the disease most suitable for large cities. We participate in the group "TB in Big Cities" promoted by the European CDC and with which we have made a document of consensus on control strategies in large cities. Describe socio-demographic, epidemiological and clinical characteristic of certain vulnerable groups that suffers from TB such as children, immigrants, homeless, etc.

Line 2: HIV and other STI surveillance and control

Evaluation of interventions based on reducing diagnostic delay of HIV and other sexual transmitted infections (STI): study of sexual contacts, especially vulnerable groups (men who have sex with men, immigrant population) and offers the HIV and STI tests. The aims are: 1. To offer the HIV test, and other STIs for men who have sex with men and other users of gays saunas, 2. To increase the vaccination coverage of hepatitis A and B in this group, 3. To improve the awareness of the users and workers of the saunas about the risk of exposing themselves to situations that favor the transmission and the need to take prevention measures and facilitate the access of preventive materials for HIV/STI/Hepatitis, 4. To involve entrepreneurs and employees of these centers in the implementation of this initiative. 5. To inform about access to other prevention services outside of saunas.

Line 3: Research in other notifiable diseases

It focuses on the study of the temporal evolution and transmission patterns of parotiditis, pertussis, other STI, epidemic outbreaks and other emerging diseases, both in Spanish and Foreign-born. The aims are: 1. To describe the epidemiological pattern of these diseases in the last 10 years with the objective of detecting possible changes during the period 2014-2018 and its relationship with the

economic crisis. We always try to strengthen the prevention and control measures in order to prevent the appearance of new cases. 2. To describe the temporal evolution of measles and parotiditis in relation to the systematic vaccination policies developed in Catalonia. 3. To investigate the transmission lines during the epidemic measles periods promoting the identification of strains due to molecular epidemiology. 4. To investigate the lines of transmission of pertussis during periods of epidemic in order to establish the discussion about different strategies for preventing the disease. 5. To investigate the sources of infection and the intrafamily secondary transmission rates of the pertussis, and establish the lines of transmission of pertussis within the family nucleus. 6. To know the epidemiological pattern of malaria in order to identify previously possible cases of autochthonous transmission of disease. 7. In hepatitis we are dealing with the European project, Hepscreen, which objective is to compare 2 strategies: passive (prevalence of infection is seen in immigrants who consult) and active (prevalences are studied from immigrants recruited by community health workers).

Line 4: Community health workers and notifiable disease control among foreign born patients

For more than fifteen years, we have a team of Community Health Workers (CHW) that acts as sociocultural mediators and translators. They are from six different regions worldwide and collaborate within the team of epidemiologists and public health nursing team. Based on a strategy of complementary profiles, they are responsible for carrying out accompaniment in the diagnosis and treatment of diseases such as TB, hepatitis or HIV in populations with language barriers or the risk of social exclusion (undocumented immigrants). With their cultural and idiomatic profile, can treat patients from Eastern Europe, Asian countries with high incidence of communicable diseases such as China and India, Latin American, Maghreb countries and of sub-Saharan Africa. The aims are: 1. To evaluate the impact of their intervention in prevention and control of communicable diseases (HIV, TB and STI) in immigrant, 2. To adapt and disseminate information for the prevention and the promotion of healthy habits 3. To increase knowledge of the risk factors among these groups, as well as adequate access to the Catalan health system. 4. To reinforce patient's social relations into the communities so that they can become a useful resource in the fight against HIV, other STI and TB.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Main Lines of Research</p>	<p>Line 5: Vaccine hesitancy</p> <p>To identify attitudes, beliefs, and knowledge about vaccines among the health care workers who are involved in the administration of systematic childhood vaccines in the public primary care setting in Barcelona, Spain. To describe and compare knowledge, attitudes, and beliefs regarding the vaccination calendar of pediatric primary care teams (doctors and nurses) and determine the factors associated with vaccine hesitancy in Barcelona in 2016-17.</p> <p>Line 6: Vector born transmitted diseases</p> <p>Arboviruses and other arthropod born disease such as malaria, are a group of diseases transmitted through arthropods. Many of them are capable of producing infection in humans. Some of the arboviruses such as West Nile Virus (WNV), Chikungunya (CHK), Dengue or Zika Virus (ZV) are emerging and have a high potential of generating epidemic outbreaks in European non-endemic countries. The threat of arbovirolosis emergence and re-emergence has created a risk scenario for global public health. ZV as CHK, dengue and</p>	<p>WNV are mandatory notification diseases in Spain. Furthermore, in Barcelona an active epidemiological surveillance system is carried out based on a close relationship with the doctors in charge of imported diseases and in the electronic notification system for notification diseases. It is precisely this concern that has led several countries to adopt new protocols and procedures that adapt to these new situations to respond to this public health problem. After the diagnostic of the first cases of imported arbovirolosis in the city, it was seen that they could pose a risk to public health since A.albopictus is endemic in our setting. That is the reason why a system of active epidemiological and entomological surveillance of notifiable diseases records (EDO) for each detected case, has been implemented and the Epidemiology and Entomological Surveillance Service, both from the Public Health Agency of Barcelona are working very close for minimizing the risk of having an autochthonous case. The aims are: 1. To explain the epidemiological and entomological surveillance that took place against the vector born transmitted diseases. 2. To identify the possible areas if improvement in the procedures in order to control ZV and other emerging arbovirolosis that could be transmitted by local competent vectors.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Challenges</p>	<ul style="list-style-type: none"> ▶ Prevent sexually transmitted infections and other transmissible diseases. ▶ Evaluate HIV screening programs in gay saunas. ▶ Improve detection and research into causes of C hepatitis. ▶ Improve detection and control measures of outbreaks. ▶ Improve adherence of tuberculosis and latent tuberculosis infection. 	<ul style="list-style-type: none"> ▶ STD/HIV and TB contract tracing. ▶ Cost effective analysis on public health interventions. ▶ Describe the threats and improve the procedures of vector born transmitted diseases.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Collaborations</p>	<p>External Collaborations</p> <ul style="list-style-type: none"> ▶ HEPSCREEN: Screening for hepatitis Project. http://hepscreen.eu/ ▶ CASCADE ▶ GEMES ▶ COHERE ▶ GESIDA: grupo de estudio del SIDA de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC). http://gesida-seimc.org/ 	<ul style="list-style-type: none"> ▶ PII-TB SEPAR: Programa integrado de investigación en Tuberculosis de la Sociedad Española de Patología Torácica. ▶ AGAUR: Agència de gestió d'ajuts Universitaris i de Recerca. http://agaur.gencat.cat/ca/inici ▶ TB-NET: Tuberculosis European Network. http://www.tb-net.org/ ▶ CIBERESP: CIBER of Epidemiology and Public Health. http://www.ciberesp.es/ ▶ UITB: Unitat d'Investigació en Tuberculosis de Barcelona.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Awards</p>	<ul style="list-style-type: none"> ▶ Sentís A, Martín M, Arando M, Armengol P, Barberà MJ, Martí G, Ocaña I, Gil S, García de Olalla P, and group of ITS of Barcelona. Infecciones de transmisión sexual en jóvenes entre 15 y 24 años, Barcelona, 2007-2015. VII Award of the Sociedad Española de Epidemiología (SEE) and Escuela Andaluza de Salud Pública to the best senior communication presented at the XXXV Reunión Científica de la SEE. Barcelona, 6-8 Sept 2017. ▶ Alarcón M, García de Olalla P, Fernández M. "Promoción de la prueba de VIH a hombres que tienen sexo con hombres a través de aplicaciones móviles". VI Award of the Sociedad Española de Epidemiología to the best dissertation in epidemiology and public health. Barcelona, 6-8 Sept 2017. 	

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Active Grants

- ▶ Patricia García de Olalla Rizo. Uso de las aplicaciones para telefonía móvil en la promoción de las pruebas del VIH y otras infecciones de transmisión sexual en hombres que tienen sexo con hombres. PI16/02025. Instituto de Salud Carlos III. Duration: 2017-2019. 46,500.00 €.
- ▶ Antonio Moreno Martínez. Asociación de diabetes y tuberculosis en un distrito con alta incidencia de tuberculosis. Estudio de casos y controles, 2007-2016. PI16/01751. Instituto de Salud Carlos III. Duration: 2017-2019. 46,500.00 €.
- ▶ Joan Arturo Caylà Buqueras. Cribado de las enfermedades transmisibles en población inmigrante de un barrio con bajo nivel socioeconómico: comparación de dos estrategias. PI12/02573. Instituto de Salud Carlos III. Duration: 2013-2017. 43,500.00 €.
- ▶ Joan A. Caylà. TBTC Estudio 36: Plataforma para la evaluación de resultados de tratamiento de tuberculosis: un estudio observacional de personas tratadas de tuberculosis pulmonar. CDC-EEUU. Duration: 2015-2017. 310,000 €.
- ▶ Fernando Alcaide. Estudio de las resistencias a los fármacos y los mecanismos moleculares más frecuentes en *Mycobacterium tuberculosis* en España (Estudio REMOTUBES). SEPAR. Duration: 2015-2018. 18,000 €.
- ▶ Sandra Manzanares. Smartphone application for aging HIV-infected men who have sex with men to prevent sexually transmitted infections. GILEAD. Duration: 2016-2017. 69,250 €.
- ▶ Vinicio Israel Molina. Recaídas en Tuberculosis: ¿reinfección exógena o reactivación endógena? SEPAR. Duration: 2016-2017. 12,000 €.
- ▶ Héctor Javier Sánchez. Evaluación de nano-partículas magnéticas eléctricamente activas (NP-MEAS) para detectar, capturar y concentrar células de *Mycobacterium tuberculosis* de muestras clínicas. SEPAR. 2016-2017. 9,000 €.
- ▶ Joan A Caylà. Factores asociados a los brotes de gastroenteritis aguda por norovirus en instituciones cerradas y semicerradas. FIS PI16/02005. Duration: 2016-2018. 116,765 €.
- ▶ Àngels Orcau. Incidencia de tuberculosis entre contactos infectados por *Mycobacterium tuberculosis* en una gran ciudad. SEPAR. Duration: 2017-2018. 18,000 €.
- ▶ Joan Pau Millet. Barcelona Tb Photovoices Project. Duration: 2016-2019.
- ▶ Tomás M. Pérez Porcuna. Estudio observacional de la infección tuberculosa en niños VFR (visiting Friends and relatives) que viajan a países con elevada incidencia de tuberculosis. FIS PI16/00314. Duration: 2017-2019. 50,215 €.
- ▶ Israel Molina. PICAT (Plataforma integral para el control de arbovirosis en Cataluña). Departament de Salut. Duration: 2017-2019. 599,934 €.
- ▶ Àngels Orcau. Estudio de mejora de la adherencia y seguimiento del tratamiento de la infección tuberculosa latente mediante un programa de dispensación y seguimiento en farmacias comunitarias. SEPAR. Duration: 2018-2019. 6,000 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Sandra Manzanares Laya, Prueba rápida de hepatitis C en hombres que tienen sexo con hombres: conocimientos, prevalencia e implicaciones para el cribado en VIH negativos. PI17/02077. Instituto de Salud Carlos III. Duration: 2018-2020. 32,200.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Transfer Products

- ▶ Technological transfer product. Innovation in Epidemiology and Public Health. Project financed by GILEAD: Smartphone application for aging HIV-infected men who have sex with men to prevent sexually transmitted infections. Creation of an App for smartphones whose objective is to promote sexual health and provide knowledge about ITS among men who have sex with other men (MSM) who live with HIV through the use of messages with or without geolocation. 13/01/2016.
- ▶ Technological transfer product. Innovation in Epidemiology and Public Health. Use of applications for mobile telephony in the promotion of HIV testing and other sexually transmitted infections in men who have sex with men. Use of profiles in Apps of contacts such as Grindr or Gay Romeo to launch messages offering HIV and other ITS tests for free and confidential. These messages are launched individually or in mass campaigns. A cohort has been created for this initiative to carry out tests of ITS and HIV. 10/01/2016.

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- ▶ Maurino J, Molina-Pinargote IV, Forcada N, González-Díaz Y, Montes M, Ruiz M, Montoro M, Maldonado J, Soteras J, Altet N, Millet JP. Tuberculosis multirresistente y diabetes mellitus: la confluencia de dos pandemias genera casos complicados. REV ENF EMERG 2017; 16(1): 36-39.
- ▶ González R, Montalvo T, Camprubí E, Fernández L, Millet JP, Peracho V, Gorrindo P, Avellanés I, Romero A, Caylà JA. Confirmed Dengue, Chikungunya and Zika Cases during the Period 2014 to 2016 in Barcelona, Spain. REV ESP SALUD PUBLICA. 2017 Mar 7;91. pii: e201701027.

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Transmissible Diseases

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Scientific Production

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Health Inequalities



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Main Lines of Research

Social class and geographical inequalities in health

- ▶ Study of health inequalities according to social class in Spain and worldwide.
- ▶ Exploitation of information at the census section level as the maximum disaggregation unit and at higher geographic aggregation levels such as the neighbourhood, town and region.

Gender Inequalities in Health

- ▶ Sexual division between productive and reproductive work (gender roles) and differences in male and female identities as the 2 main structural factors that generate gender inequalities in health.

Social and Political Determinants of Health and Their Impact on Policy Building and Interventions

- ▶ Evidence of the macroeconomic determinants of health inequalities between countries.
- ▶ The impact of the political context on the health of the population and the conclusion that countries with better developed welfare states have better levels of health.

Challenges

Health-Inequalities According to Different Inequality Axes

- ▶ Study of social determinants of health in terms of social class and gender, with the purpose of integrating these 2 axes and analysing inequalities among immigrants.
- ▶ Research into the impact of area of residence, especially smaller urbanized areas, on the health of the population.

Gender Inequalities in Health

- ▶ Further explore the theoretical framework and explanatory charts developed to guide comprehension of the gender determinants that affect health.

Social and Political Determinants of Health and Their Impact on Policy Building and Interventions

- ▶ Study the influence of policies on the health of populations and on social inequalities in health.

Sex and Reproductive Inequalities in Health

- ▶ Establish a line of research to investigate different aspects of sexual and reproductive health (sexuality, contraception, pregnancy, birth, miscarriage, abortion, birth rates, etc).

Awards

- ▶ Best Dissertation Award in Epidemiology and Public Health 2017 of the Sociedad Española de Epidemiología. Natalia López. Evolution of socioeconomic inequalities in mortality due to suicides in Barcelona during the period 2006-2016 (directed by Mercè Gotsens).

Transfer Products

- ▶ Pla d'acció sobre drogues 2017-2020 (Drug Action Plan 2017-2020). Available at: <http://www.aspb.cat/documents/pla-daccio-sobre-drogues-barcelona-2017-20/>
- ▶ Report "La salut a Barcelona 2016" (Health in Barcelona 2016). Available at: https://www.aspb.cat/wp-content/uploads/2017/11/Informe_Salut_2016.pdf
- ▶ Report "La salut i els seus determinants en l'alumnat adolescent de Barcelona. Enquesta de Factors de Risc en Estudiants de Secundària. FRESC 2016" (The health and

its determinants in the adolescent students of Barcelona. Survey of Risk Factors in Secondary Students. FRESC 2016). Available at: <http://www.aspb.cat/wp-content/uploads/2017/05/salut-i-els-seus-determinants-en-alumnat-adolescent-Barcelona-FRESC-2016.pdf>

Collaborations

External Collaborations

- ▶ Vlaamse Instelling Voor Technologisch Onderzoek N.V. (VITO), established in Boeretang 200, MOL 2400, Belgium.
- ▶ Meteotest Societe Cooperative (METEOTEST), established in FABRIKSTRASSE 14, BERN 3012, Switzerland.
- ▶ GISAT S.R.O. (GISAT), established in Milady Horakove 1523/57A, PRAHA 7 170 00, Czech Republic.
- ▶ Katholieke Universiteit Leuven (KU Leuven), established in Oude Markt 13, LEUVEN 3000, Belgium.
- ▶ Fundacion Privada Instituto de Salud Global Barcelona (ISGLOBAL) established in C Rosselló 132 planta 05, Barcelona 08036, Spain.
- ▶ Joanneum Research Forschungsgesellschaft MBH (JR), established in Leonhardstrasse 59, GRAZ 8010, Austria.
- ▶ T6 Ecosystems SRL (T6ECO), established in Via Genova 30, Roma 00184, Italy.
- ▶ ARCTIK SPRL (ARCTIK), established in Avenue Emile de Beco 12 bte 2/3, Bruxelles 1050, Belgium.
- ▶ STAD ANTWERPEN, established in GROTE MARKT 1, Antwerpen 2000, Belgium.
- ▶ Bikecityguide Apps GMBH (BikeCityGuide), established in Kinkgasse 7, GRAZ 8020, Austria.
- ▶ Soprintendenza Speciale Colosseo MNR e Area Archeologica Di Roma (SSColosseo), established in Piazza dei Cinquecento 67, Roma 00185, Italy.
- ▶ Ines Energieplanung GMBH (INES), established in Laupenstrasse 20, Bern 3008, Switzerland.
- ▶ IURS - Institut Pro Udrzitelny Rozvoj Sidel ZS (IURS), established in Bulharska 1424/25, Ostrava Poruba 708 00, Czech Republic.
- ▶ Universidade de Coimbra, 1290, established in Paco das Escolas, Coimbra 3001 451, Portugal.
- ▶ Department of Health (DH), -, established in Quarry House, Quarry Hill, Leeds LS2 7UE, United Kingdom.
- ▶ Universite Paris Ouest Nanterre La Defense (UPO), 199212044, established in 200 Avenue de la Republique, Nanterre CEDEX 92001, France.
- ▶ Instituto Superior Tecnico (IST), 931400, established in Avenida Rovisco Pais 1, Lisboa 1049-001, Portugal.
- ▶ Universiteit Maastricht, WHW Artikel 1.8 LID, established in Minderbroedersberg 4-6, Maastricht 6200 MD, Netherlands.
- ▶ University College London (UCL), RC000631, established in Gower Street, London WC1E 6BT, United Kingdom.
- ▶ Karolinska Institutet (KI), 2021002973, established in Nobels Vag 5, stockholm 17177, Sweden.
- ▶ Beuth-Hochschule Fuer Technik Berlin, established in Luxemburger Strasse 10, Berlin 13353, Germany.
- ▶ Univerzita Karlova V Praze (Univerzita Karlova v Praze), 00216208, established in Ovocny trh 5, Praha 1 11636, Czech Republic.
- ▶ Ethniko Kai Kapodistriako Panepistimio Athinon (UoA), established in 6 Christou Lada STR, Athina 10561, Greece.
- ▶ Consorzio Per Il Sistema Informativo (CSI PIEMONTE) IT4, 538244/CF01995120019, established in Corso Unione Sovietica 216, Torino 10134, Italy.
- ▶ Ekonomicka Univerzita V Bratislave (EUBA), 00399957, established in Dolnozemska Cesta 1, Bratislava 85235, Slovakia.
- ▶ Vrije Universiteit Brussel (VUB), 449012406, established in Pleinlaan 2, Brussels 1050, Belgium.
- ▶ Universitat Pompeu Fabra. Departament de Politiques Públiques i Departament de Ciències Experimentals i de la Salut. Barcelona. Spain.
- ▶ Departamento de Salud del Gobierno Vasco. Vitoria. Spain.
- ▶ Departamento de Salud de la Comunidad de Madrid. Madrid. Spain.
- ▶ Escuela Andaluza de Salud Pública. Granada. Spain.
- ▶ IGOB. Barcelona. Spain.
- ▶ Universidad de Antioquia. Medellín. Colombia.

Active Grants

- ▶ Maica Rodríguez Sanz. Evolución de las desigualdades socioeconómicas y medioambientales en la distribución geográfica de la mortalidad en Barcelona (1996-2015): MEDEA3. PI16/00961. Instituto de Salud Carlos III. Duration: 2017-2019. 27,000.00 €.
- ▶ Marc Marí Dell'Olmo. Pobreza energética y salud desde múltiples perspectivas: análisis individual, geográfico y temporal. PI15/02006. Instituto de Salud Carlos III. Duration: 2016-2018. 84,150.00 €.
- ▶ M. Isabel Pasarín. Evaluación de un proyecto de prevención integral de la obesidad infantil en la etapa pre-escolar en Barcelona (POIBA-2a fase). PI16/00701. Instituto de Salud Carlos III. Duration: 2016-2019. 80,465.00 €.
- ▶ Carme Borrell and Catherine Pérez. Participatory Urban Living for Sustainable Environments (PULSE) 727816. Comisión Europea H2020-EU.3.1.5 Duration: 2016-2019. 309,625.00€.
- ▶ Marc Marí Dell'Olmo. Pan-european urban climate services (PUCS) 730004-2 Vlaamse Instelling Voor Technologisch (leading institution). Duration: 2017-2019. 2,936,600.63 €.
- ▶ Catherine Pérez González. Safety CaUsation, Benefits and Efficiency – SAFETYCUBE. 633485 Horizon 2020. European Commission. 120,000.00 €.
- ▶ Carme Borrell. WP2 - "Shaping EUROpean policies to promote HEALTH equity" (Euro-Healthy) 643398. European Commission. Duration: 2014-2017. 268,777.00 €.
- ▶ Lucía Artazcoz. Estado de bienestar y salud: un análisis epidemiológico en base a una cohorte de afiliados a la seguridad social (EBISA). PI14/00057. Instituto de Salud Carlos III. Duration: 2014-2017. 84,095.00 €.
- ▶ Carme Borrell. Evaluación de efectos en salud del programa Treball als Barris. CB087541 RecerCaixa 2014. La Caixa. Duration: 2014-2017. 78.359,71 €.

Note: Total amount granted to PI. It does not include indirect costs.

Health Inequalities

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Salvador-Piedrafita M., Malmusi D., Borrell C., Time trends in health inequalities due to care in the context of the Spanish Dependency Law Evolución de las desigualdades en salud debidas al cuidado en el contexto de la Ley de Dependencia española (2017) *GAC SANIT*, 31 (1), 11-17.

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Scientific Production

Salvador-Piedrafita M., Malmusi D., Mehdi-panah R., Rodriguez-Sanz M., Espelt A., Perez C., Solf E., Abajo Del Rincon M., Borrell C., Views on the Effects of the Spanish Dependency Law on Caregivers' Quality of Life Using Concept Mapping (2017) INT J HEALTH SERV, 47 (2), 233-257.

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the equity lens: A systematic review (2017) SOC SCI MED, 175, 199-208.

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Adapting the service portfolio of a public health organisation to shrinking resources Adaptación de los servicios de una organización de salud pública a la disminución de los recursos (2017) GAC SANIT, 31 (3), 242-245.

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Epidemiology of Addictions



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Barbaglia Navarro, Gabriela ASPB
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Main Lines of Research

Epidemiology of Drug Consumption and Patterns of Use

- ▶ Estimating cocaine use incidence and consumption patterns.
- ▶ Estimating heroin incidence and consumption patterns.
- ▶ Estimating the prevalence of problematic cocaine, heroin and alcohol users.

Health Problems Associated with Drug Use

- ▶ Quality of life and psychiatric comorbidity in cocaine users.
- ▶ Service use in cocaine and alcohol users.
- ▶ Factors associated with cocaine addict and alcoholic retention in treatment programmes.
- ▶ Violent behaviour and aggressive attitudes in young cocaine consumers.

- ▶ Mortality and its determinants in cohorts with substance abuse disorders (alcohol, heroin and cocaine).

- ▶ Factors associated with acute health problems developing after cocaine and heroin use.

- ▶ Social and health discrepancies between immigrants and native drug users.

Health Policies

- ▶ Social inequalities in the evaluation of results and adherence to treatment.
- ▶ Infectious diseases related to drug use.
- ▶ Brief motivational intervention programs as a treatment alternative for teenage users of psychoactive substances.
- ▶ Role of the workplace in drug consumption.

Challenges

Epidemiology of Drug Consumption and Patterns of Use

- ▶ Determine incidence and patterns of cocaine use.
- ▶ Determine incidence and patterns of heroin use.
- ▶ Determine prevalence of cocaine, heroin and alcohol use.

Health Problems Associated with Drug Use

- ▶ Analyse aggressive and violent attitudes and behaviour in young cocaine users.
- ▶ Assess quality of life in users with psychiatric comorbidity.
- ▶ Determine use of services among young heroin, cocaine and alcohol users.
- ▶ Analyse factors associated with retention in treatment programmes for cocaine and alcohol addiction.

- ▶ Assess mortality and its determinants in cohorts of alcohol and cocaine-dependent subjects.

- ▶ Analyse factors associated with acute health problems following cocaine use.

- ▶ Analyse differential social and health determinants among immigrant users of illegal drugs.

Health Policies

- ▶ Evaluate supervised drug consumption rooms and other policies to reduce harm.
- ▶ Study social inequalities in evaluating results and adherence to treatment.
- ▶ Evaluate brief motivational intervention programmes as an alternative to disciplinary measures in teenage users of psychoactive substances.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Evaluation of Public Health Policies and Programmes (PI: Carlos Ariza)
- ▶ Health Inequalities (PI: Carme Borrell)

External Collaborations

- ▶ Several CIBERSAM and CIBERESP groups.

Active Grants

- ▶ Maria Teresa Brugal Puig. Evaluación del tratamiento en una cohorte de pacientes con trastorno por uso de alcohol y/o cocaína: Análisis del impacto de la Comorbilidad Psiquiátrica, Uso de Servicios y Análisis Costes. PI16/01075. Instituto de Salud Carlos III. Duration: 2017-2019. 66,500.00 €.
- ▶ Maria Teresa Brugal Puig. Red de Trastornos Adictivos. RD16/0017/0013. Instituto de Salud Carlos III. Duration: 2017-2021. 40,790.00 €.
- ▶ Albert Espelt Fernández. Disponibilidad, accesibilidad, visibilidad de consumo, promoción y publicidad del alcohol en el entorno urbano y su relación con el consumo de alcohol en adolescentes. 2016I029. Ministerio de Sanidad Servicios Sociales e Igualdad. Duration: 2017-2019. 37,000.00 €.
- ▶ Marina Bosque Prous. Disponibilidad, accesibilidad, visibilidad de consumo, promoción y publicidad del alcohol en el entorno urbano y su relación con el consumo de alcohol en adolescentes. 2016I029. Ministerio de Sanidad Servicios Sociales e Igualdad. Duration: 2017-2019. 37,000.00 €.
- ▶ Maria Teresa Brugal Puig. Estudio transversal y multicéntrico para el desarrollo de un modelo de predicción clínico y farmacogenético de la satisfacción del paciente dependiente de heroína con la metadona como un medicamento. SLT006/17/179. Generalitat de Catalunya. PERIS 2017. 170,627.11 €.

Note: Total amount granted to PI. It does not include indirect costs.

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FI 2.021



Primary Care Research



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Main Lines of Research

- ▶ Cardiovascular disease prevention in primary care.
- ▶ Health promotion in primary care.
- ▶ Ageing.
- ▶ Hypertension.
- ▶ Diabetes.
- ▶ Immunization.

Challenges

- ▶ Cooperate with other research teams of the IIB Sant Pau.
- ▶ Cooperate with other European institutions in implementing projects on risk prevention and health promotion in primary care.
- ▶ Encourage research into medical ethics in family medicine training.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Clinical Epidemiology and Health Care Services.
- ▶ Ageing Institute.
- ▶ Lipids and Cardiovascular Pathology Research, Sant Pau Hospital.
- ▶ Molecular Biology Laboratory, Fundació Puigvert.
- ▶ Agency of Public Health of Barcelona.

External Collaborations

- ▶ Ibermutuamur, a nationwide mutual company of workplace accidents that collaborates with the social security.

Active Grants

- ▶ Carles Brotons Cuixart. Desarrollo de una ecuación de riesgo cardiovascular de por vida en población laboral. PI14/01177. Instituto de Salud Carlos III. Duration: 2015-2017. 45,500.00 €.
- ▶ Carles Brotons Cuixart. Performance of the SCORE (Systematic COronary Risk Evaluation) model for European low risk countries and the new US American College of Cardiology (ACC)/American Heart Association (AHA) Risk Equation in a Spanish Cohort:

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- ▶ Carles Brotons Cuixart. Avaluació del risc cardiovascular en la gen gran. PREMI MUTUAM CONVIURE 2015. Fundació Mutuam Conviure. Duration: 2015-2017. 6,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Books or chapters with ISBN

- ▶ Brotons C. 100 Preguntas clave en CaridoLipidología. In: Zamorano JL. Capítulo: Dieta y ejercicio. ISBN 978-84-17221-17-1.

Grants Awarded in 2017

- ▶ Carles Brotons Cuixart. Ensayo clínico multicéntrico, aleatorizado y abierto, para evaluar la eficacia en la reducción del riesgo cardiovascular de una intervención dirigida a mejorar la información a los pacientes con riesgo cardiovascular alto. Estudio INFORISK. SLT002/16/00313. Departament de Salut. Duration: 2017-2019. 93,831.62 €.
- ▶ Mariano de la Figuera Von Wichmann. Prueba piloto de un programa de cribado poblacional de aneurisma de aorta abdominal realizada en atención primaria mediante ecografía. SLT002/16/00441. Departament de Salut. Duration: 2017-2019. 52,737.31 €.
- ▶ Diana Elizabeth Fernández Valverde, Avaluació de l'eficàcia de la telemedicina en la insuficiència cardíaca: programa @tendidos. ACADEMIA 2017. Acadèmia de Ciències Mèdiques. Duration: 2017-2019. 22,727.27 €.
- ▶ Carles Brotons Cuixart. Ensayo clínico multicéntrico, aleatorizado y abierto, para evaluar la eficacia en la reducción del riesgo cardiovascular de una intervención dirigida a mejorar la información a los pacientes con riesgo cardiovascular alto. Estudio INFORISK. SLT002/16/00313-01. Departament de Salut. Duration: 2017-2019. 46,034.03 €.
- ▶ Mariano de la Figuera Von Wichmann. Prueba piloto de un programa de cribado poblacional de aneurisma de aorta abdominal realizada en atención primaria mediante ecografía. SLT002/16/00441-01. Departament de Salut. Duration: 2017-2019. 61,591.76 €.
- ▶ Carles Brotons Cuixart. Validación externa de una ecuación de riesgo cardiovascular de por vida. P117/01031. Instituto de Salud Carlos III. Duration: 2018-2020. 41.000,00 €.

Note: Total amount granted to PI. It does not include indirect costs.

*TIF: 32.221 **MIF: 2.6851

Scientific Production

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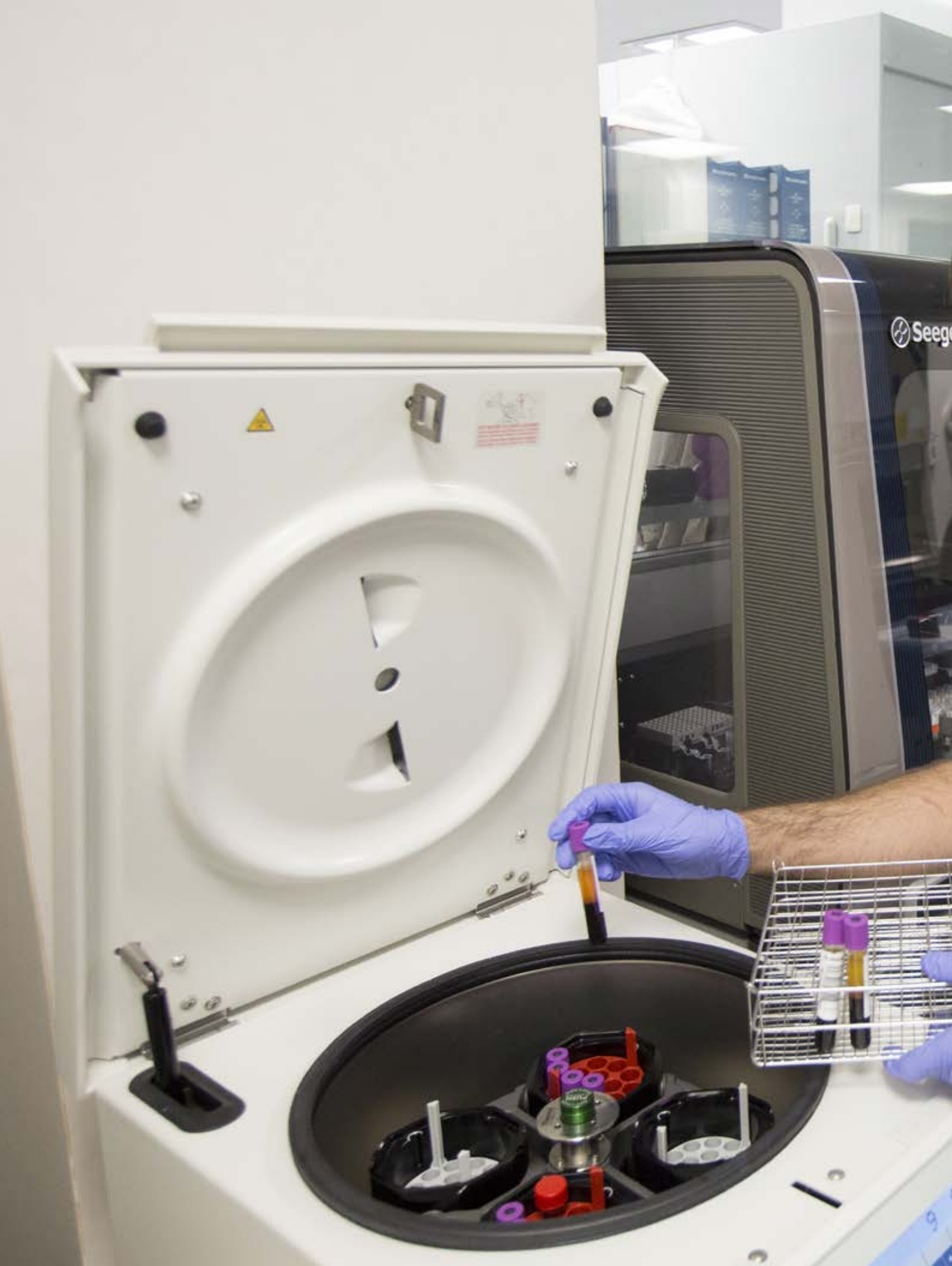
Ruiz Morilla M.D., Sans M., Casasa A., Gimenez N., Implementing technology in healthcare: Insights from physicians (2017) *BMC MED INFORM DECIS*, 17 (1).

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Primary Care Research

Other Publications

- ▶ Cabellos Sánchez A, Madueño Garro C, Campos Lizcano AM, Aguado Jodar A. Diario comunitario: ¿Qué actividades comunitarias se realizan en nueve centros de Atención Primaria? EL METGE DIGITAL 10 May 2017.
- ▶ F. López-Simarro, I. Moral, A. Aguado-Jodar, C. Cols-Sagarra, J. Mancera-Romero, Alonso-Fernández, S. Miravet-Jiménez, y C. Brotons. The impact of therapeutic inertia and the degree of the medication adherence on the control goals for patients with diabetes. SEMERGEN 2017 Nov 21. pii: S1138-3593(17)30301-5.
- ▶ Piepoli MF, Hoes AW, Agewall S, Albus C, Brotons C, Catapano AL, Cooney MT, Corrà U, Cosyns B, Deaton C, Graham I, Hall MS, Hobbs FDR, Løchen ML, Löllgen H, Marques-Vidal P, Perk J, Prescott E, Redon J, Richter DJ, Sattar N, Smulders Y, Tiberi M, van der Worp HB, van Dis I, Verschuren WMM. 2016 European guidelines on cardiovascular disease prevention in clinical practice. The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts. Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation]. G ITAL CARDIOL (ROME). 2017 Jul-Aug;18(7):547-612.



AREA T2

Molecular, Genomic Kinetic-Dynamic Bases and their Treatment

224 Genomics of Complex Diseases

226 Molecular Bases of Disease

228 Pharmacokinetic/Pharmacodynamic Modelling and Simulation

230 Generation of Advanced Therapy Medicines

232 Regenerative Medicine & Tissue Bioengineering

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Genomics of Complex Diseases



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Main Lines of Research

Complex Diseases and Epigenomics

Thrombosis Research:

- ▶ GAIT Project: Genetic Analysis of Idiopathic Thrombophilia
- ▶ RETROVE Project: Risk of Venous Thromboembolic Disease
- ▶ GOLIATH Project: Epigenomics of thrombosis

Research on Thrombosis and Cancer:

- ▶ OncoThromb Project: New biomarkers in Thrombosis and Cancer
- ▶ MIRTO Project: Modeling the Individual Risk of Thrombosis in Oncology

Osteoporosis: GAO Project

Aortic aneurysms: TAGA Project

Chronic Obstructive Disease: GEPOC Project

Genomics in Sports Medicine

Performance, effort and recovery:

- ▶ SUMMIT Project (Health in sport and its limits): Marathons and Ultras

Exposure to hypoxia in extreme environments:

- ▶ SHERPA_Everest'2017 Project

Bioinformatics

Analysis of data - patients of complex diseases:

- ▶ Salambó Project: Bioinformatics Platform

Challenges

- ▶ Analysis of Omics data (Genomics, transcriptomics, epigenomics) in the field of complex diseases with transversal and translational approach in cooperation with clinical groups.
- ▶ Identify new biomarkers (genetic, epigenetic and/or plasmatic) that determine the susceptibility to complex diseases.
- ▶ Identify new mechanisms involved in the development and progression of complex diseases.

- ▶ Development of predictive algorithms that integrate the genetic, biological and clinical information of the patients (Personalized Medicine).

The achievement of these objectives will directly affect the improvement of Diagnosis, Prognosis, Prevention and Treatment of diseases with complex genetic basis.

Active Grants

- ▶ José Manuel Soria Fernández, Sonia López Moreno. Identificación de Mecanismos de Regulación de la Expresión Génica (microRNAs) en la Enfermedad Tromboembólica Venosa. PI14/00582. Instituto de Salud Carlos III. Duration: 2015-2018. 111,500.00 €.
- ▶ José Manuel Soria Fernández. Modeling the Individual Risk of Thrombosis in Oncology (MIRTO). ESC 2015. European Society of Cardiology. Duration: 2016-2017. 268,253.00 €.

- ▶ José Manuel Soria Fernández. Unitat de Genòmica de Malalties Complexes. IR16-P5. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017. 7,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Laura Martín Fernández. Determinantes Genéticos de la Vía Intrínseca de la Coagulación. Universitat de Barcelona. Dr. José Manuel Soria Fernández. Date of defense: 13/06/2017.

Patents

- ▶ Eduardo Salas, Andrés Muñoz, José Manuel Soria. Cancer-associated venous thromboembolic events. Application number: EP17382297.4, UE. 10/01/2017.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Thrombosis and Haemostasis, Dr. J.C. Souto: GAIT, MIRTO, RETROVE Projects.
- ▶ Internal Medicine, Dr. J. Casademont: GAO Project.
- ▶ Angiology, Vascular Biology and Inflammation, Dr. J.R. Escudero, Dra. M. Camacho: TAGA, GAIT Projects.
- ▶ Neurology, Dr. J. Marti: MIRTO Project.
- ▶ Medical Oncology, Dr. Barnadas: MIRTO Project.
- ▶ Clinical Hematology, Dr. J. Sierra: MIRTO Project.
- ▶ Neumology, Dr. O. Sibila: SUMMIT, SHERPA Projects

External Collaborations

- ▶ Clinical Oncology Department, Hospital Gregorio Marañón, Madrid, Dr. A. Muñoz: ONCOTHROMB Project.
- ▶ Centre de Recerca en Enginyeria Biomèdica, Universitat Politècnica de Catalunya, Barcelona, Dr. A. Perera: SUMMIT Project.
- ▶ Laboratory Haematology, Hospital Timone Marseille, France, Dr. P. Morange: GAIT, VEREMA Projects.

- ▶ Department of Genetic, University of Genève, Switzerland, Dr. M. Dermitzakis and Dr Ana Viñuela: GAIT Project.
- ▶ Department of Cardiology, Karolinska Institut, Sweden, Dra. M. Sabater: GAIT Project.
- ▶ INSERM UMR_S1219 - Bordeaux Public Health Center. Bordeaux, France. Dr. DA. Tregouet: GAIT, VEREMA Projects.
- ▶ Haematology Department, Karolinska Hospital, Sweden, Dr. J. Odeberg: VEREMA Project.
- ▶ Institute of Biological Psychiatry, Sankt Hans Hospital. Roskilde, Denmark, Dr. A. Buil: Bioinformatics of Complex diseases, GAIT Project.
- ▶ Department of Internal Medicine. Clinical Department of Hematology and Hemostasis. University of Wien, Austria. Dra. Ingrid Pabinger. OncoThromb, MIRTO Projects.
- ▶ Ferrer Incode. Development of Genetic Diagnostics in Thrombosis.
- ▶ Leo-Pharma. Prediction of Thrombosis Risk in cancer patients.
- ▶ STAGO. Development of New Biomarkers in Thrombosis.
- ▶ Boehringer Ingelheim. Modeling the Individual Risk of Thrombosis in Oncology (MIRTO).

Grants Awarded in 2017

- ▶ Alba Rodríguez Rius. Identificación de Mecanismos de Regulación de la Expresión Génica (microRNAs) en la Enfermedad Tromboembólica Venosa. 2017 FI_B 00673. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2020. 40,806.00 €.
- ▶ José Manuel Soria Fernández. Exposición a la hipoxia ambiental extrema y su efecto sobre la respuesta inflamatoria y cardiopulmonar: Impacto biológico, genético y clínico. SHERPA EVEREST 2017. Fundació Bancària Caixa d'Estalvis i Pensions. Duration: 2017-2018. 97,000.00 €.
- ▶ José Manuel Soria Fernández. Validación del Proyecto MIRTO (Modeling the Individual Risk of Thrombosis in Oncology).

- ▶ P117/00059. Instituto de Salud Carlos III. Duration: 2018-2020. 112,000.00 €.
- ▶ Maria Sabater Lleal. Identification of novel biomarkers and genetic pathways involved in Abdominal Aortic Aneurysm. CP17/00142(P). Instituto de Salud Carlos III. Duration: 2018-2020. 99,000.00 €.
- ▶ Maria Sabater Lleal. Contratos de investigadores Miguel Servet tipo I 2017. CP17/00142. Instituto de Salud Carlos III. Duration: 2018-2023. 202,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

*TIF: 15.981 **MIF: 3.1962

Scientific Production

Esteban J., de la Morena-Barrío M.E., Sal-loum-Asfar S., Padilla J., Minano A., Roldan V., Soria J.M., Vidal F., Corral J., Vicente V., High incidence of FXI deficiency in a Spanish town caused by 11 different mutations and the first duplication of F11: Results from the Yecla study (2017) HAEMOPHILIA, 23 (6), e488-e496.
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Maqueda M., Roca E., Brotons D., Soria J.M., Perera A., Affected pathways and transcriptional regulators in gene expression response to an ultra-marathon trail: Global and independent activity approaches (2017) PLOS ONE, 12 (10): e0180322, e0180322, eCollection 2017.
IF: 2.766

Martin-Fernandez L., Gavidia-Bovadilla G., Corrales I., Brunel H., Ramirez L., Lopez S., Souto J.C., Vidal F., Soria J.M., Next generation sequencing to dissect the genetic architecture of KNG1 and F11 loci using factor XI levels as an intermediate phenotype of thrombosis (2017) PLOS ONE, 12 (4): e0176301, eCollection 2017.
IF: 2.766

Sennblad B., Basu S., Mazur J., Suchon P., Martinez-Perez A., Vlieg A.H., Truong V., Li Y., Gadin J.R., Tang W., Grossman V., de Haan H.G., Handin N., Silveira A., Souto J.C., Franco-Cereceda A., Morange P-E., Gagnon F., Soria J.M., Eriksson P., Hamsten A., Maegdefessel L., Rosendaal F.R., Wild P., Folsom A.R., Tregouet D.-A., Sabater-Lleal M., Ge-

nome-wide association study with additional genetic and post-transcriptional analyses reveals novel regulators of plasma factor XI levels (2017) HUM MOL GENET, 26 (3), 637-649.

IF: 4.902

Vázquez-Santiago M, Vilalta N, Ziyatdinov A, Cuevas B, Macho R, Pujol-Moix N, Carrasco M, Mateo J, Fontcuberta J, Soria JM, Souto JC. Platelet count and plateletcrit are associated with an increased risk of venous thrombosis in females. Results from the RETROVE study. Thromb Res. 2017 Jul 23;157:162-164.

IF: 2.779

Molecular Bases of Disease



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Vencesla García, Adoración IR

Main Lines of Research

Cancer

- ▶ Structural and functional analysis of the androgen receptor (AR). Design and structure-function characterization of AR homodimerization inhibitors.
- ▶ Analysis of mutations and SNPs that affect the TET2 gene and implications for hematopoietic and lymphoid neoplasms.

Neurodegenerative Diseases

- ▶ Analysis of the structural bases of exon-7 exclusion from SMN2 and implications for the pathobiology of spinal muscular atrophy (SMA).

- ▶ Structural and functional investigations of the kinase, PINK1, and implications for Parkinson's disease.

Thrombosis and Haemostasis

- ▶ Structural and functional investigations of blood coagulation factors, with emphasis on thrombin interactions with physiological substrates (factor VIII and protease-activated receptors).

Lipid Metabolism and Dyslipidemias

- ▶ Bioinformatics analysis of STAP1 mutations identified in individuals with hypercholesterolemia.

Challenges

- ▶ Consolidate and extend research within the HSCSP Research Institute and the rest of the IIB Sant Pau in a context of limited access to financial support. To this end, the group needs to participate in at least one financed structure-and-function project in each of three major research areas (cardiovascular diseases, neurodegenerative diseases and cancer and innate immune responses).

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Metabolic Bases of Cardiovascular Risk
- ▶ Parkinson Disease and Movement Disorders
- ▶ Haematological Diagnosis
- ▶ Genetic Diseases
- ▶ Molecular Physiology of the Synapse

External Collaborations

- ▶ Dra. Eva Estébanez-Perpiña, UBIB, Universitat de Barcelona
- ▶ Dr. Jun Xu, Sun Yat-Sen University, Guangzhou, China

Active Grants

- ▶ Pablo Fuentes Prior. Estudio de las interacciones de la trombina con sustratos e inhibidores y su aplicación al diseño de nuevos pro- y anticoagulantes. SAF2014-57994-R. Ministerio de Economía y Competitividad. Duration: 2015-2018. 100,000.00 €.
- ▶ Pablo Fuentes Prior. A novel splicing therapeutic approach for Spinal Muscular Atrophy. Daniel Bravo 2015. Fundación Privada Daniel Bravo-Andreu. Duration: 2016-2019. 157,717.00 €.

- ▶ Pablo Fuentes Prior. Modulating SMN2 splicing with dual inhibitors of Sam68 and hnRNP A1: A novel therapeutic approach for Spinal Muscular Atrophy. SMA Europe. Spinal Muscular Atrophy (SMA Europe). Duration: 2014-2017. 117,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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Scientific
Production

Nadal M., Prekovic S., Gallastegui N., Helsen C., Abella M., Zielinska K., Gay M., Vilaseca M., Taules M., Houtsmuller A.B., Van Royen M.E., Claessens F., Fuentes-Prior P., Estebanez-Perpina E., Structure of the homodimeric androgen receptor ligand-binding domain (2017) NAT COMMUN, 8.
IF: 12.353

Pharmacokinetic/Pharmacodynamic Modelling and Simulation



Coordinator

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IR

Members

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IR

Main Lines of Research

- ▶ Population pharmacokinetic analysis aimed at establishing the pharmacokinetic characteristics of drugs and at differentiating and quantifying the degree of intra- and inter-variability.
- ▶ Pharmacokinetic/pharmacodynamic analysis of continuous response aimed at the analysis of effects (in the presence or absence of drugs) where the variable being evaluated changes values gradually.
- ▶ Pharmacokinetic/pharmacodynamic analysis of non-continuous response for responses most frequently observed in

clinical practice, such as categorical responses, survival, frequency and censored responses.

- ▶ Simulation of clinical trials and therapeutic dosage selection aimed at assisting with the design of clinical trials to help the development of new drugs (for pharmaceutical companies) and at improving the design of clinical trials (basic research and non-profit clinical studies) and to help in applications of daily clinical practice.

Challenges

- ▶ Maintain existing external cooperation agreements.
- ▶ Establish new cooperation agreements within the Research Institute of the Hospital de la Santa Creu i Sant Pau.

- ▶ Generate sufficient financial resources to maintain and expand group staffing.
- ▶ Communicate the group's activities.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Human Neuropsychopharmacology and Psychiatry. Active grant PI16/00078. Principal investigators: Jordi Riba and Enrique Álvarez. Title: Efectos de un análogo de la ayahuasca sobre el procesamiento emocional en pacientes con Trastorno Límite de la Personalidad. Instituto de Salud Carlos III. Total amount: 56,265 €
- ▶ Pharmacological Research in Humans.
- ▶ Pharmacy service. Developing the project "population pharmacokinetics of busulfan".
- ▶ Epidemiology and Traumatology Services: Developing the project "pharmacokinetics of tranexamic acid".

External Collaborations

- ▶ Lluita Contra la SIDA Foundation, Germans Trias i Pujol Hospital, Badalona, Spain.
 - Active grant: "Efficacy and safety of the HIVcons vaccine with romidepsine in the reduction of the virus reservoir and the viral control after stopping cART. Population PK/PD analysis". Fondo de investigación sanitaria (Instituto Carlos III). (PI15/). Beatriz Mothe/José Moltó, Investigator responsible at Sant Pau (Marta Valle)
 - Developing the project: "Population pharmacokinetics of dolutegravir in HIV infected patients"
- ▶ Pharmacy Service, Hospital Quiron, Mallorca, Spain. Developing the PhD thesis: "Antimicrobial use in a small-medium size hospital"
- ▶ Department of Pharmacology, Torino University, Italy. Developing the project: "population pharmacokinetics of dolutegravir in HIV infected patients"
- ▶ Department of oncology. Hospital Valle Hebrón. Developing the PhD thesis: "Pharmacokinetics of oncologic drugs in patients with hepatic or renal impairment"

Active Grants

- ▶ Marta Valle Cano. Targeted nanoconjugates for the selective elimination of stem cells in disseminated cancer. PIE15/00028. Instituto de Salud Carlos III. Duration: 2016-2018. 82,640.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

***TIF: 11.964 **MIF: 3.988**

Scientific Production

Moltó J, Rajoli R, Back D, Valle M, Miranda C, Owen A, Clotet B, Siccardi M. Use of a physiologically based pharmacokinetic model to simulate drug-drug interactions between antineoplastic and antiretroviral drugs. *J Antimicrob Chemother.* 2017 Mar 1; 72(3): 805-811.

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Sampedro F., Revenga M.D.L.F., Valle M., Roberto N., Dominguez-Clave E., Elices M., Luna L.E., Crippa J.A.S., Hallak J.E.C., Araujo D.B.D., Friedlander P., Barker S.A., Alvarez E., Soler J., Pascual J.C., Feilding A., Riba J., Assessing the psychedelic "after-glow" in ayahuasca users: Post-acute neurometabolic and functional connectivity changes are associated with enhanced mindfulness capacities (2017) *INT J NEUROPSYCHOPH*, 20 (9), 698-711.

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Santamaria E., Estevez J.A., Riba J., Izquierdo I., Valle M., Population pharmacokinetic modelling of rupatadine solution in 6-11 year olds and optimisation of the experimental design in younger children (2017) *PLOS ONE*, 12 (4), -.

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Generation of Advanced Therapy Medicines



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Torrens Zapata, Sílvia BST
Valdivia García, Elena BST
Vivas Pradillo, Daniel BST
Vives Armengol, Joaquim BST

* During 2017 Dr. Querol assumed the direction of the group

Main Lines of Research

- ▶ Bioprocessing for cell and tissue production.
- ▶ Regeneration of locomotor systems.
- ▶ Stem cell therapy for the lymphohaematopoietic system.
- ▶ Stem cell therapy for multiple sclerosis.

Challenges

- ▶ Create a section within the Blood and Tissue Bank (BST) with the structure of a pharmaceutical enterprise, capable of developing, trialling, registering and commercializing advanced therapeutic drugs.

Collaborations

External Collaborations

- ▶ Phase III, randomised, open-label, multi-centre trial of ruxolitinib versus the best therapy available in patients with chronic corticosteroid-refractory graft-versus-host disease after allogeneic stem cell transplantation. Novartis. 2016-004432-38. Duration: 2017-2018. (Isabel Sanchez Ortega, ICO)
- ▶ Prospective, randomised trial comparing spinal fusion in patients with degenerative pathology of the lumbar spine, using autologous mesenchymal cells immobilised in human bone particles, with respect to the autologous iliac crest graft from the patient. Ministerio de Sanidad, Servicios Sociales e Igualdad. EC10-209. Duration: 2012- 2018. (Bagó Granell, Hospital Vall d'Hebron)
- ▶ Transplantation of autologous bone marrow-derived mesenchymal stem cells as a potential therapeutic strategy for the treatment of multiple sclerosis. Ministerio de Sanidad, Servicios Sociales e Igualdad. EC10-266. Duration: 2012-2018. (Xavier Montalbán Gairin, Hospital Vall d'Hebron)
- ▶ Autologous cell therapy with adult stem cells in osteonecrosis of the femoral head. Ministerio de Sanidad, Servicios Sociales e Igualdad. EC10-208. Duration: 2012 to 2018. (Màrius Aguirre Canyadell, Hospital Vall d'Hebron)
- ▶ Phase I / IIA pilot clinical safety and efficacy trial in the repair of meniscus injury by infiltration of autologous mesenchymal cells. Ministerio de Sanidad, Servicios Sociales e Igualdad. EC11-436. Duration: 2012-2017. (Joan Carles Monllau Garcia, ICATME)
- ▶ Phase IIa, single-centre, prospective, randomised, parallel, two treatment arm,

open with blind evaluation and single-dose pilot clinical trial for the evaluation of adult autologous 'ex vivo' expanded mesenchymal stem cells conjugated on bone matrix of allogeneic origin in the treatment of non-hypertrophic non-union of long bones. ASEPEYO and BST. 2013-005025-23. Duration: 2016-2017. (Fernando Granell Escobar, Hospital ASEPEYO)

- ▶ Use of third party specific T lymphocytes against viral antigens, from a registry of voluntary donors, for the treatment of CMV, EBV and adenovirus infections in an allogeneic haematopoietic cell transplant recipient. Instituto de Salud Carlos III. PI16/01433 Duration: 2017-2019. (Pere Barba Suñol, Hospital Vall d'Hebron)
- ▶ FANCOSTEM: Phase I / II clinical trial to evaluate the safety and efficacy of mobilisation and collection of CD34 cells after treatment with plerixafor and filgrastim in patients with Fanconi anaemia for later use in gene therapy trials. Ministerio de Sanidad, Servicios Sociales e Igualdad. EC11-559. Duration: 2012-2018. (Cristina Diaz Heredia, Hospital Vall d'Hebron)
- ▶ Sergi Querol Giner (BST)
- ▶ TK008: Randomised phase III trial on haplo identical haematopoietic cell transplantation with or without a support strategy with donated HSV-TK lymphocytes in patients with acute high-risk leukaemia. Molmed. 2009-012973-37 Duration: 2017-2018. (Jordi Sierra Gil, Hospital de Sant Pau)
- ▶ Expanded treatment protocol for relapsed/refractory paediatric/young adult acute lymphoblastic leukaemia patients to be treated with CTL019. Novartis. 2016-001991-31. Duration: 2017- 2018. (Susana Rives Solà, Hospital Sant Joan de Déu)

Active Grants

- ▶ Sergi Querol Giner. Prophylactic infusion of donor lymphocytes in cord blood transplant. Marató de TV3 Foundation. 20133230. Duration: 2014-2017.
- ▶ Sergi Querol Giner. Clinical efficacy of umbilical cord blood platelet gel in diabetic foot ulcers. BST. 2015-000510-22. Duration: 2015-2017.
- ▶ Luciano Rodríguez Gómez. Validation of manufacturing and quality control, according to good manufacturing practices of a tissue engineering drug for the treatment of myocardial injury after infarction. BST. I.2017.041. Duration: 2017-2018.
- ▶ Francesc Rudilla Salvador. Use of "third party" T-specific lymphocytes against viral antigens, from a registry of voluntary donors, for the treatment of CMV, EBV and ADV infections in allogeneic haematopoietic progenitor cell transplant recipients. BST. I.2017.042. Duration: 2017-2019.
- ▶ Joaquim Vives Armengol. Fibrin Sealant Grifols as scaffold in advanced therapies. 3D printing scaffolds for advanced trauma applications. In vitro study. Grifols. I.2016.035. Duration: 2017-2018.
- ▶ Joaquim Vives Armengol. Evaluation of Albix as a cryoprotector agent of MSC Albix® as stabiliser agent for T lymphocytes. Albu-medix. I.2017.023. Duration: 2017-2018.
- ▶ Ruth Coll Bonet. Safety of a double infusion of Wharton's jelly mesenchymal stem cells in spinal cord injury. BST. I.2017.052. Duration: 2017-2020.
- ▶ Sergi Querol Giner. Phase I / II, multicentre, randomised, open clinical trial of two treatment arms to evaluate the safety and efficacy of umbilical cord blood drop in the treatment of neurotrophic keratitis. BST. I.2016.010. Duration: 2017-2019.
- ▶ Joaquim Vives Armengol. Study of the anti-inflammatory and immunomodulatory properties of the advanced therapy drugs developed in the Cell Therapy Service. I.2015.012. BST. Duration: 2016-2018.
- ▶ José Luís Caro Oleas. Development and validation of a protocol for KIR genotyping using NGS technology and its application in different areas of the hospital care. BST. I.2017.035. Duration: 2017-2019.
- ▶ Josep Maria Canals Coll (Universitat de Barcelona), Joan Garcia López (BST). ADVANCE(CAT) Accelerator for the development of advanced therapies in Catalonia. COMRD15-1-0013. ACCIÓ. Duration: 2016-2019.
- ▶ Antoni Bayés Genís (Hospital Germans Trias i Pujol), Joaquim Vives Armengol (BST). Cardiopoiesis with biomatrix to regenerate post-infarct scar: From bench to bedside (first-in-man trial). Departament de Salut. SLT002/16/00234. Duration: 2017-2019.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Nerea Castillo Flores. Kinetics and predictive factors of the study of the kinetics of immune reconstitution and its predictive factors in umbilical cord blood transplantation. Universitat Autònoma de Barcelona. Directors: Sergi Querol Giner and Josep Maria Ribera. Date of defense: 24/04/2017.

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Scientific Production

- Caminal M., Velez R., Rabanal R.M., Vivas D., Battle-Morera L., Aguirre M., Barquinero J., Garcia J., Vives J., A reproducible method for the isolation and expansion of ovine mesenchymal stromal cells from bone marrow for use in regenerative medicine preclinical studies (2017) J TISSUE ENG REGEN M, 11 (12), 3408-3416.
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- Casamayor-Genesca A., Pla A., Oliver-Vila I., Pujals-Fonts N., Marin-Gallen S., Caminal M., Pujol-Autonell I., Carrascal J., Vives-Pi M., Garcia J., Vives J., Clinical-scale expansion of CD34+ cord blood cells amplifies committed progenitors and rapid scid repopulation cells (2017) NEW BIOTECHNOL, 35, 19-29.
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- Chaverri D, Vives J. Towards the clinical use of circulating biomarkers predictive of bone union. BIOMARK MED 2017 2017 Dec;11(12):1125-1133.
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- Nikolajeva O, Rocha V, Danby R, Ruggeri A, Volt F, Baudoux E, G Gomez S, Kögler G, Larghero J, Lecchi L, Martinez MS, Navarrete C, Pouthiers F, Querol S, Kenzey C, Szydlo R, Gluckman E, Madrigal A. Umbilical Cord Blood Cytomegalovirus Serostatus Does Not Have an Impact on Outcomes of Umbilical Cord Blood Transplantation for Acute Leukaemia. BIOL BLOOD MARROW TRANSPLANT 2017 Oct;23(10):1729-1735.
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- Reyes B., Coca M.I., Codinach M., Lopez-Lucas M.D., del Mazo-Barbara A., Caminal M., Oliver-Vila I., Cabanas V., Lope-Piedrafita S., Garcia-Lopez J., Moraleda J.M., Fontecha C.G., Vives J., Assessment of biodistribution using mesenchymal stromal cells: Algorithm for study design and challenges in detection methodologies (2017) CYTOTHERAPY, 19 (9), 1060-1069.
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- Roura S., Galvez-Monton C., Mirabel C., Vives J., Bayes-Genis A., Mesenchymal stem cells for cardiac repair: Are the actors ready for the clinical scenario? (2017) STEM CELL RES THER, 8 (1), -.
IF: 4.963
- Joshi N, Rodríguez L, Reverté-Vinaixa MM, Navarro A. Platelet-Rich Plasma Injections for Advanced Knee Osteoarthritis: A Prospective, Randomized, Double-Blinded Clinical Trial. THE ORTHOPAEDIC JOURNAL OF SPORTS MEDICINE 2017 2017 Feb 13;5(2):2325967116689386.

Regenerative Medicine & Tissue Bioengineering



Coordinator

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Members

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Otero Areitio, Nausica BST
Piteira, Rita BST
Riba Tietz, Tatiana BST
Tabera, Jaime BST
Trias Adroher, Esteve BST
Villarrodona Serrat, Anna BST

Main Lines of Research

- ▶ Tissue procurement, clinical application, ethics and regulation.
- ▶ Tissue decellularization approaches for clinical applications.
- ▶ Cell-based therapy for ocular diseases.
- ▶ 3D bioimpression and biocompatible substrates.
- ▶ Ex-vivo cell expansion for regenerative purposes.

Challenges

- ▶ Optimization and improvement of technical procedures related to the donor and tissues.
- ▶ Advances in the elaboration of criteria, regulation and ethics for donor and tissues.
- ▶ Technical excellence related to the processing cells, tissues and advanced therapies medical products (ATMP).
- ▶ The development of new approaches and ATMPs for regenerative medicine.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Service of Ophthalmology (José Antonio Buil / Zoraida del Campo)
- ▶ Service of Traumatology (Pablo Gelber)
- ▶ Service of Gynecology & Obstetric (Oriol Porta, Elisa Llurba)

External Collaborations

National

- ▶ University of Barcelona, Department of Surgery and Medical-Surgical Specialties
- ▶ University of Barcelona, Biophysics and Bioengineering Unit
- ▶ Institute for Bioengineering of Catalonia (IBEC)
- ▶ Center of Regenerative Medicine (CMR), Barcelona

- ▶ Center of Genomic Regulation (CRG), Barcelona
- ▶ Image Diagnostic Institute (IDI), Barcelona
- ▶ Vall d'Hebron Research Institute (VHIR)
- ▶ Advanced Therapies Committee – Hospital Clínic de Barcelona
- ▶ ICREC Group - Hospital Germans Trias i Pujol (Badalona)

International

- ▶ National Health Service Blood and Tissue (Liverpool, UK)
- ▶ Veneto Eye and Multitissue Bank (Mestre-Treviso, Italy)
- ▶ Irish Blood and Tissue Bank (Dublin, Ireland)
- ▶ Croatia National Tissue Bank (Zagreb, Croatia)
- ▶ EFS-National Blood Service (Paris, France)

Awards

- ▶ Ricardo P Casaroli-Marano: Professor Joaquín Barraquer Price, Catalonia Royal Academy of Medicine. Barcelona 2017.
- ▶ Ricardo P Casaroli-Marano: Special Visiting Researcher, program "Science Without Frontiers", National Council for Scientific and Technological Development (CNPq, Brazil). Grant 401096/2014-9 (Mar 2015-Mar 2019).

Theses

- ▶ Nuria Nieto Nicolau. Terapia celular para la reparación y regeneración de la superficie ocular: potencial terapéutico de las células progenitoras mesenquimales. University of Barcelona. Director: Ricardo P. Casaroli-Marano. Date of defense: 27/01/2017.

Patents

- ▶ Casaroli Marano RP, Reina M, Vilaró S, Parente Duena A, García Antón JM. Use of glycoprotein NF3 (*Pseudoalteromonas antarctica*) for the treatment and re-epithelization of wounds. 02738185.4-2107-ES0200281. European Patent Office (Patent), 07/06/2002.
- ▶ Parente Duena A, Garces Garces J, Guinea Sánchez J, García Antón JM, Casaroli Marano RP, Reina M, Vilaró S. Use of glycoprotein produced by *Pseudoalteromonas antarctica* and having fibroblast adhesion and keratinocyte growth promoting action in topical compositions for wound treatment and re-epithelization. WO2002102406-A1 / EP1402898-A1 / EP1402898-B1. International Patent Classification (Patent), 27/12/2002.
- ▶ Parente Duena A, Garces Garces J, Guinea Sánchez J, García Antón JM, Casaroli Marano RP, Reina M, Vilaró S. Use of a glycoprotein for the treatment and re-epithelization of wounds. US07022668, US Patent and Trademark Office Patents (Patent), 04/04/2006.
- ▶ Benet Ferrus D, Corcostegui Guraya B, Prieto García J, (Casaroli-Marano RP). Conjunto de moléculas anti-angiogénicas y su uso. P200801291, Oficina Española de Patentes y Marcas (Licence). 01/09/2011.
- ▶ Benet Ferrus D, Corcostegui Guraya B, Prieto García J, (Casaroli-Marano RP). Set of antiangiogenic molecules and use thereof. PCT/ES2009/000236 / WO2009138533. European Patent Office (Licence). 26/11/2010.

Associated Groups

236 Emerging Processes in Prevalent Diseases

238 Radiophysics and Radioprotection

240 Paediatrics

244 Ophthalmology

246 Nuclear Medicine

250 Intensive Medicine


252 Pharmacy

254 Dermatology

258 Anaesthesiology

260 Plastic Surgery

262 Palliative Care



264 Andrology

266 Urology

272 Radiation Oncology

274 Locomotor System Research

276 Pain and Neurosciences

278 Nursing Care Research

280 Reproductive Health

282 Translational Molecular Oncology

284 Cardiac Surgery

286 Inflammation and Vascular Remodelling

Emerging Processes in Prevalent Diseases



Coordinator

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Members

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Main Lines of Research

Emerging Processes in Prevalent Diseases

- ▶ Study and analysis of processes frequently observed in emergency departments so as to transfer the results to clinical practice and provide better care to patients.

Clinical Organization and Management (Mireia Puig and Josep Ris)

- ▶ Patient safety and emergency service quality. PI: Maite Álvarez.
- ▶ Nosocomial infection. PI: Albert Mauri.
- ▶ Short-stay unit. PI: J.M. Guardiola.
- ▶ Undergraduate teaching. PI: J.A. Montiel.

Organ Donation and Coordination (Francisco Caballero and Jesús Leal)

Respiratory System Disorders (Salvador Benito)

- ▶ Acute Respiratory Failure. PI: A. Moliné.
- ▶ Ventilatory pattern analysis in heart failure. PI: Sergio Herrera.
- ▶ Pneumonia in the emergency department. PI: Miriam Mateo.

- ▶ Noninvasive ventilation. PI: Miquel Turbau.
- ▶ Pulmonary embolism. PI: Laura Lozano.

Cardiovascular System (Miquel Santaló)

- ▶ Acute coronary syndrome PI: Ivan Díaz.
- ▶ Acute coronary syndrome in women. PI: Marta Blázquez.
- ▶ Ultrasensitive markers in acute coronary syndrome. PI: Aitor Alquézar.
- ▶ Cardiac failure. PI: Miguel Rizzi.
- ▶ Supraventricular arrhythmias. PI: Olga Trejo.

Community Disorders

- ▶ Diabetes care in emergency departments. PI: Iván Agra.
- ▶ Infection in emergency departments. PI: J.M. Guardiola.
- ▶ Sepsis syndrome. PI: Ivan Díaz.
- ▶ Elderly patients. PI: Leopoldo Higa.
- ▶ Sexes transmitted disease. PI: Montse Seres.
- ▶ Haematology disease. PI: Marta Blázquez.

Active Grants

- ▶ Miquel Turbau Valls. Training stage at Fundació de Medicina Tropical Doutor Heitor Vieira Dourado de Manaus. IR16-E2. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 1,200.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Prize Best in Class 2017 for the best Emergency Service in patient care.
- ▶ Prize Unió Catalana d'Hospitals en Innovació en Gestió 2017 for the Program of Attention to the Fragility of the Emergency Service.
- ▶ Finalist of the Excellence Award for Leadership and Management in Healthcare category of the 2017 International Awards of the International Hospital Federation, 41st IHF World Hospital Congress.
- ▶ Prize Mutuam Conviure 2017 to the best research project: Atenció Geriàtrica Integral en un Servei d'Urgències Hospitalari. Repercussió sobre la salut dels pacients i la gestió de fluxos després de la implantació a Urgències i la Unitat d'Estada Curta.
- ▶ Accreditation for methodological quality and the positive impact generated in the organization of the continuous improvement methodology promoted by the Urgent Care Process (2017, Observatori d'Innovació en Gestió en Salut, Agència de Qualitat i Avaluació Sanitàries de Catalunya – AquAS, del Departament de Salut de la Generalitat de Catalunya).

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Alquezar A., Santalo M., Rizzi M., Gich I., Grau M., Sionis A., Ordonez-Llanos J., Merce J., Martin A., Munoz M., Povar J., Velilla J., Calmarza P., Temboury F., Ortiz C., Balaguer J., Carratala A., Combined high-sensitivity copeptin and troponin T evaluation for the diagnosis of non-ST elevation acute coronary syndrome in the emergency department Evaluación de una estrategia diagnóstica combinada con copeptina y troponina T ultrasensibles en el infarto de miocardio sin elevación del segmento ST en los servicios de urgencias (2017) EMERGENCIAS, 29 (4), 237-244.

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Alquezar-Arbe A., Sionis A., Ordonez-Llanos J., Cardiac troponins: 25 years on the stage and still improving their clinical value (2017) CRIT REV CL LAB SCI, 54 (7-8), 551-571.

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Ambavane A., Lindahl B., Giannitis E., Roiz J., Mendivil J., Frankenstein L., Body R., Christ M., Bingisser R., Alquezar A., Mueller C., Economic evaluation of the one-hour rule-out and rule-in algorithm for acute myocardial infarction using the high-sensitivity cardiac troponin T assay in the emergency department (2017) PLOS ONE, 12 (11).

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Berenguer J., Rodriguez-Castellano E., Carro A., Wichmann M.A.V., Montero M., Galindo M.J., Mallolas J., Crespo M., Tellez M.J., Quereda C., Sanz J., Barros C., Tural C., Santos I., Pulido F., Guardiola J.M., Rubio R., Ortega E., Montes M.L., Jurdado J.J., Gaspar G., Esteban H., Bellon J.M., Gonzalez-Garcia J., Eradication of hepatitis C virus and non-liver-related non-acquired immune deficiency syndrome-related events in human immunodeficiency virus/hepatitis C virus coinfection (2017) HEPATOLOGY, 66 (2), 344-356.

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Dominguez-Rodriguez A., Burillo-Putze G., Garcia-Saiz M.M., Aldea-Perona A., Harmand M.G.-C., Miro O., Abreu-Gonzalez P., Pinillos-Echeverria M.A., Rizzi M.A., Martin-Sanchez F.J., Suero-Mendez C., Calvo-Rodriguez R., Carballo-Carmona C., Gil V., Herrero P., Bajo A.A.B., Salmeron P.P., Study Design and Rationale of "A Multicenter, Open-Labelled, Randomized Controlled Trial Comparing Midazolam Versus Morphine in Acute Pulmonary Edema": MIMO Trial (2017) CARDIOVASC DRUG THER, 31 (2), 209-213.

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Ferre C., Llopis F., Martin-Sanchez F.J., Sempere G., Llorens P., Navarro C., Martinez-Ortiz M., Juan A., Sanpedro F., Guardiola J.M., Guzman M., Alvarez A., Arranz M., Daza M., Cortes E., Perez V., Rua M.A., Serra P., Guerrero F., Nunez J.C., Illull J.A., Almela A., Anduiza J., Martin A., Juarez R., Gil J., Ferreira A., Lapuerta L., Castro C., Porras A., Valentin P.M., General Characteristics and Activity of Emergency Department Short-Stay Units in Spanish Hospitals (2017) J EMERG MED, 52 (5), 764-768.

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Martin-Sanchez F.J., Rodriguez-Adrada E., Vidan M.T., Llopis Garcia G., Gonzalez del Castillo J., Rizzi M.A., Alquezar A., Pinera P., Lazaro Aragues P., Llorens P., Herrero P., Jacob J., Gil V., Fernandez C., Bueno H., Miro O., Impact of Frailty and Disability on 30-Day

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Prim N., Turbau M., Rivera A., Rodriguez-Navarro J., Coll P., Mirelis B., Prevalence of colistin resistance in clinical isolates of Enterobacteriaceae: A four-year cross-sectional study (2017) J INFECTION, 75 (6), 493-498.

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Torres Bonafonte O.H., Gil Olivas E., Perez Macho E., Pacho Pacho C., Mateo Roca M., Casademont Pou J., Ruiz Hidalgo D., Predictors of drug-resistant pathogens in community-onset pneumonia: Are factors considered in health-care-associated pneumonia useful in the emergency department? Predictores de patógenos resistentes en las neumonías procedentes de la comunidad: ¿Es útil en urgencias el concepto de neumonía asociada a cuidados sanitarios? (2017) EMERGENCIAS, 29 (5), 306-312.

IF: 3.6080

Radiophysics and Radioprotection



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Main Lines of Research

External beam radiotherapy

- ▶ Characterization of various in vivo dose measurement detectors for radiation therapy treatments with intensity modulation (IMRT).
- ▶ Validation of dose calculation algorithms for external beam radiotherapy planning systems.

- ▶ Optimization of QA procedures for IMRT, stereotactic body radiation therapy (SBRT) and gating respiratory treatments.
- ▶ Skin dose in IMRT and SBRT techniques.

Radiology

- ▶ Evaluation of a digital scatter correction for bedside chest radiographs.

Collaborations

External Collaborations

- ▶ Grup d'estudis citogenètics i moleculars dels efectes de les radiacions ionitzants i del càncer. 2017 SGR 255. UAB. Joan Francesc Barquinero (IP), HSCSP: Pablo Carrasco, Montserrat Ribas, Teresa Eudaldo, Núria Jornet, Artur Latorre, Agustín Ruiz, Paula Delgado, Carla Cases, P. Itziar Valverde. 2017-2019.

- ▶ Institut de Tècniques Energètiques de Catalunya (INTE), UPC. Ongoing research and knowledge transfer projects: development of thermoluminescence in vivo dosimetry for external beam radiotherapy use. Application of the Monte Carlo simulation method for radiation transport in a clinical environment and especially for testing and improving treatment planning systems algorithms used in external beam radiation therapy.

Active Grants

- ▶ Montserrat Ribas Morales. Estudis Citogenètics i Moleculars dels efectes de les radiacions Montserrat Ribas Morales. Precisión y seguridad en SBRT: evaluación del efecto del movimiento respiratorio y dosimetría "in vivo" mediante dosimetría portal. PI15/00788. Instituto de Salud Carlos III. Duration: 2016-2018. 81,500.00 €.
- ▶ Pablo Carrasco de Fez. Dosimetría en piel en técnicas de IMRT y SBRT. Proyectos Singulares 2015. Asociación Española Contra el Cáncer. Duration: 2015-2018. 25,500.00 €.
- ▶ Maria Lizondo Gisbert. Evaluación de las nuevas estrategias de irradiación en el tratamiento del cáncer de mama y su implementación en la clínica. AIO 2016. Asociación Española Contra el Cáncer. Duration: 2016-2019. 135,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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Scientific Production

Jurado-Bruggeman D., Hernandez V., Saez J., Navarro D., Pino F., Martinez T., Alayrach M.-E., Ailleres N., Melero A., Jornet N., Multi-centre audit of VMAT planning and pre-treatment verification (2017) RADIOTHER ONCOL, 124 (2), 302-310.
IF: 4.942

*Total Impact Factor **Mean Impact Factor



Paediatrics



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García Borau, María José FGS
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Serna, Vicente FGS
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Tobajas Torrubiano, Eva FGS
Torrent Español,
Montserrat FGS
Turón Viñas, Eulàlia FGS
Valle Figueras José María FGS

Main Lines of Research

- ▶ Erythropoietin as an alternative to transfusion in paediatrics.
- ▶ Clinical application of peritoneal drainage in the treatment of enterocolitis in infants.
- ▶ Chronic functional constipation: treatment with PEG.
- ▶ Creation of a Catalan diagnostic and clinical monitoring network for rare anaemias due to major haemoglobinopathies.
- ▶ Minimal residual disease in risk assessment in the treatment of children with acute lymphoblastic leukaemia in the SHOP protocol (in collaboration with the HSCSP Haematology Department).

Challenges

- ▶ Transplant haematopoietic progenitor cells from alternative donors.
- ▶ Make pre-implant genetic diagnoses.
- ▶ Transplant haematopoietic progenitor cells in congenital immunodeficiencies.
- ▶ Transplant haematopoietic progenitor cells in congenital metabolic pathologies.
- ▶ Research congenital immunodeficiencies.
- ▶ Research Fanconi anaemia (group recognized by the UAB, Barcelona).
- ▶ Apply adaptive cell immunotherapy to tumours.
- ▶ Intervention in postasphyxia neuronal damage in infants with asphyxia by applying therapeutic hypothermia (in the context of a Catalan network).
- ▶ Polytraumatized patient care programme. PPT implementation code in HSCSP and in CatSalut central register.
- ▶ Implement a multidisciplinary institutional massive transfusion protocol in the HSCSP.

Collaborations with other IIB Sant Pau Groups

- ▶ Dra. Gloria María Fraga collaborates in the project of Dra. Roser Torra Balcells (PI) FIS award, P115/01824: Nefropatías familiares no filiadas: genes implicados en su causa y su variabilidad fenotípica. 2016-2018.
- ▶ Dra. Gloria María Fraga collaborates in the project of Dra. Elisabeth Ars Criach (PI) P116/01998: Estudio genómico de nefropatías de inicio temprano.
- ▶ Dra. Gloria María Fraga collaborates in the project of Dra. Elisa Llubra Olivé (PI) RD16/0022: Red de Salud Materno Infantil y del Desarrollo (SAMID). Duration: 2017-2021. RD 16/0002/0015. RETICS funded by PN I+D+I 2013-2016, ISCIII - Subdirección General de Evaluación y Fomento de la Investigación y el Fondo Europeo de Desarrollo Regional (FEDER).
- ▶ Workgroup of the Guía de Práctica Clínica sobre Manejo del Paciente con Reflujo Vesicoureteral primario o esencial. Guía de Práctica Clínica. Manejo del Paciente con Reflujo Vesicoureteral primario o esencial. Actualización. Asociación Española de Nefrología Pediátrica. 2014.
- ▶ Project "Compromiso por la Calidad de las Sociedades Médicas" (coordinated by Ministerio de Sanidad, Servicios Sociales e Igualdad, Sociedad Española de Medicina Interna and GuíaSalud).
- ▶ E. Carreras, S. Brió, E. Moliner. Programa VINCat. Resultats de la vigilància estandaritzada de la incidència de bacterièmia relacionada amb catèter venós central (BRCVC) a les Unitats de Cures Intensives Pediàtriques (UCIP) i Neonatals (UCIN) dels Hospitals de Catalunya.
- ▶ J.M. Valle T-Figueras, collaborator in the multicenter work "Infecciones osteoarticulares en pediatría. Estudio prospectivo multicentrico" de la Red de Infecciones Osteoarticulares Pediátricas (RIOped).

Collaborations

External Collaborations

- ▶ Clinical research group linked to Centro de Investigación Biomédica en la Red de Enfermedades Raras (CIBERER).
- ▶ G. Fraga (collaborator). Multicenter European study (París, Roma, Barcelona): estudio de Asociación de Genoma Completo (GWAS) para la identificación de factores genéticos de riesgo en pacientes con síndrome nefrótico córtico-sensible (SNCS)/síndrome nefrótico por lesiones mínimas (SNLM).

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Moscheo C., Mura R., Porta F., Russo G., Tondo A., Torrent M., Vetrilla S., Villegas J.A., Viscardi E., Zanzazzo G.A., Canete A., Metastatic neuroblastoma in infants: are survival rates excellent only within the stringent framework of clinical trials? (2017) *CLIN TRANSL ONCOL*, 19 (1), 76-83.

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Esteban E., Belda S., García-Soler P., Rodríguez-Núñez A., Calvo C., Gil-Anton J., Bustinza A., Iglesias-Bouzas M., Pujol-Jove M., deCarlos J.C., García-Iñiguez J.P., Pérez-Iranzo A., Téllez C., Ortiz I., Pérez R., Bonil V., Brió S., Concha A., López J.D., Murga V., Flores J.C., Trujillo A., Felipe A., Abadeso C., Pino M., León J., Martínez M.C., Gómez F., Pérez-Montejano R., Tapia R., Jordan I., Ferrer R.A. multifaceted educational intervention shortened time to antibiotic administration in children with severe sepsis and septic shock: ABISS Edusepsis pediatric study. *INTENSIVE CARE MED.* 2017 Dec;43(12):1916-1918.

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Marotta M., Fernandez-Martin A., Oria M., Fontecha C.G., Gine C., Martinez-Ibanez V., Carreras E., Belfort M.A., Pelizzo G., Peiro J.L., Isolation, characterization, and differentiation of multipotent neural progenitor cells

from human cerebrospinal fluid in fetal cystic myelomeningocele (2017) *STEM CELL RES*, 22, 33-42.

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Murillo M., Bel J., Perez J., Corripio R., Carreras G., Herrero X., Mengibar J.-M., Rodriguez-Arjona D., Ravens-Sieberer U., Raat H., Rajmil L., Health-related quality of life (HRQOL) and its associated factors in children with Type 1 Diabetes Mellitus (T1DM) (2017) *BMC PEDIATR*, 17 (1).

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Murillo M., Bel J., Perez J., Corripio R., Carreras G., Herrero X., Mengibar J.-M., Rodriguez-Arjona D., Ravens-Sieberer U., Raat H., Rajmil L., Impact of monitoring health-related quality of life in clinical practice in children with type 1 diabetes mellitus (2017) *QUAL LIFE RES*, 26 (12), 3267-3277.

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Porta R., Capdevila E., Botet F., Verd S., Ginovart G., Moliner E., Nicolas M., Rios J., Morbidity and mortality of very low birth weight multiples compared with singletons (2017) *J MATERN-FETAL NEO M*, 1-9.

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Ruiz A., Cruz-Lemini M., Masoller N., Sanz-Cortes M., Ferrer Q., Ribera I., Martinez J.M., Crispi F., Arevalo S., Gomez O., Perez-Hoyos S., Carreras E., Gratacos E., Llorba E., Longitudinal changes in fetal biometry and cerebroplacental hemodynamics in fetuses with congenital heart disease (2017) *ULTRASOUND OBST GYN*, 49 (3), 379-386.

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Paediatrics

Other Publications

- ▶ Escribano J, Ibars Z, Gonzalez JD, Parada E, Fraga G, Samper M, Ferre N, Cardona V. Predictive factors of pyelonephritis in infants and children. *Pediatr Nephrol* (2017) 32: 905-915.
- ▶ Fraga-Rodríguez GM, Brió-Sanagustin S, Turón-Viñas E, Brdely P Dixon, Carreras-González E. Eculizumab in a child with atypical haemolytic uraemic syndrome and haemophagocytic lymphohistiocytosis triggered by cytomegalovirus infection. *BMJ Case Reports* 2017.
- ▶ García-Reymundo M, Demestre X, Calvo MJ, Ginovart G, Jimenez A, Hurtado JA. Prematuro tardío en España: experiencia del Grupo SEN34-36. *AN PEDIATR (BARC)*. 2017.
- ▶ Valls Guallar C, Pujol Abajo M, López Bernal E, Armengol Santacreu J, Ginovart Galiana G, Vila Solé M, Carreras Gonzales E, Calaf Alsina J. Programa "Cap a casa". Part hospitalari amb mínim ingrés. *ANNALS DE MEDICINA* 2017; 100 (1): 14-17.
- ▶ Verd S, Ginovart G. Neonatal Weight Gain on Minute or Large Amounts of Donor Milk. Letter. *CLIN THER*. 2017 Dec; 39(12): 2450.



Ophthalmology



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Main Lines of Research

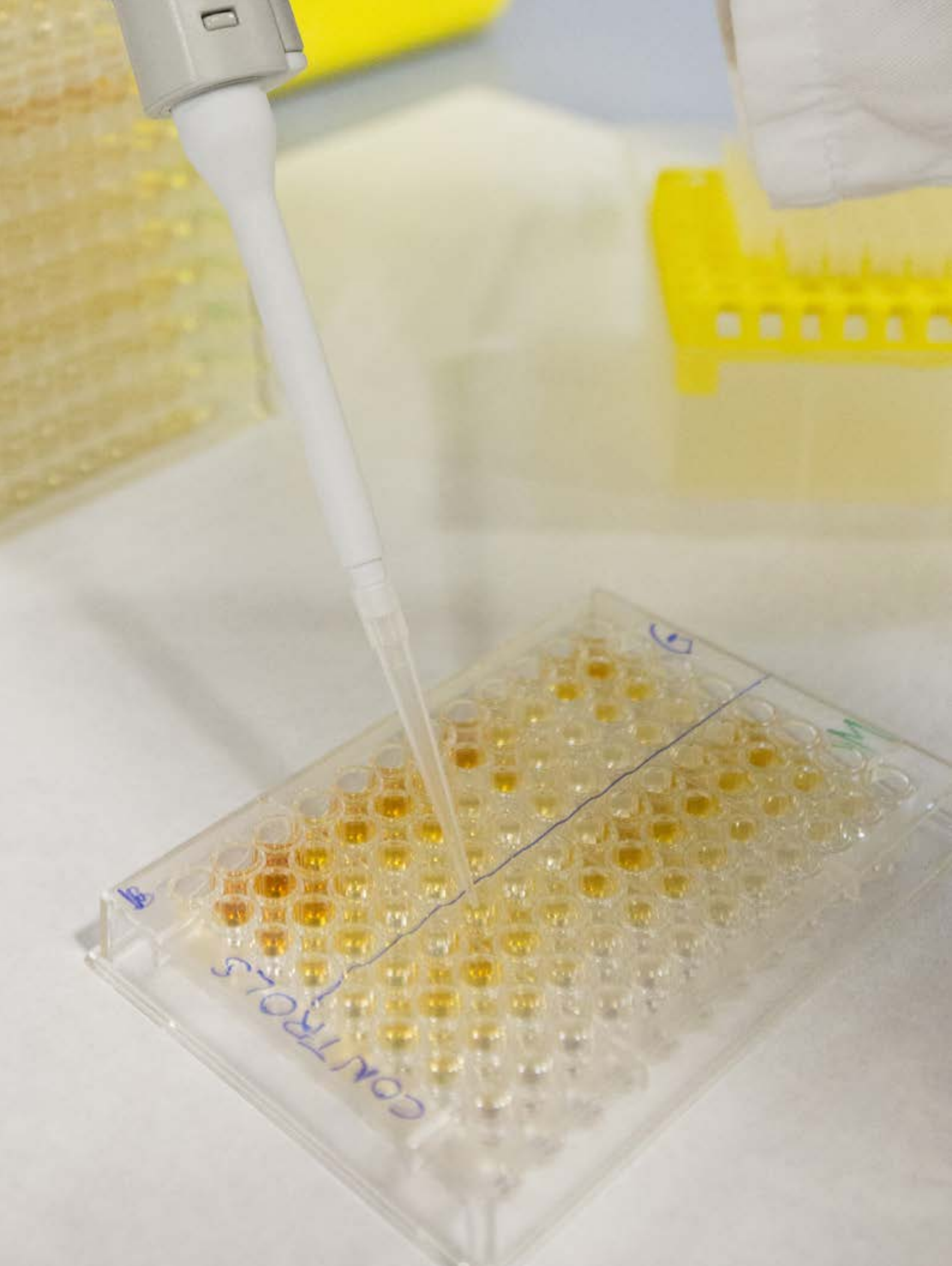
- ▶ Optimization of the functional rehabilitation of patients after cataract surgery using multifocal intraocular lens, and evaluation of vision quality in terms of parameters such as visual acuity, sensitivity to contrast and aberrometry.
- ▶ Ocular repercussions of allogeneic medullary transplants and evaluation of the different clinical manifestations and response to treatment in graft-versus-host disease.
- ▶ Comparison of the effectiveness and safety of intravitreal injection of ranibizumab vs laser photocoagulation in patients with visual alteration due to diabetic macular edema.

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Scientific Production

Garay Sanchez S.A., Rodriguez Alvarez F.J., Zavala-Padilla G., Mejia-Cristobal L.M., Cruz-Rangel A., Costas M., Fernandez Velasco D.A., Melendez-Zajgla J., Del Pozo-Yauner L., Stability and aggregation propensity do not fully account for the association of various germline variable domain gene segments with light chain amyloidosis (2017) BIOL CHEM, 398 (4), 477-489.
IF: 3.0220

*Total Impact Factor **Mean Impact Factor



Nuclear Medicine



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 López Mora, Diego Alfonso FGS
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Main Lines of Research

Oncology

- ▶ New diagnostic methods based on the identification and visualization of molecular targets employing metabolic mechanisms, receptor systems, hypoxia, angiogenesis and apoptosis.
- ▶ New applications for sentinel node detection and radioguided surgery models.

Cardiovascular Research

- ▶ New methods for non-invasive assessment of ischaemic heart disease and heart failure.

- ▶ Cardiovascular functional studies.
- ▶ New methods for assessing cardiac innervation.

Functional Neuroimaging

- ▶ Development of new functional imaging methods for evaluating neurodegenerative diseases (Parkinson, Parkinson-Plus, Alzheimer, MCI).
- ▶ Dopaminergic system studies using IBZM and Datscan.

Challenges

- ▶ Introduce new technologies to clinical research (given that imaging techniques are evolving very rapidly towards multimodal systems that integrate biological, molecular, anatomical and functional information in a single examination) and include these technologies, mainly PET/CT and PET/MR, in the group and hospital's research activities.

New Molecular Imaging Techniques

- ▶ Develop new hybrid molecular imaging technologies, mainly PET/CT and PET/MR,

building on pre-clinical and clinical molecular imaging models developed using

- ▶ SPECT and conventional nuclear medicine technologies.

PET Imaging Biomarkers

- ▶ Develop new PET radioactive tracers to be used as biomarkers in new imaging technologies building on our experience with radioactive tracers to view in vivo diagnostic and therapeutic targets.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Neuroradiology: research into neurological and mental disorders and ageing (Dr. Camacho, member).
- ▶ Oncology, Gynaecology, Surgery, Radiology, Radiotherapy, Nuclear Medicine and Pathology: evaluation of the usefulness of PET CT with 18F-FDG in the staging of locally advanced breast carcinoma (Dr. Duch, PI).
- ▶ Cerebrovascular Diseases (Dr. Carrió, member).

External Collaborations

- ▶ Zhejiang University, Hangzhou, China. Molecular imaging (Prof. Hong Zhang, Prof. Mei Tian).
- ▶ Hospital Clínico Universitario de Chile, Santiago de Chile. (Prof. P.Gonzalez, Prof. T. Massardo).
- ▶ QIMP team, Center of Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria. (Prof. T. Beyrer).

Theses

- ▶ Ana Paula Caresia. PET/CT en el cáncer de ovario: Estadificación inicial, valoración de la reseabilidad primaria y la respuesta a la quimioterapia neoadyuvante. Universitat Autònoma de Barcelona. Director: Ignasi Carrió. Date of defense: 26/05/2017.

- ▶ Frederic Sampedro Santaló. Automatic image quantification strategies in clinical nuclear medicine and neuroradiology. Universitat Autònoma de Barcelona. Director: Ignasi Carrió. Date of defense: 20/04/2017.

Active Grants

- ▶ Maria del Valle Camacho Marti. PET en malalties neurodegeneratives. IR16-E6. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 1,200.00 €.
- ▶ María del Valle Camacho. Philips Healthcare Master Research Agreement. Assessment of Advanced Technologies for Molecular Imaging.
- ▶ María del Valle Camacho. ROCHE protocol WN25203-PET-substudy: Sub-study to study WN25203, using positron emission tomography (PET) with an amyloid tracer to assess changes in amyloid load over time in subjects with prodromal Alzheimer's disease.
- ▶ María del Valle Camacho. ROCHE protocol WN28745-PET Substudy. PET imaging substudy associated with: a phase III, randomized, double-blind, placebo-controlled, parallel-group, multicenter, efficacy, and safety study of gantenerumab in patients with mild Alzheimer's disease.
- ▶ Montserrat Estorch. MK-8931-019: Ensayo clínico de fase III, aleatorizado, controlado con placebo, de grupos paralelos, doble ciego, para estudiar la eficacia y la seguridad de MK-8931 (SCH900931) en pacientes con deterioro cognitivo leve amnésico debido a la enfermedad de Alzheimer (EA prodrómica)
- ▶ Montserrat Estorch. MK-8931-017: Estudio aleatorizado, doble ciego, controlado con placebo y de grupos paralelos de la eficacia y la seguridad de MK-8931 en sujetos con enfermedad de Alzheimer leve o moderada.
- ▶ María del Valle Camacho. D5010C00009: A 24 month, multicenter, randomized, double-blind, placebo-controlled, parallel-group, efficacy, safety, tolerability, biomarker, and pharmacokinetic study of AZD3293 in outpatients with early Alzheimer's disease.
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- ▶ Albert Flotats. 1289.5: A multi-centre, double-blind, parallel-group, randomized controlled study to investigate the efficacy, safety and tolerability of orally administered BI409306 during a 12 week treatment period compared to placebo in patients with Alzheimer's disease.
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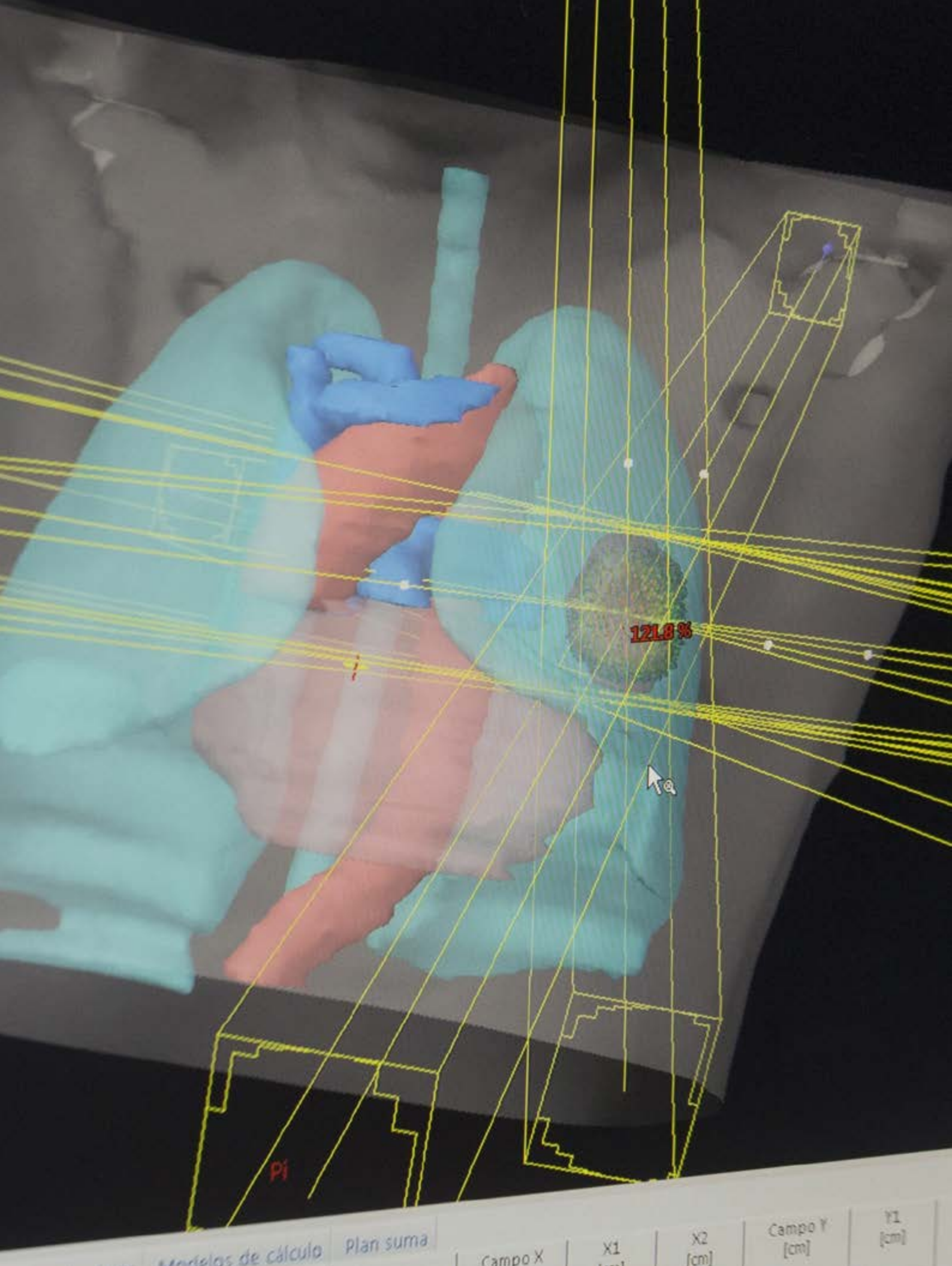
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Intensive Medicine



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Main Lines of Research

Acute Respiratory Failure and Artificial Ventilation

- ▶ Non-invasive ventilation.
- ▶ New ventilation modes: proportional-assist ventilation and NAVA.
- ▶ Prone decubitus in acute respiratory dysfunction syndrome (ARDS).
- ▶ Artificial ventilation withdrawal.
- ▶ Expert ventilation systems.
- ▶ Sleep and artificial ventilation.
- ▶ Early and active mobilization of the critical patient.
- ▶ Extracorporeal CO₂ removal in ARDS patients.
- ▶ High-flow oxygen administration by nasal cannula in postextubation phase.
- ▶ Prevalence of drug interactions in critical care unit.

Study of the Usefulness of New Biomarkers in Critically Ill Patients

- ▶ BNP in weaning from mechanical ventilation.
- ▶ Use of the NGAL protein in the renal prognosis of critically ill patients.
- ▶ Strict control of blood glucose in critically ill patients.
- ▶ Prophylaxis of acute gastric mucosal injury in critically ill patients.
- ▶ Study of the haemodynamic effects of different antipyretic drugs in critically ill patients.
- ▶ Influence of position change to supine decubitus position in intra-abdominal pressure.

Challenges

- ▶ Consolidate clinical and physiological research into ventilation in critically ill patients through multicentre and multinational networking.
- ▶ Create a stable and well-trained group of researchers in this discipline.

Collaborations

Collaboration with other IIB Sant Pau Groups

- ▶ Pharmacological Research in Humans.

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- ▶ Bellingan G, Brealey D, Mancebo J, Mercat A, Patroniti N, Pettila V, Quintel M, Vincent J-L, Maksimow M, Jalkanen M, Piippo I, Ranieri M. Comparison of the efficacy and safety of FP-1201-lyo (intravenously administered recombinant human interferon beta-1a) and placebo in the treatment of patients with moderate or severe acute respiratory distress syndrome: study protocol for a randomized controlled trial. *TRIALS* 2017; 18:536.

Pharmacy



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Main Lines of Research

- ▶ Pharmaceutical care
- ▶ Clinical epidemiology and public health
- ▶ Artificial nutrition
- ▶ Pharmaceutical formulation
- ▶ Oncohaematology
- ▶ Independent clinical trials

Challenges

- ▶ Evaluate the impact of different pharmaceutical care programmes on the effectiveness and the safety of pharmacological treatments: personalized medicine (clinical pharmacokinetics & pharmacogenetics), health education, medication reconciliation, identification and prevention of drug related health problems, m-Health and e-Health.
- ▶ Use of clinical epidemiology to gain evidence in patient care: association between risk factors and health outcomes, study of drug interactions, adherence to medication, assessment of regular clinical practice.
- ▶ Evaluate the impact of artificial nutrition on the clinical evolution of patients.
- ▶ Study the stability of cytostatics in different pharmaceutical forms.
- ▶ Determine the stability and the PK-PD of protein nanoparticles with antimetastatic activity.
- ▶ Actively cooperate in independent clinical trials performed in Sant Pau.

Collaborations

Collaboration with other IIB Sant Pau Groups

- ▶ Oncogenesis and Antitumour Drugs- CIBER-BBN
- ▶ Clinical Haematology
- ▶ Medical Oncology
- ▶ Intensive Care Medicine
- ▶ Emergency
- ▶ Cardiology
- ▶ Infectious Diseases (HIV)
- ▶ Genetics

External Collaborations

- ▶ Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN). Instituto de Salud Carlos III.
- ▶ Centro de Investigación en Salud Mental (CIBERSAM). Instituto de Salud Carlos III.
- ▶ Department of Pharmacology, Toxicology and Therapeutic Chemistry, Faculty of Pharmacy, University of Barcelona.
- ▶ Spanish Society of Hospital Pharmacy.
- ▶ Catalan Society of Clinical Pharmacy

Active Grants

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- ▶ Jorge Sierra. Terapia dirigida de Auriostatina E o Ara-C a células de leucemia mieloide aguda que expresan CXCR4, receptor implicado en adhesión al estroma y quimiorresistencia. PI14/00450. Instituto de Salud Carlos III, FIS . Duration: 2015-2017. 231,715 €.
- ▶ José Guerra Ramon. Caracterización genética del síndrome de QT largo asociado a fármacos. PI17/00980. Instituto de

Salud Carlos III, FIS. Duration: 2017-2018. 95,227 €.

- ▶ Mireia Puig. Atenció geriàtrica integral en un Servei d'Urgències Hospitalari. Repercussió sobre la salut dels pacients i la gestió de fluxos després de la implantació a Urgències i la Unitat d'Estada Curta. Duration: 2017-2018.
- ▶ Mar Gomis-Pastor. Improvement in Clinical Practice Using mHealth Technology. ID MHEART: NCT02554578. Duration: 2016-2019.

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Theses

- ▶ Ana María Juanes Borrego. Ensayo clínico randomizado de un programa de atención farmacéutica en pacientes con insuficiencia cardíaca y/o enfermedad pulmonar obstructiva crónica usuarios del servicio de urgencias del hospital de la Santa Creu i Sant Pau de Barcelona. Universidad de Granada. Directores: Maria Antònia Mangues Bafalluy, Maria Isabel Baena Parejo, Maria José Faus Dáder. Date of defense: 09/06/2017.
- ▶ Neus Pagès Puigdemont. Abordaje cualitativo y cuantitativo de la adherencia a los tratamientos farmacológicos. Universidad de Granada. Directores: Maria Antònia Mangues Bafalluy, Laura Tuneu Valls. Date of defense: 09/06/2017.

Awards

- ▶ A. Juanes (IP: M Puig). Research prize of the Fundació Mutuam Conviure Mutuam 2017- Atenció geriàtrica integral en un Servei d'Urgències Hospitalari. Repercussió sobre la salut dels pacients i la gestió de fluxos després de la implantació a Urgències i la Unitat d'Estada Curta.

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Dermatology



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Main Lines of Research

- ▶ Biologic therapy in dermatology.
- ▶ Genome-wide association studies in psoriasis.
- ▶ Medical and physical treatment options for vascular tumours.
- ▶ Psychopathological studies of patients with chronic dermatological disorders.
- ▶ Innate and acquired immunity-mediated dermatological diseases.

Challenges

- ▶ Ensure a stable clinical research infrastructure and staff.
- ▶ Foster interdepartmental collaborative research.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Parkinson Disease and Movement Disorders.
- ▶ Inflammatory Diseases

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Blauvelt A., Papp K.A., Griffiths C.E.M., Puig L., Weisman J., Dutronc Y., Kerr L.F., Ilo D., Mallbris L., Augustin M., Efficacy and Safety of Switching to Ixekizumab in Etanercept Non-Responders: A Subanalysis from Two Phase III Randomized Clinical Trials in Moderate-to-Severe Plaque Psoriasis (UNCOVER-2 and -3) (2017) *AM J CLIN DERMATOL*, 18 (2), 273-280.

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Anaesthesiology



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Muñoz Andrade, G. Rolando	FGS	Unzueta Merino, María Carmen	FGS
Pablo Fernández, Rosa	FGS		

Main Lines of Research

Perioperative medicine

- ▶ Epidemiologic and clinical studies of perioperative morbidity and mortality in collaboration with the Epidemiology Department of HSCSP and external scientific organisations.
- ▶ Cost-benefit study of cardiac surgery in patients older than 80 years.
- ▶ Prevalence of postoperative pain.
- ▶ Prediction of cronification of postoperative pain.

Rationalization of perioperative fluid therapy and blood products

- ▶ Improvement of efficiency of masive transfusions.
- ▶ Monitoring of critical perioperative coagulopathy.
- ▶ Identification and recovery from preoperative anaemia.

- ▶ Study of the prevalence of perioperative transfusions.
- ▶ Monitoring of perioperative fluid therapy.

New health service delivery systems

- ▶ Improvement of perioperative care of patients with knee fracture.
- ▶ Optimization of preoperative evaluations in cataract surgery.
- ▶ Professional team preoperative evaluations.
- ▶ Zero preoperative stay.

Physiology, pharmacology and anaesthetic techniques

- ▶ Intraoperative respiratory physiology.
- ▶ Management of preoperative anxiety in Pediatric Anesthesia and Surgery.
- ▶ Improvement of intraoperative hypothermia in general surgery

Challenges

- ▶ Critical analysis of new clinical technologies.
- ▶ Patient blood management.
- ▶ Perioperative medicine.
- ▶ Development of new health service systems.
- ▶ Clinical and preclinical research into physiology, pharmacology and anaesthetic/analgesic techniques.

Active Grants

- ▶ María Carmen Unzueta Merino. Reducción de las complicaciones postoperatorias y de la estancia hospitalaria con una estrategia perioperatoria individualizada de ventilación de protección pulmonar. Estudio comparativo, prospectivo, multicéntrico, aleatorizado y controlado. PI14/00829 C. Instituto de Salud Carlos III. Duration: 2015-2017.
- ▶ Pilar Paniagua Iglesias. Evaluación del grado de cumplimiento e impacto clínico

de los protocolos de transfusión masiva (PTM). PI16/01134. Instituto de Salud Carlos III. Duration: 2017-2019. 82,000.00 €.

- ▶ Astrid María Batalla González. Adecuación del medio perioperatorio al paciente pediátrico como método de ansiolisis. IR16-E5. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2017-2017. 1,200.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Collaborations with other IIB Sant Pau Groups

- ▶ PALLAPUPAS. Influencia de la intervención de pallapupas sobre la ansiedad preoperatoria infantil medida por niveles de cortisol salival. CEIC HSCSP, IR HSCSP. Duration: 2016-2018.
- ▶ IMPROVE-O2. Reducción de la infección de la herida quirúrgica con ventilación de protección pulmonar y FiO2 elevada. Incliva EUDRAC: 2016: 002934-34. Instituto Carlos III. Duration: 2017-2018.
- ▶ ALBUMINA-CEC. Influencia de la albúmina en CEC sobre el desarrollo de disfunción renal aguda postoperatoria asociada a la cirugía cardíaca bajo circulación extracorpórea. CEIC HSCSP. Duration: 2017-2019.
- ▶ HIPOTERMIA QUIR. Análisis de la eficacia de los sistemas de calentamiento por convección en la prevención de la hipotermia intraoperatoria no deseada. IR HSC. Duration: 2017-2019.

External Collaborations

- ▶ POPULAR (Postanesthesia PULmonary complications After use of muscle Relaxants in Europe), multicentre observational study. European Society of Anaesthesiology (ESA).
- ▶ Analysis of the Hemostatic Potential of Coagulation Factor Concentrates in an In Vitro Model of Extreme Hemodilution. Heimbrant Grant.

- ▶ Collaboration in Competitive, International and Multicenter Study titled TRICS (Restrictive or liberal red-cell transfusion for cardiac surgery). Population Health Research Institute. Hamilton General Hospital Canada. NCT 02042898.
- ▶ Collaboration in Competitive, International and Multicenter Study titled MANAGE (Management of myocardial injury after noncardiac surgery) - Population Health Research Institute. Hamilton General Hospital Canada. NCT 01661101 / 2014-2017
- ▶ Collaboration in Competitive, International and Multicenter Study titled AFFECT (Ensayo clínico aleatorizado multicéntrico paralelo en pacientes antiagregados con fractura peritrocantérea de fémur que evalúa una estrategia para acortar el tiempo hasta la cirugía) P116/01879 - Instituto Carlos III, 2017-2019
- ▶ Collaboration in Competitive, International and Multicenter Study titled HIP- ATTACK (Hip fracture accelerated surgical care and Treatment Track)- Population Health Research Institute. Hamilton General Hospital Canada CEIC 15/294 - Population Health Research Institute. Hamilton General Hospital Canada. NCT 01661101.
- ▶ IPEGASUS (Individualized Perioperative goal- directed Therapy in Major Abdominal Surgery). NCT 030221525 - Hamburg University, Deutschland. Duration: 2017-2019.

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Martín-Fumadó C, Gómez-Durán EL, Galán-Serrano J, Barbería-Macalain E, Arymany-Manso J, Parera-Ruiz A. Toma de decisiones al final de la vida y ante el diagnóstico de muerte encefálica. REV ESP MED. LEGAL 2017; 43: 123-126.

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Plastic Surgery



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Main Lines of Research

- ▶ Application of imaging techniques for intraoperative studies of perforator vessels with the aim to improve the design of flaps, evaluate the suitable blood perfusion and the viability of the flaps avoiding secondary postoperative complications secondary to vascular supply problems.
- ▶ Anatomical studies of the variability of perforator vessels in the following regions: internal mammary artery, inferior epigastric system and internal superficial circumflex system.
- ▶ Study of the perioperative and postoperative factors that influence on the viability of the microsurgical free flaps.
- ▶ Research by indocyanine green angiography of the concept of vascular blood balance after the dissection of a perforator flap.
- ▶ Research by indocyanine green angiography of the relationship between the different anatomical patterns of lymphatic vessels in the upper extremity and its readiness to develop lymphedema in the affected breast cancer patients.
- ▶ Feasibility of the research in animal models of major surgical and nonsurgical techniques existing today to treat secondary lymphatic insufficiency: fat transplant of autologous stem cells, stem cell transplantation autologous from bone marrow, lymphatic-venous anastomosis, free flap of vascularised autologous lymph nodes.
- ▶ Linfangiogenesis studies in a comparative animal model between transplantation of adipose tissue stem cells vs bone marrow stem cells, lymphatic-venous anastomoses and transplantation of vascularized lymph nodes for lymphoedema treatment.
- ▶ Research in an experimental animal model on lymphangiogenesis and regeneration of the lymphatic system after a model of obstructive lymphoedema.
- ▶ Imaging studies using lymphography and indocyanine green, as well as lympho-magnetic resonance techniques.

Challenges

- ▶ Improvement of the preoperative planning of perforator flaps with the help of advances in imaging techniques and knowledge of anatomy.
- ▶ Consolidate and optimize preoperative management techniques for locating the most suitable perforating vessels for each microsurgical flap.
- ▶ Minimize intra- and postoperative complications in perforator flaps using new imaging techniques to visualize intraoperatively patterns of vascularisation of the flaps and vascular blood supply dominance.
- ▶ Lymphedema prevention in those patients with mastectomy in which we perform searching procedures of sentinel node and/or axillaries lymph node dissections using new techniques of surgical treatment for this disease (lymphatic venous anastomosis, transfer of vascularised lymph nodes).
- ▶ Identification by indocyanine green angiography for those patients affected with breast cancer with a major risk of developing secondary lymphedema.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Advances in imaging techniques and therapy in muscle dystrophies: evaluation and treatment of the fibrosis. FISS. Clinical trial in conjunction with the Department of Neurology.

External Collaborations

- ▶ Reporting clinical outcomes of prepectoral Braxton-assisted breast reconstruction: A 2-year Retrospective European Audit.
- ▶ A Double-Blind, Placebo-Controlled, Multicenter Study with an open-label extension to evaluate the efficacy and safety of SRP-4045 and SRP-4053 in Patients with Duchenne Muscular Dystrophy sponsored by Sarepta Therapeutics, Inc.

Active Grants

- ▶ Josep Jaume Masia Ayala. Modelo experimental comparativo entre trasplante de células madre de tejido adiposo/médula ósea, anastomosis linfaticovenosas, trasplante de ganglios vascularizados en el linfedema. PI13/02793. Instituto de Salud Carlos III. Duration: 2014-2018. 29,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Theses

- ▶ Manuel Fernández Garrido. Análisis descriptivo del pedículo vascular del colgajo SCIP. Constancia anatómica mediante estudio radiológico y ecográfico. Diseño y aplicación clínica. Universitat Autònoma de Barcelona. Directors: Jaume Masia Ayala, Xavier León Vintro. Date of defense: 27/07/2017.

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Scientific Production

Cheng M.-H., Koshima I., Chang D.W., Masia J., The 5th World Symposium for Lymphedema Surgery (2017) J SURG ONCOL, 115 (1), 5.

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Loh C.Y.Y., Wu J.C.-W., Nguyen A., Dayan J., Smith M., Masia J., Chang D., Koshima I., Cheng M.-H., The 5th world symposium for lymphedema surgery—Recent updates in lymphedema surgery and setting up of a global knowledge exchange platform (2017) J SURG ONCOL, 115 (1), 6-12.

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Miranda Garces M., Pons G., Mirapeix R., Masia J., Intratissue lymphovenous communications in the mechanism of action of vascularized lymph node transfer (2017) J SURG ONCOL, 115 (1), 27-31.

IF: 2.8860

Tang J.B., Landin L., Cavadas P.C., Thione A., Chen J., Pons G., Masia J., Unique Techniques or Approaches in Microvascular and Microlymphatic Surgery (2017) CLIN PLAST SURG, 44 (2), 403-414.

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Vidya R., Masia J., Cawthorn S., Berna G., Bozza F., Gardetto A., Kolacinska A., Dell'Antonia F., Tiengo C., Bassetto F., Caputo G.G., Governa M., Evaluation of the effectiveness of the prepectoral breast reconstruction with Braxon dermal matrix: First multicenter European report on 100 cases (2017) BREAST J, 23 (6), 670-676.

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Other Publications

- ▶ Garcia-Campo MJ, Quiles-Carrillo L, Masia J, Reig-Pérez MJ, Montanes N, Balart R. Environmentally Friendly Compatibilizers from Soybean Oil for Ternary Blends of Poly(lactic acid)-PLA, Poly(ε-caprolactone)-PCL and Poly(3-hydroxybutyrate)-PHB. Materials (Basel). 2017 Nov 22;10(11).

Palliative Care



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Main Lines of Research

- ▶ Symptom evaluation and control: pain, dyspnoea, cognitive failure, complex situations.
- ▶ End-of-life ethical issues: sedation, expression of a desire for death, euthanasia.
- ▶ Psychosocial care for patients and families: adaptation to the terminal situation, grief, spiritual needs.
- ▶ Training in palliative care: training needs, outcomes.
- ▶ Art therapy.

Challenges

- ▶ Psychosocial care for patients and families.
- ▶ Counselling and hospital sensitization.
- ▶ Quality evaluation and control.
- ▶ Symptom evaluation and control.
- ▶ Integrated care: analysis and care of end-of-life emotional, social and spiritual dimensions and adequate ethical reflection in decision making.

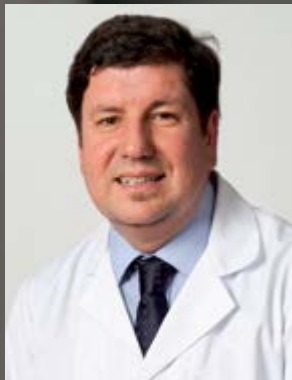
Grants Awarded in 2017

- ▶ Oscar Fariñas Balaguer. Ampliació criteri edat al-loempelts tendinosos. CONVENI BST 2017-1. Banc de Sang i Teixits. Duration: 2017-2018. 27,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.



Andrology



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Main Lines of Research

- ▶ Genetics applied to male infertility.
- ▶ Male fertility preservation in oncological patients.
- ▶ Optimisation of preimplantation genetics diagnosis and in vitro fertilization techniques.
- ▶ Clinical research into new surgical procedures, drugs and medical devices applied to andrological diseases and conditions (male sexual dysfunction, hypogonadism, Peyronie disease, premature ejaculation, sexually transmitted diseases).

Challenges

Our multidisciplinary team of professionals develops translational research in the field of diagnosis and treatment of andrological disorders. To improve our knowledge and thereby improve healthcare for patients, we seek to continue active projects, develop new lines of investigation, increase the number of interna-

tional publications, train professionals and enhance collaboration with hospital and university groups inside and outside the IIB Sant Pau.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Nephrology Group.
- ▶ Urology Group.
- ▶ Gynecological Group.

External Collaborations

National

- ▶ Medical and Molecular Genetics Centre (RI)-IDIBELL: genetics applied to infertility.
- ▶ Cellular Biology and Medical Genetics Unit-UAB: preimplantation genetic diagnosis techniques.

International

- ▶ Mario Serio Experimental and Clinical Biomedical Sciences Unit, University of Florence: genetics applied to male infertility.
- ▶ Reproductive Genomics Laboratory, Human Genetics Centre (KU Leuven): genetics applied to male infertility.
- ▶ New England Research Institutes: hypogonadism.
- ▶ European Academy of Andrology: radiology examinations of the male genital tract.

Private

- ▶ Participation in clinical studies including clinical trials and postauthorization studies sponsored by national and international pharmaceutical companies.

Active Grants

- ▶ Csilla Gabriella Krausz . Estudio genético y genómico de subtipos específicos de azospermia secretora: desarrollo de nuevas herramientas diagnósticas y pronósticas. PI14/01250. Instituto de Salud Carlos III. Duration: 2015-2018. 86,500.00 €.
- ▶ Krausz C. Evaluación del efecto de la terapia citostática sobre el genoma y el epigenoma del gameto masculino. Fundación Merck Salud: "Ayudas Merck de Investigación 2017 en el área de Investigación

Clínica en Fertilidad. Duration: 2017-2020. 30,000 €.

- ▶ Fundació Puigvert. Programa para el fomento de patentes y modelos de utilidad en el exterior. FPE-0701-00-20163. Oficina Española de Patentes y Marcas. Duration: 2017. 1,057.83 €.

Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2017

- ▶ Csilla Gabriella Krausz . Estudio genético y genómico en pacientes infértiles y pacientes con tumor testicular de células germinales: desarrollo de nuevas herramientas para un diagnóstico precoz. PI17/01822. Instituto de Salud Carlos III. Duration: 2018-2020. 102,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Vinay, J.; Sarquella, J.; Sánchez, J.; Algaba, F.; Gallegos, I.; Rojas-Cruz, C.; Palma, C. Sub-albuginean adipocyte accumulation is associated with erectile dysfunction: First clinical evidence and pathophysiological implications. Best poster in section "Last news in future treatments of erectile dysfunction". 31th EAU Annual Congress. Munich (Germany), 11-15 March.

Theses

- ▶ Olga López Rodrigo. Caracterización biológica y molecular de síndromes teratozoospermicos causantes de la infertilidad masculina. Universidad de Barcelona. Directors: Ll. Bassas, R. Oliva. Date of defense: 21/09/2017.
- ▶ Antoni Riera-Escamilla. Genetic investigation in non-obstructive azoospermia: from the X chromosome to the whole exome, Università Degli Studi di Firenze. Director: Csilla Krausz. Date of defense: 10/03/2017.

Transfer Products

- ▶ Diabetes and sexuality. Patient session. Director: MF Peraza with the collaboration of C. Regordosa (Catalonian Diabetic Patient Association). Barcelona, 16th November.

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Scientific Production

Bartolome E., Bozzo B., Sevilla P., Martinez-Pasarell O., Puig T., Granados X., ABS 3D printed solutions for cryogenic applications (2017) CRYOGENICS, 82, 30-37.

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Casamonti E., Vinci S., Serra E., Fino M.G., Brillì S., Lotti F., Maggi M., Coccia M.E., Forti G., Krausz C., Short-term FSH treatment and sperm maturation: a prospective study in idiopathic infertile men (2017) ANDROLOGY-US, 5 (3), 414-422.

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Cosentino M., Kanashiro A., Vives A., Sánchez J., Peraza MF., Moreno D., Perona J., De Marco V., Ruiz-Castañe E., Sarquella, J. Surgical treatment of Peyronie's disease with small intestinal submucosa graft patch. (2017) INT J IMPOT RES 28, 3, 106-109.

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Espinós JJ., Polo A., Sanchez Henández J., Bordas JR., Parés P., Martínez-Pasarell O., Calaf J. Weight decrease improves live birth rates in obese women undergoing IVF: A pilot study. (2017) REPROD BIOMEDD ONLINE 35 4 417-424.

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Krausz C., Casamonti E., Spermatogenic failure and the Y chromosome (2017) HUM GENET, 136 (5), 637-655.

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Romero Otero J., Rojas C., García Alonso F., García Gómez B., Sarquella J., Medina J., Ruiz-Castañe E., Rodriguez-Antolin A. Comparison of the patient and partner satisfaction with 700CX and titan penile prostheses. (2017) ASIAN J ANDROL 19, 3, 321-325.

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Rosen R.C., Wu F., Behre H.M., Porst H., Meuleman E.J.H., Maggi M., Romero-Otero J., Martinez-Salamanca J.I., Jones T.H., Debruyne F.M.J., Kurth K.-H., Hackett G.I., Quinton R., Stroberg P., Reisman Y., Pescatori E.S., Morales A., Bassas L., Cruz N., Cunningham G.R., Wheaton O.A., Quality of Life and Sexual Function Benefits of Long-Term Testosterone Treatment: Longitudinal Results From the Registry of Hypogonadism in Men (RHYME) (2017) J SEX MED, 14 (9), 1104-1115.

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Ruiz-Olvera S.F., Rajmil O., Sánchez-Curbelo J. R., Vinay J., Rodriguez-Espinosa J., Ruiz-Castañe E. Association of serum testos-

terone levels and testicular volume in adult patients. (2017) ANDROLOGY.

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Vaszko T., Papp J., Krausz C., Casamonti E., Geczi, L., Olah E. Discrimination of deletion and duplication subtypes of the deleted in azoospermia gene family in the context of frequent interloci gene conversion. (2017) PLOS ONE 11, 10.

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Vinay J., Sarquella J., Sanchez J., Algaba F., Gallegos I., Ruiz-Castane E., Palma C., Adipocyte accumulation in corpus cavernosum: First clinical evidence and pathophysiological implications in erectile dysfunction Acumulación de adipocitos en el cuerpo cavernoso: primera evidencia clínica e implicaciones fisiopatológicas en la disfunción eréctil (2017) ACTAS UROL ESP, 41 (2), 97-102.

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Vives A., Vázquez A., Rajmil O., Cosentino M. Urethral condylomas in men: experience in 123 patients without previous treatment. (2017) INT J STD & AIDS 27, 1, 39-43.

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Other Publications

- ▶ García-Cruz E., Monguet JM., Marrre D., González M., Peraza MF., Sánchez C., Susi C., Trejo A., Alcaraz A. A Multidisciplinary Approach to Sexual Behavior Profiles: The SEX360 P., Model. (2017) SEXUALITY & CULTURE 21(4): 941-52.

Urology



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Members

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Millán Rodríguez, Félix	F. Puigvert
Palou Redorta, Juan	F. Puigvert
Rodríguez Faba, Óscar	F. Puigvert

Main Lines of Research

- ▶ Tissue engineering applied to urological oncology and congenital urogenital malformations.
- ▶ Genetic and immunohistochemistry analyses applied to urological cancers (diagnostic and prognostic biomarkers in urine, blood and tissues).
- ▶ Clinical research of new surgical procedures, drugs and medical device products applied to urological oncology, kidney transplantation and benign urogenital pathology (e.g. incontinence, benign hyperplasia of the prostate, lithiasis).

Challenges

Translational research in the field of diagnosis and treatment of urological disorders. We seek to continue active projects, develop new lines of investigation, increase the number of international publications, train professionals and increase collaboration with hospital and university groups to improve our knowledge about kidney disorders and thereby improve healthcare for patients.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Nephrology: genetic predisposition to prostate cancer.
- ▶ Clinical Epidemiology and Healthcare: epidemiological studies of urological cancers.
- ▶ Clinical Oncology: detection of prognosis biomarkers for drug response in kidney cancer.

External Collaborations

National academic

- ▶ IDIBELL Molecular Genetics Laboratory: cystine lithiasis.
- ▶ CNIO: biomarkers in bladder cancer.
- ▶ National scientific societies (Spanish Urology Association, etc): clinical studies.

International academic

- ▶ Aarhus University Molecular Genetics Department: bladder cancer.
- ▶ International Robotic Cystectomy Consortium: robotic cystectomy.
- ▶ International Renal Cell Carcinoma-Venous Thrombus Consortium: renal-cava thrombus in kidney cancer.

Private national and international collaborations

- ▶ Clinical trials and postauthorization studies promoted by national and international pharmaceutical companies.

Active Grants

- ▶ Ana Bujons Tur. Autologous enriched stem cell fat injection for the treatment of abdominal defects in patients with Exstrophy-Epispadias Complex. "Pedro Cifuentes Diaz" Research Grant. FIU. Duration: 2016-2017. 18,000 €.

Note: Total amount granted to PI. It does not include indirect costs.

Books or chapters with ISBN

- ▶ Gaya JM, Emiliani E. Breda A. What is best port placement for urologic laparoscopy? In: Rane A., Turna B., Autorino R., Rassweiler JJ (Eds.). Practical Tips in Urology. Ed. Springer-Verlag London Limited, pages: 559-566. ISBN: 978-1-4471-4347-5.

Awards

- ▶ Best Poster: Breda A., Territo A., Sanguedolce F., Manfredi M., Basile G., Gaya JM., Algaba F., Palou J., Villavicencio H. Endomicroscopia Confocal (EC) en tumor urotelial de tracto urinario superior (TMTUS). Catalanian Society of Urology Congress. Barcelona, 30 Mars-1rst April.
- ▶ Best Case Award: Sabiote L., Mosquera M., Flores J., Català V., Emiliani F., Rousaud F., Sánchez-Martin F., Angerri O., Millan F., Villavicencio H. Litiasis ureteral en ectopia renal cruzada con fusión. Catalanian Society of Urology Congress. Barcelona, 30 Mars-1rst April.
- ▶ Joaquin Albarran 2nd Award to Best Poster: Breda A., Territo A., Gausa L., Manfredi M., Domenech F., Ponce De León X., Rodríguez Faba O., Gaya JM., Tu cu V., Decaestecker K., Stockle M., Fornara P., Olsburg J., Siena G., Doumerc N., Alcaraz A., Guirado LL., Facundo C., Villavicencio H. Transplante renal robotico: Resultados después de 1 año. Spanish Association of Urology- FIU Congress. Sevilla, 7-10 June.
- ▶ Best Poster. Breda A., Territo A., Manfredi M., Guttilla A., Quaresima L., Gaya J., Algaba F., Palou J., Villavicencio H. Confocal laser endomicroscopy in upper tract urothelial cancer (UTUC). American Urological Association Congress. Boston (Massachusetts-USA), 12-16 May.

Transfer Products

- ▶ "What should we know about prostate cancer. Patient Session". Director: H. Villavicencio. Barcelona, 25 May.

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Scientific Production

Angerri O., López JM., Sánchez-Martín F., Millán F., Rosales, A; Villavicencio H. Simple laparoscopic nephrectomy in stone disease: not always simple. J ENDOUROL 2017, 30(10): 1095-1098.

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Breda A., Castellán P., Freitas RA., Schwartzmann I., Alvarez-Ossorio JL., Amon JH., Bellido JA., Ramos E., Rengifo D., Peña A., Villavicencio H. Renal and adrenal mini laparoscopy: a prospective multicentric study. UROLOGY 2017, 92(6): 44-50.

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Breda A., Emiliani E., Millán F., Scoffone C., Knoll T., Osther P.J.S., Liatsikos E. The new concept of ureteral access sheath with guide-wire disengagement: one wire does it all. WORLD J UROL 2017, 34(4): 603-606.

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Breda A., Gausa LL., Territo A., López JM., Rodríguez Faba O., Caffaratti J., Ponce De León J., Guirado LL., Villavicencio H. Robotic-assisted kidney transplantation: our first case. WORLD J UROL 2017, 34(3): 443-447.

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Breda A., Territo A., López JM. Benefits and risks of ureteral access sheaths for retrograde renal access. CURR OPIN UROL 2017, 26(1): 70-75.

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Breda A., Territo A. Virtual reality simulators for robot-assisted surgery. EUR UROL 2017, 69(6): 1081-1082.

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Breda A., Territo A., Gausa LL., Rodríguez Faba O., Caffaratti J., Ponce de León X., Guirado LL., Facundo C., Guazzeri M., Guttilla A., Villavicencio H. Robotic kidney transplantation: one year after the beginning. WORLD J UROL 2017, 35(10): 1507-1515.

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Bujons A., Lopategui DM., Rodríguez N., Centeno C., Caffaratti J., Villavicencio H. Quality of life in female patients with bladder exstrophy-epispadias complex: long-term follow-up. J PEDIATR UROL 2017, 12(4): 210 E-210 6.

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Bujons A., Millán F., Centeno C., Emiliani E., Sánchez-Martin F., Angerri O., Caffaratti J., Villavicencio H. Mini-percutaneous nephrolithotomy with high-power holmium yag laser in pediatric patients with staghorn and complex calculi. J PEDIATR UROL 2017, 12(4): 253 1-253 5.

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Carpio Villanueva J., Rosales Bordes A., Ponce de León Roca J., Montlleo Gonzalez M., Caparros Sariol J., Villavicencio Mavrich H., Laparoscopic adenectomy: 10 years of experience (2017) ACTAS UROL ESP.

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Catala V., Salas D., Esquena S., Mateu S., Algaba F., Palou J., De la Torre P. Questions and answers on prostate multiparameter magnetic resonance imaging: Everything a urologist should know. (2016) ACTAS UROL ESP 40, 6, 339-352.

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Cindolo L., Castellán P., Scoffone C., Cracco C., Celia A., Paccaduscio A., Schips L., Proietti S., Breda A., Giusti G. Mortality and flexible ureteroscopy: analysis of six cases. WORLD J UROL 2017, 34(3): 305-310.

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Dyrskjot L., Reinert T., Algaba F., Christensen E., Nieboer D., Hermann G.G., Mogensen K., Beukers W., Marquez M., Segersten U., Hoyer S., Ulhoi B.P., Hartmann A., Stohr R., Wach S., Nawroth R., Schwamborn K., Tulic C., Simic T., Junker K., Harving N., Petersen A.C., Jensen J.B., Keck B., Grimm M.-O., Horstmann M., Maurer T., Steyerberg E.W., Zwarthoff E.C., Real F.X., Malats N., Malmstrom P.-U., Orntoft T.F. Prognostic Impact of a 12-gene Progression Score in Non-muscle-invasive Bladder Cancer: A Prospective Multicentre Validation Study (2017) EUR UROL, 72 (3), 461-469.

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Emiliani E., Gavrilov P., Mayordomo O., Salvador J., Palou J., Rosales A., Villavicencio H., Laparoscopic management of ureteroileal stenosis: Long term follow up Manejo laparoscópico de la estenosis uretero-ileal con

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Garat JM., Scivoli F., Bujons A. Novel plicating "wrap" technique for treating anterior urethral ballooning. UROLOGY 2017, 101: 119-122.

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Gomis C., Sarquella J., Arce Y., Vinay J.I., Testicular intraepithelial neoplasia and infertility: Azoospermia associated with bilateral testicular intraepithelial neoplasia Neoplasia intratubular testicular e infertilidad: azoospermia asociada a neoplasia intratubular testicular bilateral (2017) REV INT ANDROL, 15 (4), 165-168.

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IF: 1.260

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IF: 0.465

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Urology

*TIF: 313.184 **MIF: 4.3498

Scientific Production

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IF: 17.581

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IF: 1.260

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IF: 2.981



Radiation Oncology



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Main Lines of Research

Research is partially conducted on the premises of the Translational Research Laboratory of the Catalan Oncology Institute (ICO)-Bellvitge Biomedical Research Institute (IDIBELL) under a framework agreement between Sant Pau and the ICO.

Modulation of Radiosensitivity

- ▶ Modulation of radiosensitivity by SRC protein inhibitors in combination with anti-EGFR.
- ▶ Modulation of radiosensitivity by HMG-CoA reductase inhibitors in combination with anti-EGFR.

SBRT for Patients with Lung Cancer and with Oligometastases

- ▶ Stereotactic body radiotherapy techniques in radical treatment of patients with early-stage non-surgical lung cancer and selected patients with non-surgical oligometastases.

Radiation Therapy Based on PET/CT Functional Imaging of Tumours

- ▶ Implementation of planning techniques for radiotherapy treatment with PET/CT for chest locations and head and neck tumours squamous cell tumours.
- ▶ Image-guided radiotherapy and respiratory movement control.
- ▶ Salvage brachytherapy for local recurrence after external beam radiotherapy in prostate cancer.
- ▶ Hypofractionated intensity-modulated GRT in prostate cancer.

Challenges

- ▶ Establish relatively radioresistant cell lines compared with the parental cells from which they derive (by clonal selection).
- ▶ Determine the resistant phenotype in cultures and xenografts.
- ▶ Determine molecular radioresistance.
- ▶ Evaluate the effect on carcinomas of SRC and HMG-CoA reductase inhibitors in combination with anti-EGFR.
- ▶ Explore signal transduction changes in the EGFR-MAPK pathway and SRC-EGFR/SRC-STAT3 cooperation induced by SRC and HMG-CoA reductase inhibitors.

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Scientific Production

Balana C., Capellades J., Pineda E., Estival A., Puig J., Domenech S., Verger E., Pujol T., Martinez-Garcia M., Oleaga L., Velarde J., Mesia C., Fuentes R., Marruecos J., Del Barco S., Villa S., Carrato C., Gallego O., Gil-Gil M., Craven-Bartle J., Alameda F., Pseudoprogession as an adverse event of glioblastoma therapy (2017)

CANCER MED-US, 6 (12), 2858-2866.

IF: 3.202

Montes A., Fernandez A., Camacho V., de Quintana C., Gallego O., Craven-Bartle J., Lopez D., Molet J., Gomez-Anson B., Carrio I., The usefulness of 18F-fluorocholine PET/CT in the detection of recurrence of central nervous

system primary neoplasms Valor de la PET/TC cerebral con 18F-fluorocolina en la detección de recurrencias de neoplasias primarias del sistema nervioso central (2017) REV ESP MED NUCL IMA, 36 (4), 227-232.

IF: 1.202

*Total Impact Factor **Mean Impact Factor



Locomotor System Research



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Pablo Eduardo FGS
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Luis Gerardo FGS
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Proubasta Renart, Ignacio FGS
Sarasquete, Juan FGS
Soria Villegas, Laura FGS
Vilà Canet, Gemma FGS
Valera Pertegàs, Màrius FGS
Velázquez Fragosó,
Juan José FGS

Main Lines of Research

Antiresorptives in Orthopedic and Trauma Surgery

- ▶ Effect of zoledronic acid (Aclasta) on peri-prosthetic bone mineral density in patients undergoing total knee arthroplasty. Study approved by the HSCSP ethics committee and authorized by the Spanish Medicines and Health Products Agency (AEMPS) for the out-of-context indication of Aclasta.

Knee

Haemostasis

- ▶ Blood loss control using tranexamic acid in primary prosthetic and knee revision surgery.
- ▶ Retrospective study of revision knee arthroplasty to compare the effects of intravenous tranexamic acid and normal haemostasis.
- ▶ Clinical trial comparing outcomes for intravenous tranexamic acid with fibrin glue (Tissucol) and normal haemostasis in primary knee prosthetic surgery.
- ▶ Observational study of blood loss in redon drainage over time in peritrochanteric hip fractures.
- ▶ Randomized multicenter parallel clinical trial in antiaggregated patients with proximal femur fracture that evaluates a strategy to shorten the time to surgery. AFFECT study.

Cartilage

- ▶ Regeneration of cartilage defects using tissue engineering and a matrix seeded with characterized allogeneic chondrocytes.

Cartilage

- ▶ Prospective study on fresh osteochondral allograft transplantation. CT, MRI and clinical outcomes.

Patella

- ▶ Prospective comparative study on patellar fractures. Metallic wiring versus suture fixation.

Meniscus

- ▶ Effect of normal and growth-factor-enriched cell cultures on the meniscal collagen network and glycosaminoglycan expression.
- ▶ In vitro experimental study of the feasibility of a polyurethane replacement meniscus pre-seeded with stem cells.
- ▶ Evolution of allogeneic meniscal transplants and relationship with extrusion.

Hip

- ▶ Coxarthrosis in young adults: etiological study of biomechanical factors.
- ▶ Biomechanics of coxarthrosis in young adults: finite element study.
- ▶ Influence of hip anatomy in early development of coxarthrosis: controlled, prospective radiographic study.
- ▶ Osteosynthesis with cannulated screws in non-displaced femoral neck fractures in elderly patients.
- ▶ Randomized clinical trial for capsular and rotator muscles suture in cemented bipolar hemiarthroplasties in patients with femur fracture.

Foot and Ankle

- ▶ Prospective randomized clinical trial for the surgical treatment of Achilles tendon ruptures: repair with mini-invasive technique vs open tenorrhaphy.

Upper Limb

- ▶ Anatomical study of stabilizing ligaments in the trapeziometacarpal joint: the role played by dorsoradial and anterior oblique ligaments in Bennett and Rolando fractures.
- ▶ Surgical treatment of middle-third clavicle fractures in high-energy trauma in young patients.
- ▶ Retrospective study of the use of vascularized bone graft using the 1,2-ICSR artery in the revascularization of proximal pole necrosis in scaphoid pseudarthrosis.

Awards

- ▶ Preize for the poster C. Lamas, H. Haro, I. Proubasta, I. Gich. Estudio comparativo de tres técnicas de reparación de la ruptura aguda del ligamento colateral cubital del pulgar. XXIII Congreso de la Sociedad Española de Cirugía de la Mano (SECMA) and IV Congreso conjunto de la Sociedad Portuguesa de Cirugía de la Mano. Marbella 5-7 April 2017.

Grants
Awarded in
2017

- ▶ Pablo Eduardo Gelber Ghertner. Preservació en fresc al-loempelts osteocondrals. Conveni BST 2017-2. Banc de Sang i Teixits. Duration: 2017-2018. 44,500.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

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Scientific
Production

Gomez C.L., Gondolbeu A.M., Marti R.M., Renart I.P., Perez M.L., The role of the carpo-metacarpal ligaments of the thumb in stability and the development of osteoarthritis lesions : An anatomical study (2017) ACTA ORTHOP BELG, 83 (3), 449-457.

IF: 0.542

Gonzalez-Osuna A., Videla S., Canovas E., Urrutia G., Rojas S., Lopez R., Murat J., Aguilera X., HESTAT: Study protocol for a phase II/III, randomized, placebo-controlled, single blind study to evaluate the new hemostatic agent TT-173 in total knee arthroplasty (2017) CONTEMP CLIN TRIALS, 61, 16-22.

IF: 2.658

Lizano-Diez X., Gines-Cespedosa A., Alentorn-Geli E., Perez-Prieto D., Gonzalez-Luceña G., Gamba C., de Zabala S., Solano-Lopez A., Rigol-Ramon P., Corticosteroid Injection for the Treatment of Morton's Neuroma: A Prospective, Double-Blinded, Randomized, Placebo-Controlled Trial (2017) FOOT ANKLE INT, 38 (9), 944-951.

IF: 2.653

Millan-Billi A., Gomez-Masdeu M., Ramirez-Bermejo E., Ibanez M., Gelber P.E., What is the most reproducible classification system to assess tibial plateau fractures? (2017) INT ORTHOP, 41 (6), 1251-1256.

IF: 2.377

Monllau J.C., Masferrer-Pino A., Ginovart G., Perez-Prieto D., Gelber P.E., Sanchis-Alfonso V., Clinical and radiological outcomes after a quasi-anatomical reconstruction of medial patellofemoral ligament with gracilis tendon autograft (2017) KNEE SURG SPORT TR A, 25 (8), 2453-2459.

IF: 3.210

Natera L., Valera M., Gomez E.M., Ibanez N., Crusi X., Sancho R., Survival of hydroxyapatite-coated cups: Acetabular screws involve a lower rate of revision surgery due to aseptic loosening (2017) HIP INT, 27 (2), 153-161.

IF: 1.276

Perez-Prieto D., Capurro B., Gelber P.E., Ginovart G., Reina F., Sanchis-Alfonso V., Monllau J.C., The anatomy and isometry of a qua-

si-anatomical reconstruction of the medial patellofemoral ligament (2017) KNEE SURG SPORT TR A, 25 (8), 2420-2423.

IF: 3.210

Perez-Prieto D., Portillo M.E., Gonzalez-Luceña G., Gines-Cespedosa A., Foot and ankle infections: Debridement, early fixation and rifampicin provide earlier recovery of function and quality of life (2017) FOOT ANKLE SURG.

IF: 2.653

Trigo L., Sarasquete J., Noguera L., Proubasta I., Lamas C., Radial nerve injury following elbow external fixator: report of three cases and literature review (2017) ARCH ORTHOP TRAUM SU, 137 (7), 953-957.

IF: 1.967

Other
Publications

- ▶ L. Trigo, C. Lamas, J. Sarasquete, J. De Caso, I. Proubasta. Luxación de codo con fractura ipsilateral del extremo distal del radio asociada a lesión de la arteria braquial. Una nueva entidad patológica de origen traumático. Revista Española de Cirugía Ortopédica y Traumatología 2017; 61 (3): 146.

Pain and Neurosciences



Coordinator

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Main Lines of Research

- ▶ Involvement of brain areas and release of substances in acute and chronic neuropathic pain.
- ▶ Sleep disturbance on initiating systemic opioid treatment in patients with severe chronic pain and altered sleep patterns.
- ▶ Influence epidural corticosteroids treatment by different approach on the effectiveness of the radicular pain due to herniated lumbar disc.
- ▶ Profile in terms of demographics, comorbidities, kind of pain, physical and mental status and disability of patient.
- ▶ Look for a local and non pharmacological treatment for elderly patients with pain.

Challenges

- ▶ Establish the possible differences in brain area involvement between acute and chronic pain.
- ▶ Determine the extent of chronic pain according to the involvement of different brain areas and if these alterations can improve with the relief of pain.
- ▶ Determine whether the intensity of chronic neuropathic pain assessed by the patient is correlated with the patient's psychopathology, essentially anxiety, depression and catastrophizing.
- ▶ Determine the profile of patients who would benefit from treatment with major systemic opioids in relation to night rest and establish the recommendable opioid.
- ▶ Establish the recommended opioid dose to start a treatment and how to remove them.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Psychiatry
- ▶ Anesthesiology
- ▶ Neurosurgery
- ▶ Neuroradiology

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Scientific Production

Videla S., Catala E., Ribera M.-V., Montes A., Samper D., Fuentes J., Busquets C., Characteristics and outcomes of chronic pain patients referred to hospital pain clinics: A prospective observational study (2017) MINERVA ANESTESIOLOGIA, 83 (1), 12-22.
IF: 2.693

*Total Impact Factor **Mean Impact Factor



Nursing Care Research



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Mas Dalmau, Gemma IR
Ricart Basagaña,
 Maria Teresa FGS
Roca Sarsanedas, Jaume FGS
Romero Pastor, Mónica FGS
Sillero Sillero, Amalia FGS
Valverde Bernal, Jonatan FGS
Vicente Pérez, Sílvia FGS

Main Lines of Research

- ▶ Fall prevention and analysis of fall-related factors.
- ▶ Translation and validation of care evaluation questionnaires.
- ▶ Constipation and ageing.
- ▶ Quality of life related to nursing care.
- ▶ Development and application of health science methods: qualitative and qualitative methods, text analysis and discourse analysis.
- ▶ Patient satisfaction with nursing care.
- ▶ Attention to the family.
- ▶ Pain.

Challenges

- ▶ Strengthen implemented research lines and disseminate the results of active projects.
- ▶ Explore the impact of nursing care for patients, strategies for care improvement and the application of results in cure models.
- ▶ Improve the development and understanding of qualitative research in the context of the health sciences and disseminate qualitative methods and analyses of text and discourse as tools in health science research.
- ▶ Create the synergies necessary to consolidate the group's activities.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Collaboration with the Emergency group and Cardiology group to carry out the study: Gemma Berga, Adrian Marquez, Jonatan Valverde. Impact on reperfusion time after the elaboration and dissemination of an early diagnosis algorithm for acute myocardial infarction.
- ▶ Collaboration directing the final works of residence in resident nurses of mental health and paediatrics (2017) for Gemma Mas in:
 - Maria Pilar Rodríguez de Vera Escudero (R2 Mental Health). Mindfulness in parents of children with autism".

- Cristina Bonet Otero (R2 Paediatrics). Ulcers for pressure in ICU neonates.
- Paula Pasaro Fernández (R2 Paediatrics). Sexual education in children.
- José Alberto Tomé Pérez (R2 Mental Health). Prevalence of metabolic syndrome in patients with lithium treatment.

External Collaborations

- ▶ Collaboration with Hospital del Mar Research Institute (IMIM). Improving the therapeutic relationship in nursing care through the evidence multicentric study in Catalonia psychiatry units. Queralt Cebrià Morales.

Grants Awarded in 2017

- ▶ Amalia Sillero Sillero. Impacte dels factors de l'entorn de la pràctica infermera en els resultats de les infermeres i dels pacients quirúrgics. SLT002/16/00033. Departament de Salut. Duration: 2017. 17,927.42 €.
- ▶ Adrián Márquez López. Desenvolupament i avaluació de l'impacte d'un llistat de verificació de seguretat adaptat a la cardiologia intervencionista. PR-235/17. Fundació Infermeria i Societat. Duration: 2018-2020. 4,000.00 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Adrián Márquez López. Young Talent Award in the category of Specialized Nursing Assistance. Association Catalano-Balear Nurses.
- ▶ Jonatan Valverde. How does an ischemic coronary event influence sexual activity? Award Oral communication Primary author. 38th Congress of the Spanish Association of Nursing in Cardiology (AEEC). Barcelona, 2017.
- ▶ Miriam Armora Verdú. Effectiveness of a smartphone application to major ambulatory surgery patients. Award at the III Jornades d'Infermeria to the Hospital of Santa Creu i Sant Pau. Barcelona 2017.

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Scientific Production

Mas Dalmau G., Sant Arderiu E., Enfedaque Montes M.B., Sola I., Pequeno Saco S., Alonso Coello P., Patients' and physicians' perceptions and attitudes about oral anticoagulation and atrial fibrillation: a qualitative systematic review (2017) BMC FAM PRACT, 18 (1), 1-11.

IF: 2.0320

Other Publications

- ▶ Berga Congost G, Valverde Bernal J, Márquez López A, Garcia Picart J. Factores clínicos predictores de retraso en la actuación del Código Infarto. ENFER CARDIOL. 2017; 71:63-71.
- ▶ Roca Sarsanedas J, Soler Candelas P, Martínez Suñé JM, Guerrero Moreno N, Rodríguez Lacabra D, Moreno Hernández M. Revisión de la seguridad en la administración del contraste yodado por vía endovenosa para los procedimientos de Tomografía Computerizada. REV. SOC. ESP. ENF. RADIOL. 2017; 14(3): 83-87.

Reproductive Health



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Rams Llop, Noelia FGS

Main Lines of Research

- ▶ Qualitative study of foetal motility by means of 2D ultrasound in fetuses with spinal muscular atrophy.
- ▶ Value of foetal nuchal translucency as a marker of neuromuscular diseases and other monogenic diseases.
- ▶ Usefulness of Doppler ultrasound of the umbilical artery during the second trimester as a discriminator of pregnancies at high risk of poor perinatal outcomes.
- ▶ Cutoff point for foetal pyelectasis as a nephrourologic pathology discriminator.
- ▶ Value of ultrasound in the control of foetal anaemia.

Challenges

- ▶ Consolidate a line of work with Sant Pau's genetics department concerning possible early clinical manifestations detectable using 2D and 4D ultrasound in fetuses affected by genetic diseases, particularly neuromuscular disorders, given that Sant Pau is a referral centre for a particular group of rare diseases.
- ▶ Screen for chromosomal abnormalities from the ultrasound and biochemistry points of view, investigating the potential usefulness of the markers used either alone or in combination as indicators of populations at risk of placental insufficiency.
- ▶ Investigate the usefulness of new technologies such as 3D power Doppler angiography of the placenta in the diagnosis and control of certain foetal diseases.

*TIF: 22.249 **MIF: 2.781

Egan A.M., Vellinga A., Harreiter J., Simmons D., Desoye G., Corcoy R., Adelantado J.M., Devlieger R., van Assche A., Galjaard S., Damm P., Mathiesen E.R., Jensen D.M., Andersen L., Lapolla A., Dalfrà M.G., Bertolotto A., Mantaj U., Wender-Ozegowska E., Zawiejska A., Hill D., Jelsma J.G.M., Snoek F.J., Worda C., Bancher-Todesca D., van Poppel M.N.M., Kautzky-Willer A., Dunne F.P., Epidemiology of gestational diabetes mellitus according to IADPSG/WHO 2013 criteria among obese pregnant women in Europe (2017) *DIABETOLOGIA*, 60 (10), 1913-1921.

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Espinos J.J., Polo A., Sanchez-Hernandez J., Bordas R., Pares P., Martinez O., Calaf J., Weight decrease improves live birth rates in obese women undergoing IVF: a pilot study (2017) *REPROD BIOMED ONLINE*, 35 (4), 417-424.

IF: 2.967

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IF: 1.809

Monroy G., Tundidor D., Orellana I., Garcia-Patterson A., Adelantado J.M., Corcoy R., Antenatal oral glucose tolerance test in women with gestational diabetes mellitus: Fasting plasma glucose is the best predictor of both large for-gestational-age newborns and postpartum glucose tolerance (2017) *MINERVA ENDOCRINOL*, 42 (4), 311-317.

IF: 1.260

Pascual A., Guerriero S., Rams N., Juez L., Ajossa S., Graupera B., Hereter L., Cappai A., Pero M., Perniciano M., Errasti T., Parra J., Solis M., Alcazar J.L., Clinical and ultrasound features of benign, borderline, and malignant invasive mucinous ovarian tumors (2017) *EUR J GYNAECOL ONCOL*, 38 (3), 382-386.

IF: 0.617

Sattler M.C., Jelsma J.G.M., Bogaerts A., Simmons D., Desoye G., Corcoy R., Adelantado J.M., Kautzky-Willer A., Harreiter J., van Ass-

che F.A., Devlieger R., Jans G., Galjaard S., Hill D., Damm P., Mathiesen E.R., Wender-Ozegowska E., Zawiejska A., Blumska K., Lapolla A., Dalfrà M.G., Bertolotto A., Dunne F., Jensen D.M., Andersen L.L.T., Snoek F.J., van Poppel M.N.M., Correlates of poor mental health in early pregnancy in obese European women (2017) *BMC PREGNANCY CHILDB*, 17 (1).

IF: 2.331

Simmons D., Devlieger R., Van Assche A., Jans G., Galjaard S., Corcoy R., Adelantado J.M., Dunne F., Desoye G., Harreiter J., Kautzky-Willer A., Damm P., Mathiesen E.R., Jensen D.M., Andersen L., Lapolla A., Dalfrà M.G., Bertolotto A., Wender-Ozegowska E., Zawiejska A., Hill D., Snoek F.J., Jelsma J.G.M., Van Poppel M.N.M., Effect of physical activity and/or healthy eating on risk: The dali lifestyle study (2017) *J CLIN ENDOCR METAB*, 102 (3), 903-913.

IF: 5.789

Translational Molecular Oncology



Coordinator

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Members

Antoñón Rodríguez,
Carlos IR- EXTERNAL
Blanco, María Laura FGS

Main Lines of Research

- ▶ In vitro and in vivo studies by genetic manipulation of putative biomarkers of prognosis in squamous cell carcinoma (SCC) in tumour progression, in radiotherapy and as potential therapeutic targets.
- ▶ Establishment of in vitro or in vivo models in leukomogenesis. Preclinical cancer models to study prognosis and alternative strategy of treatments in leukemia.

Challenges

- ▶ Evaluate survival pathways, DNA damage response and epithelial-mesenchymal transition involving the studied genes.
- ▶ Reinforce and encourage translational research in tumour progression through collaboration with internal and external research groups
- ▶ Improve a mouse model of cancer, based on implantation of human primary tumour.

Collaborations

Collaborations with other IIB Sant Pau Groups

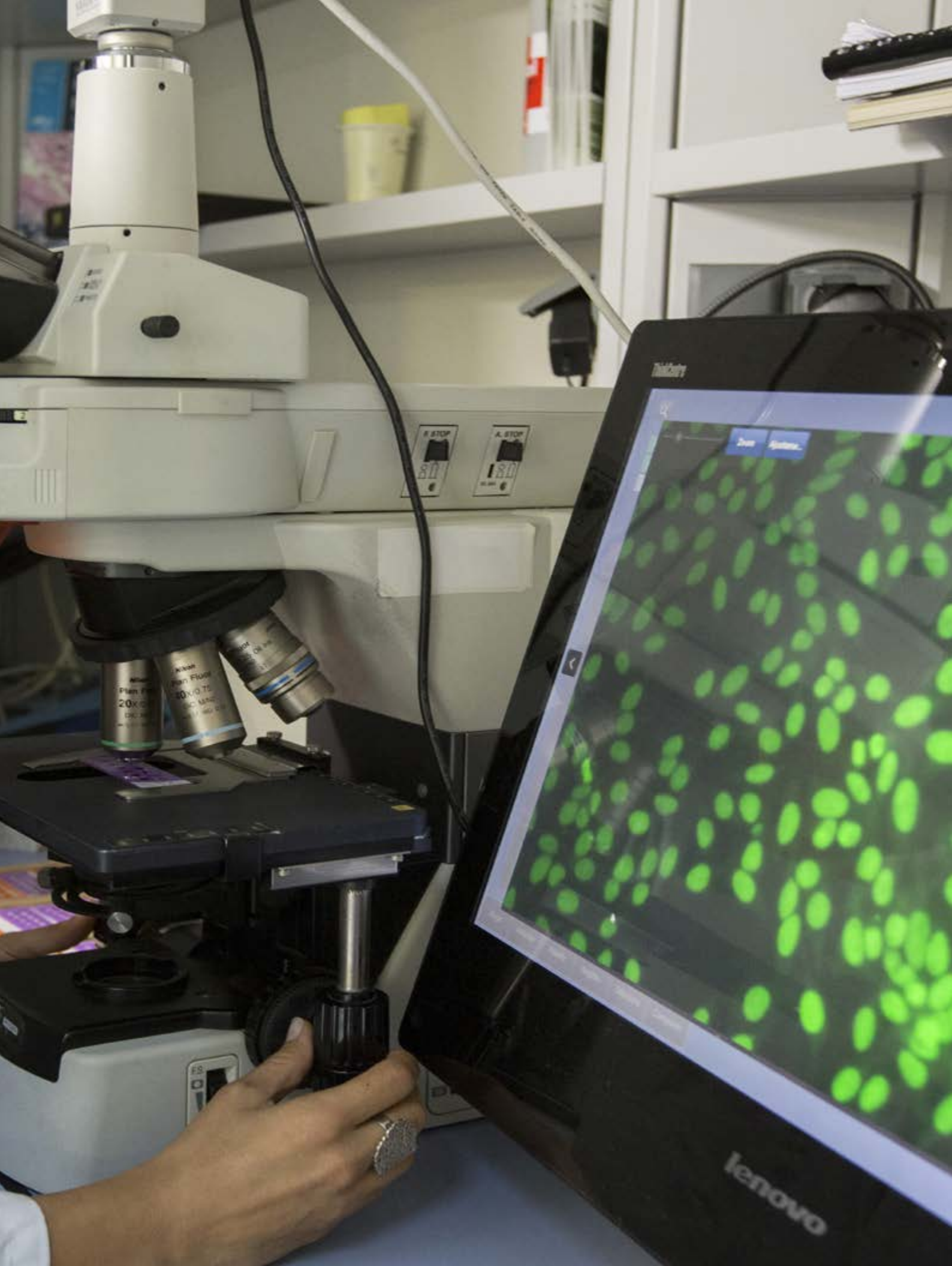
- ▶ Haematological Diagnosis (Josep Nomdedéu)
 - Establishment of "in vitro" and "in vivo" model of leukomogenesis.
 - Support grants to the Research Groups of Catalonia. Grup de Diagnòstic Hematològic. AGAUR 2017. 2017-SGR-383. Duration: 2017-2019.
- ▶ Ear, Nose and Throat Cancers (Xavier Leon): studies of HNSCC.
- ▶ Angiology, Vascular Biology and Inflammation (Mercedes Camacho): studies of HNSCC.
- ▶ Implementation of Clean Room for advance therapeutic medicament production in collaboration with IR and BST (Elena Serrano, Jordi Virgili, Jaume Kulisevsky)

Active Projects

- ▶ Josep Francesc Nomdedéu Guinot, Matilde Parreño. Instituto de Salud Carlos III. PI/00940. Duration: 2017-2019. 80,465 €.

External Collaborations

- ▶ Cell signalling and checkpoints, Faculty of Medicine, IDIBAPS (Neus Agell and Montserrat Jaumot).
- ▶ Translational Research Laboratory, Institut Català d'Oncologia (ICO) - IDIBELL (Alberto Villanueva): studies of mouse models.
- ▶ Master studies of Carlos Antoñón (Universitat de Barcelona) in the project: Designing of shRNA and production of lentiviral particles for gene infraexpression.
- ▶ PhD studies of Sabina Cisa from UAB Faculty of Medicine and Université Aix-Marseille (France)



Cardiac Surgery



Coordinator

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Members

Montiel Serrano, José FGS
Roselló Díez, Elena FGS

Main Lines of Research

- ▶ Off-pump coronary artery by-pass grafting surgery.
- ▶ Mitral repair surgery.
- ▶ Ascending aorta pathology.
- ▶ Pathogenesis of atrial fibrillation after cardiac surgery: electrophysiologic and mitochondrial analysis.
- ▶ Follow-up of sutureless aortic valve prosthesis: Perceval S.
- ▶ Follow-up of surgical check-list implementation.
- ▶ Use of erythropoietin before cardiac surgery.
- ▶ Participation in VISION study (Vascular events In Surgery patients cOhort evaluatioN)-Cardiac Surgery.

Challenges

- ▶ Consolidation as a research group in different cardiac surgery-related fields, specific sutureless valve prosthesis-perioperative myocardial infarction.
- ▶ Participation in the assessment and validation of new products employed in cardiac surgery: haemostatics, sutures, systems for sternal closure...
- ▶ Collaboration with different national and international research teams involved in our lines of study.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Leif Hove-Madsen, ICCS-CSIC.
- ▶ M. Luz Maestre Hittinger. Department of Anaesthesiology.

External Collaborations

- ▶ Elena Domínguez Garrido. Unit of Molecular Diagnosis. Fundación Rioja Salud, La Rioja, Spain.
- ▶ Elisabeth Berastegui. Department of Cardiac Surgery. Hospital Germans Trias i Pujol, Badalona, Spain.
- ▶ Mercé Cladellas Capdevila. Department of Cardiology. Hospital del Mar, Barcelona, Spain.

*TIF: 9.426 **MIF: 3.142

Scientific Production

Munoz-Guijosa C., Cortina Romero J.M., Aneurysm of both coronary buttons in a Marfan patient after Bentall-De Bono operation (2017) EUR J CARDIO-THORAC, 51 (4), 802.

IF: 3.504

Ophhof T., Remme C.A., Jorge E., Noriega F., Wiegerinck R.F.,

Tasiam A., Beekman L., Alvarez-Garcia J., Munoz-Guijosa C., Coronel R., Cinca J., Cardiac activation-repolarization patterns and ion channel expression mapping in intact isolated normal human hearts (2017) HEART RHYTHM, 14 (2), 265-272.

IF: 4.743

Rosello X., Munoz-Guijosa C., Mena E., Camprecios M., Mendez A.B., Borrás X., Padro J.M., Tricuspid valve replacement with mechanical prostheses: Short and long-term outcomes (2017) J CARDIAC SURG, 32 (9), 542-549.

IF:1.179

*Total Impact Factor **Mean Impact Factor



Inflammation and Vascular Remodelling



Coordinator

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Members

Aguiló Nuñez, Silvia ICCC
Cañes Esteve, Laia ICCC
Segalés Aguilar, Estefanía ICCC

Main Lines of Research

- ▶ Inflammation and vascular remodelling: regulation of cardiovascular homeostasis by extracellular matrix components and modifying enzymes.
- ▶ Molecular and cellular mechanisms in atherosclerosis: identification of new therapeutic targets.
- ▶ Molecular basis of abdominal aortic aneurysm (AAA): new pharmacological strategies.
- ▶ Epigenetics in cardiovascular diseases.

Challenges

- ▶ Identify new therapeutic targets, progression markers and biomarkers in atherosclerosis and AAA.
- ▶ Establish genetically modified animal models that could become useful disease models in atherosclerosis and AAA.
- ▶ Expand and consolidate the scientific staff.
- ▶ Increase regular funding through national and international calls.
- ▶ Set up new stable collaborations within IIB Sant Pau and with national and international groups and consolidate those already established.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Angiology, Vascular Biology and Inflammation (PI: Luis Vila).
- ▶ Regulation of Cardiac Rhythm and Contraction (PI: Leif Hove-Madsen).
- ▶ Atherosclerosis and Vascular Biology (PI: José Martínez González).

External Collaborations

- ▶ Alicia García Arroyo. Centro Nacional de Investigaciones Cardiovasculares (Spain)
- ▶ Nadia Mercader. University of Berna (Switzerland).
- ▶ Vicente Andrés. Centro Nacional de Investigaciones Cardiovasculares (Spain).
- ▶ E. Rodríguez-Boulan (Cornell University)

- ▶ Antonio Rodríguez-Sinovas/David García-Dorado. Hospital de la Vall d'Hebron (Spain).
- ▶ Roxana Carare (University of Southampton)
- ▶ Mercedes Salices. Universidad Autónoma de Madrid (Spain).
- ▶ Victoria Cachofeiro. Universidad Complutense de Madrid (Spain).
- ▶ Francisco Marín. Department of Cardiology, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia (Spain).
- ▶ Francisco Sánchez-Madrid. Hospital de la Princesa (Madrid, Spain).
- ▶ Anna Planas (IIBB-CSIC).

Active Grants

- ▶ María Cristina Rodríguez Sinovas. Remodelado de la matriz extracelular en el aneurisma de aorta abdominal y enfermedad arterial periférica. PI15/01016. Instituto de Salud Carlos III. Duration: 2016-2018. 156,500.00 €.
- ▶ María Cristina Rodríguez Sinovas. Remodelado de la matriz extracelular en la angio-arteriogenesis y la función vascular: impacto sobre la fisiopatología y el manejo clínico de la enfermedad arterial periférica. Sociedad Española de Cardiología. 20,000 €.

Note: Total amount granted to PI. It does not include indirect costs.

Awards

- ▶ Special mention for the communication: Martí-Pàmies I, Cañes L, Alonso J, Romero JM, Rodríguez C, Martínez-González J. NOR1 en el aneurisma de aorta abdominal (AAA): generación de un nuevo modelo animal de AAA experimental. XXX Congreso de la Sociedad Española de Aterosclerosis. Cádiz, 31 May-2 June 2017.

Theses

- ▶ Ingrid Martí Pàmies. NOR-1 en el remodelat cardiovascular: Identificación de gens diana i caracterització d'animals transgènics per a NOR-1 com a models en patologies cardiovasculars. Universitat de Barcelona. Directors: José Martínez-González, Cristina Rodríguez Sinovas. Date of defense: 10/03/2017.

Patents

- ▶ José Martínez González, Cristina Rodríguez Sinovas, Ingrid Martí Pàmies, Modelo animal para aneurisma aórtico y sus usos, P201631548. Spanish patent. 07/12/2016.

*TIF: 21.8420 **MIF: 5.4605

Scientific Production

Galan M., Varona S., Guadall A., Orriols M., Navas M., Aguiló S., De Diego A., Navarro M.A., García-Dorado D., Rodríguez-Sinovas A., Martínez-González J., Rodríguez C., Lysyl oxidase overexpression accelerates cardiac remodeling and aggravates angiotensin II-induced hypertrophy (2017) FASEB J, 31 (9), 3787-3799.

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Martinez-Revelles S., Garcia-Redondo A.B., Avendano M.S., Varona S., Palao T., Orriols M.,

Roque F.R., Fortuno A., Touyz R.M., Martínez-González J., Salaices M., Rodríguez C., Briones A.M., Lysyl Oxidase Induces Vascular Oxidative Stress and Contributes to Arterial Stiffness and Abnormal Elastin Structure in Hypertension: Role of p38MAPK (2017) ANTI-OXID REDOX SIGN, 27 (7), 379-397.

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Marti-Pamies I., Canes L., Alonso J., Rodríguez C., Martínez-González J., The nuclear receptor NOR-1/NR4A3 regulates the multi-

functional glycoprotein vitronectin in human vascular smooth muscle cells (2017) FASEB J, 31 (10), 4588-4599.

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Soto B, Gallastegi-Mozos T, Rodríguez C, Martínez-González J, Escudero JR, Vila L, Camacho M. Circulating CCL20 as a New Biomarker of Abdominal Aortic Aneurysm. Sci Rep. 2017 Dec 11;7(1):17331.

IF: 4.122

Other Publications

- ▶ Varona V, García-Redondo AB, Martínez-González J, Salaices M, Briones AM, Rodríguez C. La sobreexpresión vascular de la lisil oxidasa altera la estructura de la matriz extracelular e induce estrés oxidativo. Clin Investig Arterioscler. 2017; 29: 157-165.



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