

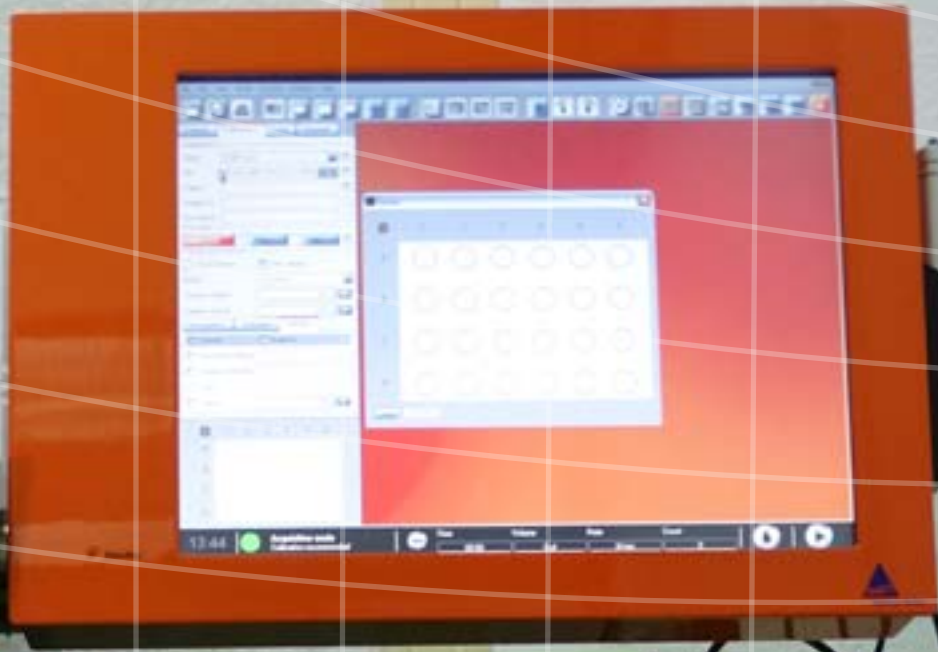
QUE:

que los sistemas involucrados en el desarrollo de un software de gestión de recursos humanos (HRM) sean capaces de gestionar la información de los empleados de una empresa de forma eficiente.

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2016

Scientific Report

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Summary

IIB Sant Pau · 2015 Scientific Report

- 04 Presentation
- 07 IIB Sant Pau Scientific Structure
- 08 Who We Are
- 09 Strategic Objectives
- 10 IIB Sant Pau Entities
- 12 Vertical Areas of Research
- 13 Transversal Areas of Research
- 13 Associated Groups
- 14 Organization Chart
- 16 Financial Data
- 18 Scientific Outcomes
- 20 Publications with an Impact Factor
- 21 Publications by Thematic Area and Quartile
- 22 Research Resources
- 23 Research Training
- 24 Doctoral Theses
- 28 Patents
- 30 Technology Transfer Agreements
- 32 Clinical Guidelines
- 36 Research Support Services
- 46 Scientific and Technical Service Platforms

52 Areas of Research

- 54 Area 1. Cardiovascular Diseases
- 94 Area 2. Genetic, Metabolic and Inflammatory Diseases
- 140 Area 3. Haematological and Oncological Diseases
- 160 Area 4. Neurological, Mental Disorders and Ageing
- 198 Area 5. Urology and Experimental Surgery
- 210 Area T1. Epidemiology, Public Health and Healthcare Services
- 240 Area T2. Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment
- 252 Associated Groups

Presentation



I am pleased to present the Annual Scientific Report of Activities of the Sant Pau Biomedical Research Institute (IIB Sant Pau) for the year 2016. The attached data are a sample of the growing progress of the activity and the valuable scientific results of our Research Groups. Notably, the scientific and economic data presented here show that we mostly fulfilled the commitments approved as guidelines in our Strategic Plan 2014-2017. As a result, we have effectively grown in quantity and quality while were able to contain the general expenditure of the Institute. Thus, despite the remarkable growth of the activities, both scientific and administrative, we hereby present a positive economic closure of the accounts of the IIB itself and its managing body, the Fundació Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau.

The reader will find in the following pages that the scientific indicators for 2016 show a clear increase in both, the number of publications (804 in 2015; 996 in 2016) and the total impact factor (3,927.43 in 2015; 4,485 in 2016) obtained with our scientific output. Importantly, there was a notable escalation in the average impact factor (3.98 in 2015; 5.00 in 2016). The activity of the area of innovation and transfer of the IIB Sant Pau has also maintained a positive tendency in the course of the year 2016. Two new patents have been requested, a new Clinical Rating Scale has been registered, and 3 transfer agreements have been signed. On the other hand, the number of patent applications granted has grown from 3 to 4 and a new technology-based company has been created departing from one of the innovation opportunities managed from the IR.

The present report also shows data that reflect the commitment of the IIB Sant Pau to the academic activity, mainly with our university partner the UAB, emphasizing a high participation of the research groups in the reading of 46 doctoral theses.

During 2016 the IIB Sant Pau has continued with the advance of actions aimed at promoting, recognizing and disseminating the activity of research groups, and encouraging the recruitment of talent. The strategic lines derived from the IIB Sant Pau have strengthened the relationship between the clinical nucleus of the Institute, the Sant Pau Hospital and the different entities integrated in our campus forming the IIB Sant Pau. Likewise, we would like to highlight the continuance during 2016 of the efforts for the institutional merge of the Catalan Institute of Cardiovascular Sciences (ICCC) into the Institut de Recerca, whose integration will be effective in the upcoming months. This integration will contribute to increase the transversality between the clinical and basic groups of the Cardiovascular Research Area of the IIB Sant Pau and will permit continuing and expanding the excellent scientific work of the research groups of the ICCC.

We thank once again all the internal agents who have made possible the presentation of these results, the researchers of our groups and their technical support staff, the staff of the technical scientific structures, the personnel in charge of the scientific and innovation management and all the administrative staff of the IIB Sant Pau. We are also very grateful to the local funding agencies both Catalan and Spanish, and to the

international funding agencies who believe in our projects, in particular the ISCIII, MINECO, PERIS, Fundació La Marató de TV3 and other private foundations that provide competitive but continuous support to our researchers. We want to make special mention of the members of the Committees of the IIB Sant Pau and particularly to the members of the External Scientific Committee who generously give us their scientific advice for the continuous improvement of the quality of our scientific results.

In spite that we are generally satisfied with the results shown here, it is important to remark that the IIB Sant Pau presents a great potential for continuous growth. This makes us optimistic about the future of our research activities that ultimately seeks to improve the health of citizens. This optimism is mainly based on the confidence of the determination and commitment of the members of the Institute, and on the values of transparency, honesty, efficiency, objectivity, scientific rigor, collaborating spirit and ethical respect.

Jaume Kulisevsky
Scientific Director IIB Sant Pau



IIB Sant Pau Scientific Structure

IIB Sant Pau has seven research areas that can be divided into two research lines: vertical, transversal and associated groups.

The vertical line has five main areas:

- Cardiovascular Diseases
- Genetic, Metabolic and Inflammatory Diseases
- Haematological and Oncological Diseases
- Neurological and Mental Disorders
- Urology and Experimental Surgery

The transversal line consists of two areas:

- Epidemiology, Public Health and Healthcare Services
- Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

Activities in the transversal line complement and support research in the vertical line.

Who We Are

The Sant Pau Biomedical Research Institute (IIB Sant Pau) conducts research into basic, clinical and epidemiological medicine and healthcare services. Ten entities cooperate to perform high-level research into new techniques and processes aimed at improving the quality of life of patients. Stakeholders include the following:

- Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation
- Hospital de la Santa Creu i Sant Pau Private Foundation
- Hospital de la Santa Creu i Sant Pau Research Institute
- Autonomous University of Barcelona - Ageing Institute
- Catalan Institute of Cardiovascular Sciences
- Puigvert Foundation
- Blood and Tissue Bank
- Iberoamerican Cochrane Centre
- Barcelona-Sardenya Primary Health Care Centre
- Public Health Agency of Barcelona

IIB Sant Pau was founded in 2009 as an association of healthcare entities carrying out their own research. Throughout 2010, IIB Sant Pau became consolidated as a research centre, while continuing to implement an accreditation process as a Healthcare Research Institute with the Spanish Ministry of Science and Innovation. This accreditation was finally obtained in early 2011. The institutions participating in IIB Sant Pau, which together form a natural alliance for historical and geographical proximity reasons, jointly implement research activities and cooperate in other scientific areas. The cooperation between these institutes represents a qualitative leap in terms of fostering translational research projects that bridge the gap between basic and clinical research.

The knowledge developed in this kind of research is channelled to society by the application of discoveries to clinical practice and to healing patients. The most tangible benefits are the application of technology to health and the scientific communication of new knowledge. This research infrastructure also generates employment and spotlights Catalonia's contributions to biomedical research. The success as a research centre ultimately translates to patient health.



Strategic Objectives

IIB Sant Pau's mission is to manage, promote, develop and communicate research into the health sciences.

To fulfil its mission, IIB Sant Pau has set itself a number of strategic objectives that guide its activities:

- Promote and consolidate relationships and knowledge exchanges between IIB Sant Pau researchers and with other public and private organizations, prioritizing the implementation of joint projects and the creation of multidisciplinary teams so as to strengthen alliances and implement translational research with a bearing on clinical activities.
- Organize courses, conferences, open days, seminars and workshops aimed at communicating scientific advances to society and at facilitating innovation and technology transfers to the productive sector.
- Organize and participate in continuous professional development, whether by developing teaching activities or arranging grant-aided stays abroad for researchers.
- Participate in developing policies aimed at coordinating biomedical research in Catalonia, while ensuring a strong presence in national and international research projects and networks of excellence.
- Acquire, maintain and optimize use of scientific and technological infrastructures and equipment.



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



Institut de Recerca

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.



Uronephrology 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

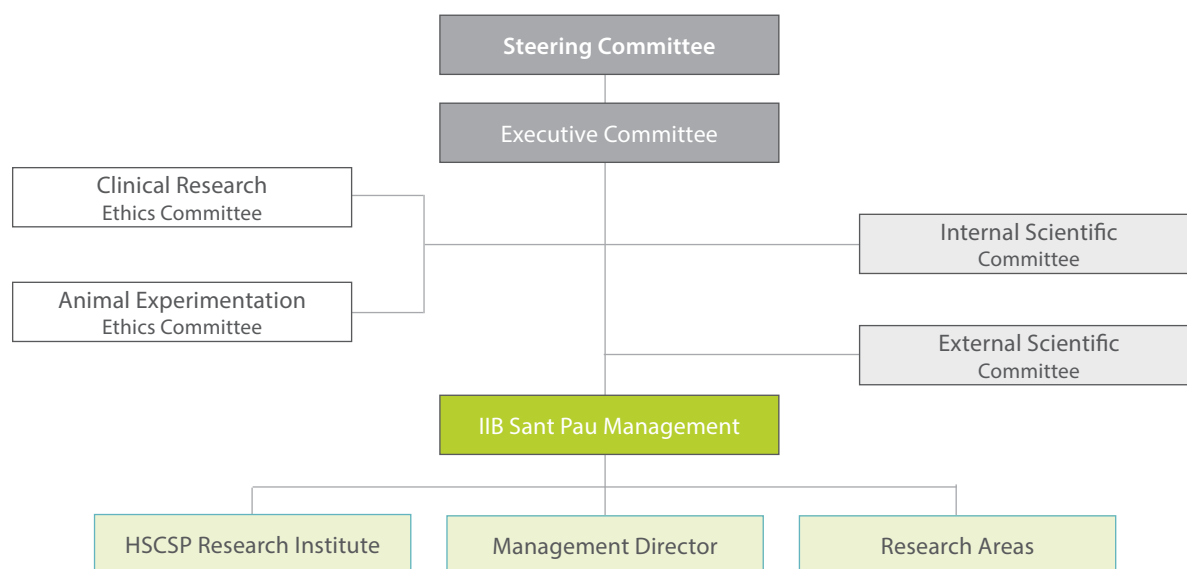
This area focuses on the structure of proteins associated with neurodegenerative diseases and inflammatory processes and on factors linked to the innate immune system. Research is also conducted in the area of osteoporosis, ageing-related macular degeneration and coagulation-cascade factors closely linked 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

[Pending to nominate]
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 Mangues
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

[Pending to nominate]
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

Uronephrology 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. Vicente Vicente
Haematology group researcher
Faculty of Internal Medicine
Murcia General University Hospital (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)

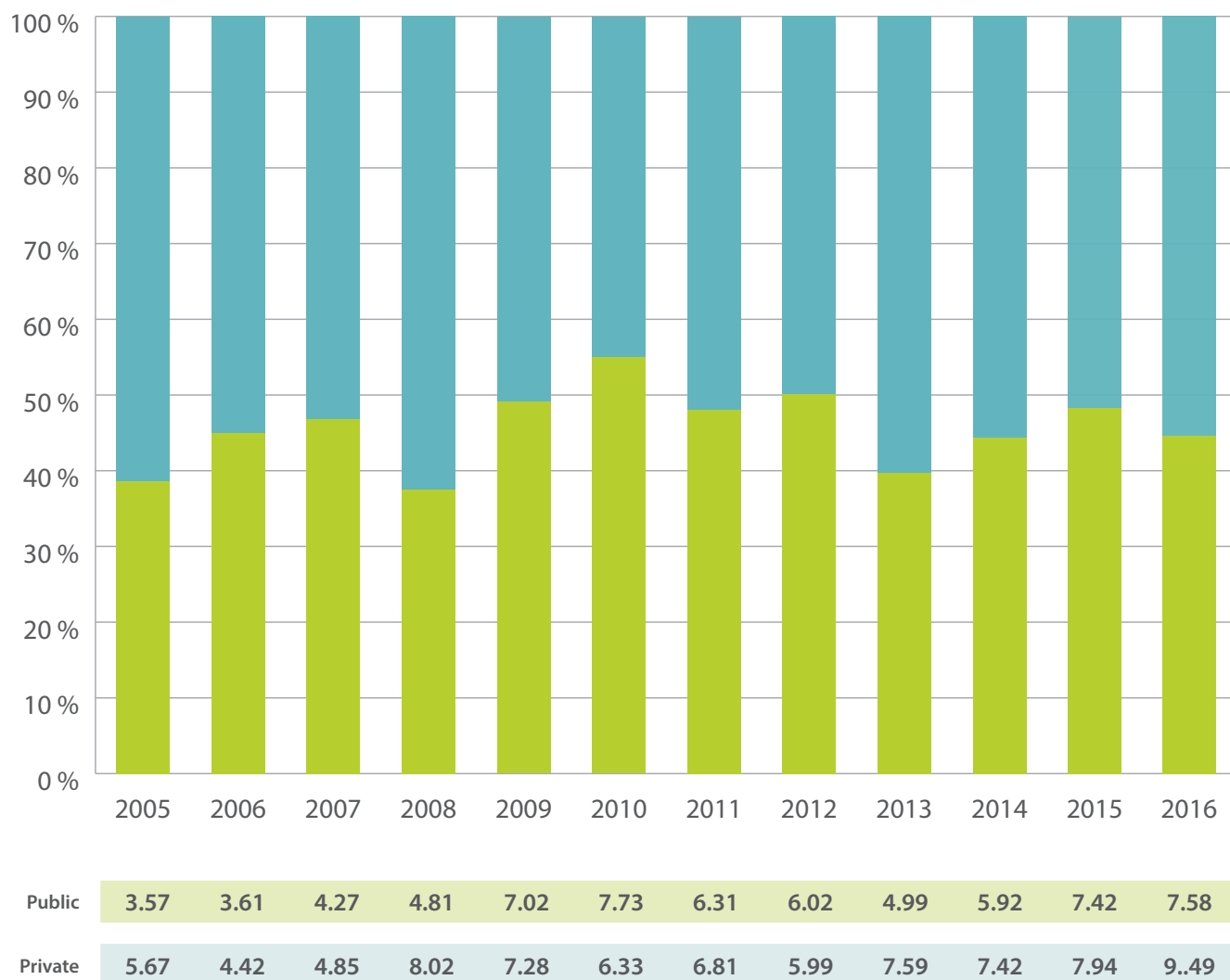
Dr. John Louis McGregor
Director of Research-INSERM Unit 689
Cardiovascular Research Centre–
Lariboisière Hospital (Paris, France)

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)

Financial Data

Public/Private Income Summary 2005-2016



In millions of euros

Income Statement year ending 31 December 2016

Income from activities	15.441.535,34
Services	5.374.896,77
Collaborations with partners and sponsors	2.689.181,36
Government grants	6.280.440,67
Other grants, donations and legacies	1.182.200,48
Repayment of grants, donations, etc	-85.183,94
Stocks and supplies	-1.375.324,98
Material and equipment for activities	-1.375.324,98
Other income	0,00
Additional and management income	0,00
Personnel expenditure	-8.447.650,28
Salaries	-6.486.418,24
Social security	-1.961.232,04
Other operating expenses	-5.306.003,69
External services	-4.750.458,28
Leases and Royalties	0,00
Repairs and maintenance	-122.259,97
Freelance services	-486.403,37
Insurance	-38.959,66
Banking	-22.666,84
Sundry	-3.471,95
Other services	-4.076.696,49
Taxes	-16.601,95
Loss, deterioration and variation in provisions for operations	-287.838,93
Other operating expenses	-251.104,53
Depreciation of fixed assets	-1.143.790,02
Grants, donations and bequests transferred to results	798.107,76
Deterioration and gains/losses on disposal of fixed assets	0,00
Gains/losses from disposal and other	0,00
Other gains/losses	29.317,06
Incidental expenses	-19.587,75
Incidental income	48.904,81
OPERATIONAL PROFIT/LOSS	-3.808,81
Financial income	185.594,28
From investments in equity instruments	185.594,28
Negotiable costs	185.594,28
Financial expenditure	-177.168,65
Debts with third parties	-177.168,65
Exchange differences	-938,19
FINANCIAL PROFIT/LOSS	7.487,44
OVERALL PROFIT/LOSS	3.678,63

In euros

Scientific Outcomes

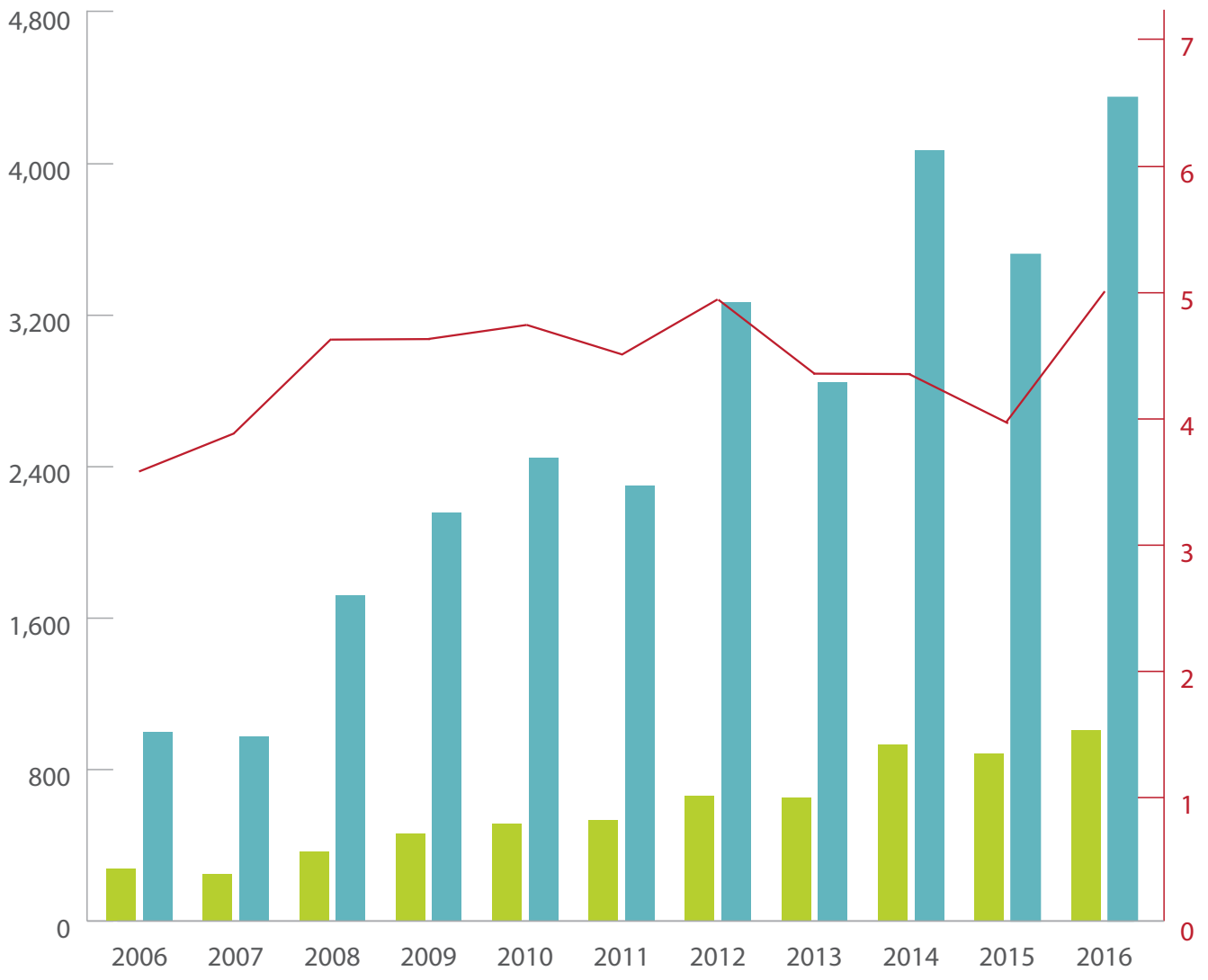
Outcomes for IIB Sant Pau's scientific activities are summarized in the following pages as follows:

- **Publications with an Impact Factor (IF):** This figure shows IIB Sant Pau publications over the years with an impact factor, one of the most important indicators used to identify the relevance of a science journal in its field and to give an approximate idea of the quality of the publications of researchers.
- **Publications by Thematic Area:** This figure reflects the relative importance of each of the thematic areas covered by IIB Sant Pau.
- **Publications by Quartile:** This figure depicts IIB Sant Pau publications by quartiles that reflect the importance of the scientific journal. The journals in a specific category are listed in descending order according to their impact factor and the list is divided into four equal quartiles. Thus, journals in the top quartile (Q1) are the most important journals in their category.
- **Research Resources and Training:** These tables show the list of institutions providing support to IIB Sant Pau and sharing its vision of research.
- **Doctoral Theses:** This table reflects the potential of up-and-coming IIB Sant Pau staff members and their ability to generate new ideas and drive new projects.
- **Patents:** This table shows the patents requested by IIB Sant Pau researchers between 2009 (foundation year) and 2014.
- **Technology Transfer Agreements:** This table reflects agreements signed between 2009 (foundation year) and 2014.
- **Clinical Guidelines.**



Publications with an Impact Factor

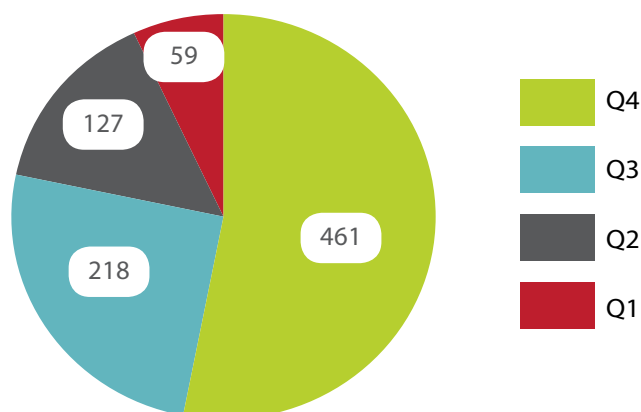
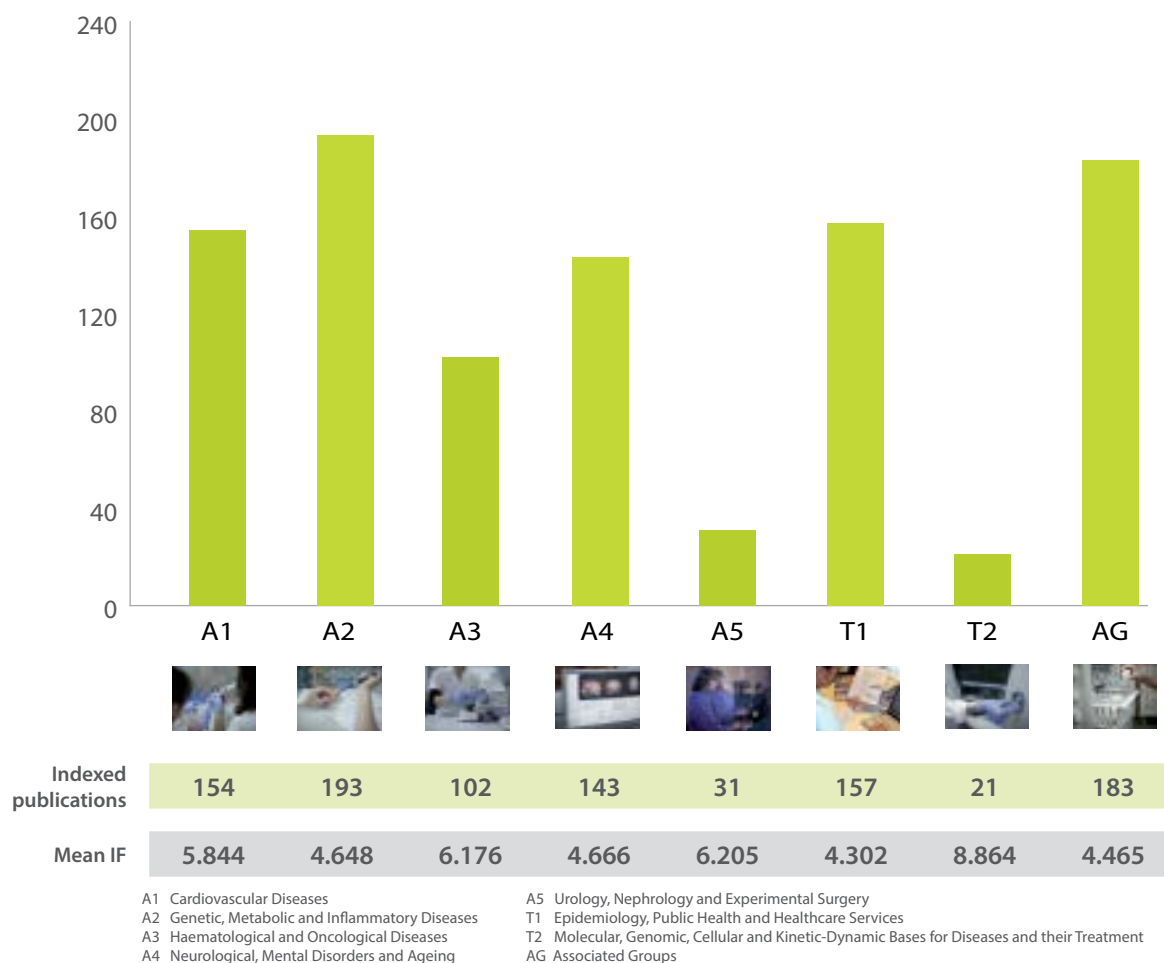
Production status



Publications	275	250	367	461	514	534	664	654	933	804	996
Total IF	1,001.03	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
Mean IF	3.64	3.9	4.69	4.68	4.78	4.30	4.92	4.35	4.37	3.98	5

Publications by Thematic Area and Quartile

Indexed publications



Research Resources

Centre	Active		Granted	
	2015	2016	2015	2016
AGAUR (Agència de Gestió d'Ajuts Universitats i Recerca)	23	24	2	-
Projectes europeus	5	3	1	-
Projectes americans	1	-	-	-
EAES (European Association for Endoscopic Surgery)	1	-	-	-
COIB (Col·legi Oficial d'Infermeria de Barcelona)	1	1	1	2
Fundació Marató TV3	10	12	5	2
Fundación Mutua Madrileña (FMM)	2	2	1	-
Fundació Josep Carreras Internacional	-	-	-	1
ISCIII (Instituto de Salud Carlos III)	101	99	21	287
MINECO (Ministerio de Economía y Competitividad)	8	7	2	3
Ministerio de Sanidad, Servicios Sociales e Igualdad	10	5	1	2
SEPAR (Sociedad Española de Neumología y Cirugía Torácica)	8	3	-	-
AECC (Asociación Española Contra el Cáncer)	3	5	3	-
Merk Serono	1	-	-	-
SOCAP (Societat Catalana de Pneumologia)	2	1	-	-
Sociedad Española de Diabetes	-	1	1	-
Fundació Catalana de Pneumologia	2	3	1	-
Sociedad Española de Cardiología	-	1	1	-
Asociación Española de Artroscopia	-	-	-	-
AFM Telethon	1	1	1	-
Societat Catalana de Psiquiatria i Salut Mental	1	1	-	-
Fundació Alfonso Martín Escudero	1	-	-	-
GILEAD	2	-	-	-
Grupo Español de Investigación en Sarcomas	1	1	-	-
Federación Española de Enfermedades Raras / Fundación Isabel Gemio /	1	2	1	-
Federación Española de Enfermedades Neuromusculares	1	1	-	-
Fundació Privada de l'Hospital de la Santa Creu i Sant Pau	-	6	6	7
Col·legi de Farmacèutics de Barcelona	-	1	1	-
Fundación y Sociedad Española de Arteriosclerosis	-	1	1	-
European Society of Cardiology	-	1	1	-
Fundació Víctor Grífols i Lucas	-	1	1	-
Fundació Ramón Pla Armengol	-	1	1	-
Institució CERCA	-	1	1	1
Fundació BBVA	-	-	-	1
BIOCAT	-	-	-	1
Grupo Español de Oncología Genitourinaria	-	-	-	1
Fundació Privada Daniel Bravo-Andreu	-	1	1	-
Guillain-Barré Syndrome International Foundation	1	1	-	-

Research Training

Centre	Active		Granted	
	2015	2016	2015	2016
AGAUR (Agència de Gestió d'Ajuts Universitats i Recerca)	5	5	2	2
Departament de Salut (Generalitat de Catalunya)	3	1	–	–
MINECO (Ministerio de Economía y Competitividad)	3	3	–*	1
ISCIII (Instituto de Salud Carlos III)	30	34	14**	12
Fundación Casa del Corazón	1	1	1	–
Projectes americans	1	1	–	–
Fundación J. L. Castaño	1	–	–	–
Fundació Privada de l'Hospital de la Santa Creu i Sant Pau	–	3	5	10
SEPAR (Sociedad Española de Neumología y Cirugía Torácica)	–	–	–	1
SOCAP (Societat Catalana de Pneumologia)	–	–	–	1
FUCAP (Fundació Catalana de Pneumologia)	–	–	–	1
FEHH (Fundación Española de Hematología y Hemoterapia)	–	–	–	1
AECC (Asociación Española Contra el Cáncer)	–	–	–	1
	44	48	25	30

* A project has resigned.

** Two projects have resigned.

Doctoral Theses

IIB Sant Pau Accredited Groups	Candidate	Thesis title	Director(s)
Angiology, Vascular Biology and Inflammation	Adriana Agüero Medina	Papel pronóstico de la expresión transcripcional de CD45 en los carcinomas escamosos de cabeza y cuello.	Xavier León Vintró, Mercedes Camacho Pérez de Madrid
Ear, Nose and Throat Cancers	Anna Albertí i Casas	Avaluació dels resultats quirúrgics en estapedectomies de GAP petit	Miquel Quer, Enric Figuerola
General and Digestive Surgery	Verónica Alonso Jurado	Impacto clínico del abordaje laparoscópico en la proctocolectomía y colectomía subtotal	Eduardo María Targarona
Clinical and Translational Cardiology	Concepción Alonso Martín	Caracterización de las relaciones electroanatómicas de las venas pulmonares durante la ablación circunferencial de la fibrilación auricular	Juan María Cinca Cuscollola
Microbiology and Infectious Diseases	Marc Argente Viñals	Epidemiología de la carbapenemasa OXA-48 en aïllats de <i>Klebsiella pneumoniae</i> a Catalunya*	E. Miro, F. Navarro
Pharmacokinetic/ Pharmacodynamic Modelling and Simulation	María Rosa Ballester	Evaluación del efecto sobre el eeg, sedación y rendimiento psicomotor de diazepam y desmetildiazepam en voluntarios sanos. Aplicación de modelado farmacocinético/farmacodinámico poblacional	Marta Valle
Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases	Maria Teresa Bejar Serrano	Impacto de los factores de riesgo cardiovascular en las células madre mesenquimales derivadas de tejido adiposo	Lina Badimon
Chronic Respiratory Diseases	Nadia Sonia Brienza	Clinical research on asthma through bronchial biopsy	
Angiology, Vascular Biology and Inflammation	Carolina Bothe González	Papel de la IL-1 en el riesgo de aparición de metástasis a distancia en pacientes con carcinoma escamoso de cabeza y cuello	Xavier León Vintró, Mercedes Camacho Pérez de Madrid, Luis Vila Navarro
Nephrology	Gemma Bullich Vilanova	Molecular study of idiopathic nephrotic syndrome	Elisabet Ars, Roser Torra
Pharmacy	Isabel Castro Cels	Resultados negativos asociados a la medicación como causa de consulta en los usuarios del Servicio de Urgencias del Hospital de la Santa Creu y Sant Pau de Barcelona	M. Antonia Mangues Bafalluy, Laura Tuneu Valls, M. José Faus Dáder
Pharmacy / Oncology/ Haematology and Transplantation	Ana Clopés Estela	Optimización mediante análisis farmacocinético del tratamiento de busulfan en dos poblaciones específicas de pacientes onco-hematológicos	M. Antonia Mangues, Jordi Sierra Gil, Dolors Soy Muner
Endocrinology, Diabetes and Nutrition	Cristina Colom Comí	Aterosclerosis silente en la Diabetes tipo 1. Prevalencia y perfil de riesgo	Antonio Pérez, Ana Isabel Chico
Evaluation of Public Health Policies and Programmes	Xavier Continente	Sobrepeso, obesidad y conductas relacionadas con la salud en adolescentes de Barcelona	M. José López

* European theses

IIB Sant Pau Accredited Groups	Candidate	Thesis title	Director(s)
Chronic Respiratory Diseases	Astrid Crespo Lessmann	Expresión de receptores Toll-like (TLR) II y IV en pacientes asmáticos. Relación con el fenotipo inflamatorio, la gravedad y el nivel de control del asma	Vicente Plaza
Pituitary Gland Disorders	Iris Crespo Martín	Neuropsychological evaluation of patients with acromegaly and Cushing's syndrome: Long-term effects	Eugenia Resmini, Susan Webb, Elena Valassi
Cardiovascular Biochemistry	Mireia Cuartero Sala	Inhibidor tisular de la metaloproteína-2 (TIMP-2) y proteína de unión 7 del factor de crecimiento similar a la insulina (IGFBP-7) como biomarcadores precoces de disfunción renal aguda en el paciente crítico séptico	Jordi Ordóñez Llanos
Genetics in Neurodegenerative Diseases	Oriol Dols Icardo	Assessing the Genetic Overlap in Amyotrophic Lateral Sclerosis and Frontotemporal Dementia	
Metabolic Bases of Cardiovascular Risk	Teresa Laura Errico	Metabolismo y funcionalidad de HDL en un modelo murino (db/db) de diabetes y efectos de la sobreexpresión de apolipoproteína A-I humana	Josep Julve Gil
Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases	Oscar Rafael Escate Chávez	Expresión diferencial y función de microRNAs en patología cardiovascular	Lina Badimon, Teresa Padró
Oncology/Haematology and Transplantation	Laura Escribà Garcia	Cellular immunotherapy for B-cell lymphoma with B-cell lymphoma with NKT-cell agonists	Javier Briones Meijide
Pharmacokinetic/ Pharmacodynamic Modelling and Simulation	Javier Alejandro Estévez Gómez	Efecto de las concentraciones de ritonavir en la farmacocinética de atazanavir: aplicación de técnicas de modelado y simulación farmacocinético poblacional	Marta Valle Cano
Emerging Processes in Prevalent Diseases	Irene Fernández Castaño	Efecte de l'administració d'àcid docosahexanoic sobre les alteracions metabòliques i sobre la distribució del greix corporal en pacients amb infecció per VIH-1 sotmesos a tractament antiretroviral	Pere Domingo Pedrol
Inflammation and Vascular Remodelling / Atherosclerosis and Vascular Biology	Beatriz Ferrán Pérez	Identificación y caracterización de genes regulados por NOR-1 (Neuron-derived Orphan Receptor-1): implicación en el remodelado vascular y la diferenciación celular	José Martínez González, Cristina Rodríguez Sinovas
Clinical Epidemiology and Healthcare Services	Carmen Rosa Gallardo Quesada	Evidencias científicas sobre el control de la tuberculosis	Xavier Bonfill, Jesús M. Aranz
Pharmacokinetic/ Pharmacodynamic Modelling and Simulation	Jaume García	Resultados postoperatorios en la cirugía de prótesis total de rodilla utilizando la base de datos pain-out. Factores de riesgo asociados a presentar un dolor postoperatorio moderado-intenso	Marta Valle Cano, Margarita Puig Riera de Conías
Cardiovascular Biochemistry	Mercedes García Alvarez	Neutrophil gelatinase-associated lipocalin (NGAL) como biomarcador de disfunción renal aguda en pacientes postoperados de cirugía cardíaca renal aguda en el paciente crítico séptico	Jordi Ordóñez Llanos
Chronic Respiratory Diseases	Laia Garcia Bellmunt	Colonització bacteriana en la MPOC; paper dels nous mecanismes de defensa de la via aèria i nous mètodes diagnòstics	Oriol Sibila, Vicente Plaza
Locomotor System Research	Arantxa González Aránzazu	Antifibrinolíticos tópicos en artroplastia total de rodilla	
Multi-organ Damage	Nerea Hernández de Sosa	Estudi genètic de l'osteoporosi: heretabilitat de les propietats densitomètriques, estructurals i de resistència òssia	Jordi Casademont i Pou

IIB Sant Pau Accredited Groups	Candidate	Thesis title	Director(s)
Clinical Epidemiology and Healthcare Services	Núria Ibáñez Martínez	Validación del cuestionario de evaluación de las relaciones familiares básicas (cerfb).	Ignasi Gich, Anna Vilaregut
Neurobiology of Dementia	Marta Marquíé Sayagués	Validación en tejido cerebral humano de [F-18]-AV-1451 (T807), un nuevo marcador de la proteína tau-PHF para tomografía por emisión de positrones	Teresa Gómez-Isla, Alberto Lleó Bisa, Rafael Blesa González
Regulation of Cardiac Rhythm and Contraction	Adela Herraiz Martínez	Effects of Ageing and Risk Variants at 4q25 on Calcium Homeostasis in Cardiac Myocytes	Leif Hove-Madsen
Clinical Epidemiology and Healthcare Services	Fernando Tomás Lanás Zanetti	Obesidad y factores de riesgo de enfermedad coronaria en Chile	Maria Teresa Puig
Health Inequalities	María López	Empleo informal y salud en Centroamérica. Una aproximación desde las desigualdades de género	Fernando G. Benavides, Lucía Artazcoz
Health Inequalities	Felipe Macías Acuña	Inequidades Socioeconómicas en los Factores de Riesgo de las Enfermedades Crónicas No Transmisibles (ECNT) en Colombia	Carme Borrell
Pharmacy	Montserrat Masip Torné	Efectos adversos neuropsiquiátricos en pacientes con hepatitis C crónica en tratamiento con peginterferon alfa-2 y ribavirina	M. Antònia Mangués Bafalluy, Laura Tuneu Valls, M. José Faus Dader
Health Inequalities	Pamela Merino Salazar	Trabajo y salud en América Latina y el Caribe a través de las encuestas de condiciones de trabajo, empleo y salud.	Lucía Artazcoz, Fernando G. Benavides
Oncology/Haematology and Transplantation	Pau Montesinos	Tratamiento adaptado al riesgo de la leucemia promielocítica aguda con ATRA y quimioterapia	Jordi Sierra
Multi-organ Damage	Patricia Moya Alvarado	Estudios farmacogenéticos del metotrexato en la artritis reumatoide	Héctor Corominas Macías, Montserrat Baiget Bastús
Genomics of Complex Diseases	Andrés Muñoz Martín	Análisis del score de Khorana y predictores genómicos de riesgo de enfermedad tromboembólica venosa en pacientes tratados con quimioterapia en un medio extrahospitalario	José Manuel Soria
Ear, Nose and Throat Cancers	Maria Josep Nadal Castells	Prevención del Linfedema tras el vaciamiento axilar ganglionar en cáncer de mama	Miquel Quer; Helena Bascuñana; Celestion Barastegui
Clinical Epidemiology and Healthcare Services	Adoración Navarro Torné	European surveillance of invasive pneumococcal disease. epidemiology, serotype distribution and antimicrobial resistance patterns*	Josep María Jansà, Rosa Bartolomé Comas
Clinical Epidemiology and Healthcare Services	Carola Orrego Villagrán	Projectes col·laboratius per a la millora de la seguretat: avaluació de la seva aplicació en la prevenció de caigudes i la reducció de la infecció de l'espai quirúrgic en cirurgia colorectal	Rosa Suñol
Plastic Surgery	Gemma Pons Playá	Planificación preoperatoria de anastomosis linfático-venosas mediante ICG y linfoRMN	Jaume Masià, Xavier Rius i Cornadó, Xavier León i Vintró
Clinical Epidemiology and Healthcare Services	M. Jesús Quintana Ruiz	Análisis de la variabilidad y de la adecuación clínica del tratamiento quirúrgico del aneurisma de aorta abdominal	Xavier Bonfill

*European theses

IIB Sant Pau Accredited Groups	Candidate	Thesis title	Director(s)
Health Inequalities	M Isabel Pasarín Rua	Avaluació de l'Atenció Primària: Aproximació mitjançant el Primary Care Assessment Tools (PCAT),	Carme Borrell
Oncology/Haematology and Transplantation	José Luis Piñana Sánchez	Complicaciones orgánicas en el trasplante de progenitores hematopoyéticos con acondicionamiento de intensidad reducida	Jordi Sierra, Rodrigo Martino
Emerging Processes in Prevalent Diseases	Miguel Alberto Rizzi	Delirium en pacientes atendidos por insuficiencia cardíaca descompensa en urgencias: Características clínicas y evolución	Olga H. Torres Bonafonte
General and Digestive Surgery	Carlos Rodriguez Luppi	Factores predictivos e morbilidad postoperatoria y definición de un score de complejidad de la esplenectomía laparoscópica	Eduardo María Targarona, Manel Trias
Dermatology	Verónica Ruiz Salas	Estudi de bases moleculars addicionals que defineixin l'eficàcia de vismodegib i fenòmens de resistència en pacients amb carcinoma basocel·lular localment avançat i / o metastàtic mitjançant la recollida de biòpsies cutànies seriades durant el tractament amb aquest fàrmac	Lluís Puig Sanz, Joan Ramón Garcés Gatnau, Marta Alegre Fernández
Chronic Respiratory Diseases	Neus Salord	Impacte de la síndrome d'apnea del son sobre el metabolisme glucídica i la síndrome metabòlica en l'obesitat mòrbida	Mercè Mayos Pérez
Clinical Epidemiology and Healthcare Services	Gloria Sanclemente Mesa	Evidències en Dermatologia: Assaigs Clínics, Revisions Sistemàtiques i Guies de Pràctica Clínica	Xavier Bonfill, Pablo Alonso
Microbiology and Infectious Diseases	María Luisa Sorlí	Impacto de la monitorización de los niveles plasmáticos de colistina en la práctica clínica diaria	Dr. Juan Pablo Horcajada, Dr. Santiago Grau, Dra. Natividad de Benito
Neurobiology of Dementia	Marc Suárez Calvet	Degeneración lobular frontotemporal: estudio clínico, neuropatológico y de biomarcadores	Alberto Lleó Bisa, Rafael Blesa González
Health Inequalities	Noelia Vázquez	Evaluación de la efectividad de un programa comunitario de parentalidad positiva. Perspectiva desde los determinantes sociales de la salud	María Cruz Molina, Lucía Artazcoz
Plastic Surgery	Carmen Vega Garcia	El papel de la microcirugía reconstructiva tras la cirugía oncológica de cabeza y cuello. Indicaciones en la cirugía de rescate y en la glosectomía total.	Xavier León Vintró, Jaume Masià Ayala
Pharmacy	César Velásco Muñoz	El VIH desde una perspectiva de Salud Global**	Noé Garin Escrivà, Antoni Trilla García
Chronic Respiratory Diseases	Marta Villarnovo Cerrillo	Experimental modeling of respiratory toxicology from "Prestige"-type fuel	

** International theses

Patents

Title	Author / Inventor	Región	No. Appli- cation	F. Appli- cation	State Application	No. Con- cession	Conce- sion date
Systems and methods to assess infarcted myocardial tissue by measuring electrical impedance during the cardiac cycle	Juan Maria Cinca	-	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		
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	Israel	227442	13/01/2012	in process		
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues	Europe	EP12704711.6	13/01/2012	granted	EP2663336 (A1)	
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues	USA	US 13/979560	13/01/2012	granted	US 20140094404 A1	
Conjugates comprising nanoparticles coated with platinum containing compounds	Óscar Gallego	Japan	JP2011540141	13/06/2011	granted	P1133JP00	07/01/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Óscar Gallego	Canada	CA2745972	06/06/2011	granted	CA2745972	11/04/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Óscar Gallego	Israel	il213408	06/06/2011	in process		
Conjugates comprising nanoparticles coated with platinum containing compounds	Óscar Gallego	Turkey	P1133TREP	06/06/2011	granted	TR 2014 11735 T4	23/02/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Óscar Gallego	Europe	EP20090768395	15/12/2009	granted	EP2379114B1	09/07/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Óscar Gallego	USA	US13140347	15/12/2009	granted	US9023370 B2	20/12/2015

Title	Author / Inventor	Región	No. Appli- cation	F. Appli- cation	State Application	No. Con- cession	Conce- sion date
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

Spin off

Tax number	Business name	Entrepreneur	Type	Constitution date	Licensed technology	Status
C-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
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	ID	Title Contract	Type of Contract	Collaborator /Client	UTI Entry
2014	2014-037	License Agreement PREDI-NU Project	Licence/Transference Agreement	European Alliance Against Depression e.V.	15/4/14
2015	2015-036	Cooperation treaty iFightDepression	Licence/Transference Agreement	European Alliance Against Depression e.V.	23/3/15
2015	2015-068	Contracte llicència escala clínica	Licence/Transference Agreement	Eli Lilly & Co.	11/6/15
2015	2015-081	Llicència escala clínica	Licence/Transference Agreement	Bracket Global LLC	15/7/15
2016	2016-068	Transferència DiGestEpiClin	Licence/Transference Agreement	Fundació Institut per l'Excel·lència Clínica i Sanitària	25/5/16
2016	2016-101	Tansferència Surgitrainer and Hystrainer	Licence/Transference Agreement	Surgitrainer SL	13/9/16
2016	2016-142	Licencia escala PD-CRS	Licence/Transference Agreement	Sanofi-Aventis, S.A.	21/3/16

Date of Signature	Responsible ITU	IP	Research group	Amount of the contract	N° agreement
4/9/14	Alfons Hervàs	Saiko Allende	Clinical Psychiatry	-	
3/3/15	Alfons Hervàs	Maria J. Portella	Clinical Psychiatry		
29/6/15	Marina Passarell	Jaime Kulisevsky Bojarski	Parkinson Disease and Movement Disorders	5.000,00 €	1638
30/7/15	Marina Passarell	Jaime Kulisevsky Bojarski	Parkinson Disease and Movement Disorders	18.000,00 €	1681
22/7/16	Alfons Hervàs	Xavier Bonfill Cosp	Clinical Epidemiology and Healthcare Services		1971
12/9/16	Alfons Hervàs	Ramon Rovira Negre	Reproductive Health		2036
8/11/16	Marina Passarell	Jaime Kulisevsky Bojarski	Parkinson Disease and Movement Disorders	46.500,00 €	2058

Clinical Guidelines

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2: Kharfan-Dabaja MA, Kumar A, Hamadani M, Stilgenbauer S, Ghia P, Anasetti C, Dreger P, Montserrat E, Perales MA, Alyea EP, Awan FT, Ayala E, Barrientos JC, Brown JR, Castro JE, Furman RR, Gribben J, Hill BT, Mohty M, Moreno C, O'Brien S, Pavletic SZ, Pinilla-Ibarz J, Reddy NM, Sorrow M, Bredeson C, Carpenter P, Savani BN. Clinical Practice Recommendations for Use of Allogeneic Hematopoietic Cell Transplantation in Chronic Lymphocytic Leukemia on Behalf of the Guidelines Committee of the American Society for Blood and Marrow Transplantation. *Biol Blood Marrow Transplant.* 2016 Dec;22(12):2117-2125. doi: 10.1016/j.bbmt.2016.09.013. Epub 2016 Sep 19. Review. PubMed PMID: 27660167; PubMed Central PMCID: PMC5116249.

3: Martin-Richard M, Ginès A, Ayuso JR, Sabater L, Fabregat J, Mendez R, Fernández-Esparrach G, Molero X, Vaquero EC, Cuatrecasas M, Ferrández A, Maurel J; Comité multidisciplinar para la actualización de las recomendaciones para el manejo de las lesiones pre-malignas y el adenocarcinoma de páncreas. [Recommendations for the diagnosis, staging and treatment of pre-malignant lesions and pancreatic adenocarcinoma]. *Med Clin (Barc).* 2016 Nov 18;147(10):465.e1-465.e8. doi: 10.1016/j.medcli.2016.07.033. Epub 2016 Oct 7. Spanish. PubMed PMID: 27726847.

4: Capdevila J, Galofré JC, Grande E, Zafón Llopis C, Ramón Y Cajal Asensio T, Navarro González E, Jiménez-Fonseca P, Santamaría Sandi J, Gómez Sáez JM, Riesco Eizaguirre G. Consensus on the management of advanced radioactive iodine-refractory differentiated thyroid cancer on behalf of the Spanish Society of Endocrinology Thyroid Cancer Working Group (GTSEEN) and Spanish Rare Cancer Working Group (GETHI). *Clin Transl Oncol.* 2017 Mar;19(3):279-287. doi: 10.1007/s12094-016-1554-5. Epub 2016 Oct 4. Review. PubMed PMID: 27704399.

5: Guyatt GH, Alonso-Coello P, Schünemann HJ, Djulbegovic B, Nothacker M, Lange S, Murad MH, Akl EA. Guideline panels should seldom make good practice statements: guidance from the GRADE Working Group. *J Clin Epidemiol.* 2016 Dec;80:3-7. doi: 10.1016/j.jclinepi.2016.07.006. Epub 2016 Jul 22. PubMed PMID: 27452192.

6: Martínez García L, Pardo-Hernandez H, Alonso-Coello P. More detail is needed for updating clinical guidelines. *Kidney Int.* 2016 Sep;90(3):707-8. doi: 10.1016/j.kint.2016.06.017. PubMed PMID: 27521118.

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Research Support Services

The main objective of the research support services, which are divided into two blocks, is the sharing and pooling of resources as an effective way to optimize funds and boost research.

Research Support Services

These provide facilities and equipment that are exclusively available to any specific research group but are shared among groups at all institutions within IIB Sant Pau.

IIB Sant Pau has 14 services:

- Clinical Trial Documentation Management
- Research Institute Management
- Research Institute Projects Unit
- Quality and Information Systems Unit
- Radioactivity Unit
- Centre for Drug Research (CIM Sant Pau)
- Central Clinical Research and Clinical Trials Unit (UCICEC Sant Pau)
- Animal Housing
- Transfer and Innovation Unit
- Communications Coordination Team
- Clinical Research Ethics Committee
- Clinical Research Ethics Committee Secretariat

Scientific and Technical Service Platforms

The main aim of these support services is to manage, allocate and optimize the top-level research resources available to IIB Sant Pau. They provide researchers with support and scientific and technical assessment and advise on the most appropriate methods to prepare samples and to plan optimal work flows for each objective.

IIB Sant Pau has 5 platforms:

- Genomics and Transcriptomics Platform
- Functional and Cellular Analysis Platform
- Microscopy and Immunohistochemistry Platform
- Innovation Platform i2Health Sant Pau
- Biobank

The platforms also have access to equipment available for general use to complement their functioning.

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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 Support Services



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Staff:

Management Control Unit
Soraya González, Sandra Parera,
Laura San Martín

Administrative-Financial Unit
Ana Espallargas, Cristina Requena,
Núria García, Declan de la Fuente

Human Resources Unit
Rafael Fernández

General Secretariat
Rosa M. García
Amanda García
Marta Lorente
Magda Sanz

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
Eva Rodríguez
Amanda García
Marta Lorente

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.



Coordinator:

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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 and ISO 9001 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.

Research Support Services



Coordinator:
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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.
 - Cellular cholesterol efflux.
 - Metabolism 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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Joan Martínez
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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.

Research Support Services



Coordinator:

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Pablo Bros
Enrique Peña

Central Clinical Research and Clinical Trials Unit (UCICEC 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.

UCICEC 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), Clinical Research Ethics Committee (CEIC), 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 form and annexes / application forms / evaluation forms follow form.
- > Support in the processing of initial applications, clarifications and amendments: AEMPS, CEIC, 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:

Dra. Laura Casaní (Designated Veterinarian, Animal Health and Welfare Advisor). ICCC

Manager of the Animal Facility:

Sergi Florit (Animal Welfare Advisor) ICCC

Animal Technicians:

Angel Juncosa. ICCC

Luis Garcia. IR

Margarita Domingo. IR

Assistant: Fanny Cevallos. ICCC

Animal Housing

Functions:

- > Produce different small rodent strains in-house for research and teaching purposes.
- > Manage the purchase and transportation of animals from domestic and international breeding and supply centres.
- > Receive and house incoming animals and deliver them to users once quarantine and health requirements are met.
- > House and maintain experimental animals while ensuring their welfare.
- > Regularly check rodent health status.
- > Perform twice-yearly health checks.
- > Clean and sterilize of materials and maintain the pathogen-free area.
- > Feed animals according to experimental protocols.
- > Provide support for animal surgery, anaesthesia and euthanasia.
- > Supply laboratory materials and collect samples.
- > Monitor mating, mating plugs, pregnant females and weaning.
- > Provide healthcare.
- > Advise the animal welfare expert.
- > Perform periodic health checks with sentinel screening in all rooms.
- > Maintain monitoring protocols.
- > Ensure the hygiene and safety of facilities and equipment.
- > Manage waste disposal.
- > Attend training in relation to all protocols developed in the animal house.
- > Advise on the drafting of research projects involving the use of animals.
- > Attend training in relation to all protocols developed in the animal house.
- > Advise on the drafting of research projects involving the use of animals.

Facilities:

Conventional Animal Facility:

- > Mice rooms (2), total capacity 2400.
- > Rat room, capacity 200.
- > Quarantine room.
- > Washroom.
- > Clean-storage room.
- > Standard storeroom.
- > Surgery room.
- > CO2 euthanasia equipment.
- > Treatment room.
- > Office.
- > Shower.
- > WC.

Pathogen-free area:

- > Pre-changing room.
- > Changing room.
- > Air shower.
- > Work room.
- > Mice room and changing area.
- > S.A.S.
- > Autoclave and washing area.
- > storage room.

Research Support Services



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Coordinator:

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Staff:

Marina Passarell
Miquel Arrieta

Transfer and Innovation Unit

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.



President:

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Secretary:

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Josep Corbella
Francesc Jané
Xavier León
Jordi Mancebo
Margarita Meseguer
Estela Moreno
M. Virtudes Pacheco
Javier Pagonabarraga
Maria Teresa Ricart Basagaña

Clinical Research Ethics Committee

The Ethics Committee for Clinical Research (CEIC) 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 trial and provide public assurance of that

protection, 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 drugs and health products.
 - Observational 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 CEIC.
- > Monitor of clinical drug trials and clinical research with medical devices.



Coordinator:

Milagros Alonso
malonsoma@santpau.cat

Administrative Staff:

Marisol Mogollón
Albert Querol
Romy Rodríguez

Clinical Research Ethics Committee Secretariat

The Clinical Research Ethics Committee 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 Secretariat of the Clinical Research Ethics Committee evaluates the methodological, ethical and

legal aspects 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.

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.
- > 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.
- > Administer contracts for all clinical trials 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.

Scientific and Technical Service Platforms



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Coordinator:
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Technical Staff:
Genomics Laboratory:
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Transcriptomics Laboratory:
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Genomics and Transcriptomics Platform

> GENOMICS LABORATORY

Functions:

- > Next-generation sequencing: full transcriptome genotyping, RNA-Seq, Ampli-Seq, ChIP-Seq, amplicon sequencing and sequencing and identification of microorganisms.
- > Sanger sequencing: mutational analysis, microorganism identification and validation of cell lines.
- > Analysis of fragments: microsatellite instability, loss of heterozygosity studies in pathological conditions, mutation detection and genotyping, quantification of gene copy numbers, methylation studies and studies of polymorphisms associated with disease states.

Equipment:

- > Ion Torrent Personal Genome Machine.
- > Ion OneTouch (TM) System.
- > 3130xl Genetic Analyzer capillary electrophoresis sequencer.

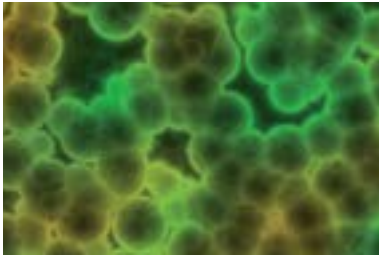
> TRANSCRIPTOMICS LABORATORY

Functions:

- > Hybridization and analysis of Affymetrix microarrays:
 - RNA and micro-RNA expression profiles in normal conditions and in diseases and treatment.
 - Loss of heterozygosity, copy number analysis and genome-wide mutation detection.
 - Genome-wide linkage and association studies.
- > Real time quantitative PCR (gene expression, allelic discrimination).
- > Nucleic acid quality assessment.
- > Quantification of nucleic acids (Bioanalyzer, Nanodrop).

Equipment:

- > Affymetrix array platform (upgrade 7G).
- > Real time quantitative PCR ABI 7900HT (384-well plates and TLDA).
- > Bioanalyzer 2100
- > Nanodrop 2000.



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Coordinator:

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Technical Staff:

Flow Cytometry Laboratory:
 Marta Soler
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Cell Culture Laboratory:

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Functional and Cellular Analysis Platform

> FLOW CYTOMETRY LABORATORY

Functions:

- > Conventional cytometry in homogenous (cell line) or heterogeneous (biological fluid) samples:
 - Detection of the presence of proteins and determination of cell populations (cell markers).
 - Studies of signalling cascades (cell cycle, cell proliferation, apoptosis, intracellular calcium determination).
 - Quantification of transfection efficiency.
 - Phenotype changes and relative and absolute presence.
 - Production of mediators.
 - Detection of minority populations.
- > Cell sorter:
- Separation of cell populations in sterile conditions.

Equipment:

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

> CELL CULTURE LABORATORY

Functions:

- > To make adequate facilities and equipment available to researchers working with cell cultures in a BSL2 laboratory.

Equipment:

- > 3 CO₂ incubators.
- > 2 hypoxia incubators (2-21% O₂).
- > 2 IIA biosafety cabinets (BSL2).
- > 2 hypoxia cabinets (BSL1).
- > Culture baths.
- > Olympus inverted microscope with high-resolution colour camera.
- > Refrigerated centrifuge.
- > Fridge 4°C and freezer -20°C.
- > Thermo-desinfector and autoclave.

Scientific and Technical Service Platforms



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Coordinators:
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Microscopy and Immunohistochemistry Platform

> IMMUNOHISTOCHEMISTRY LABORATORY

Functions:

- > Tissue processing.
- > Paraffin and OCT-block preparation.
- > Block cutting with microtome/cryostat.
- > Automatic immunostaining (simple and dual).
- > Staining (Giemsa, haematoxylin-eosin, trichromic, PAS, Oil Red, etc).
- > Preparation of tissue arrays.
- > Image acquisition and analysis using high-resolution colour microscopy and specialist software.

Equipment:

- > Tissue processor (Sakura).
- > Paraffin bath (Sakura).
- > Microtome (Microm).
- > Cryostat (Leica).
- > Immune autostainer AS48 (Dako).
- > Autostainer (Sakura).
- > Semiautomatic tissue arrayer.

> MICROSCOPY LABORATORY

Functions:

- > Confocal microscopy in live and fixed cells:
 - Immunofluorescence of 2 to 5 fluorochromes.
 - Reconstruction of 3D and 4D images.
 - Colocalization studies.
- Inter- and intra-interactions (FRET and FLIM).
- Molecular diffusion times (FCS).
- > Conventional fluorescence microscopy (immunofluorescence with 1 or 2 fluorochromes, FISH) in live and fixed cells.

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 microscope.

Innovation Platform i2Health Sant Pau

Functions:

- > Promote the development of the information and communication technologies in the health sector.
- > Support researchers and healthcare staff undertaking e-health projects.
- > Provide a dedicated space within the hospital to create a living lab by bringing together medical staff, engineers, technologists, industry and health administration.



PLAN
AVANZA



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Coordinator:

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Technical Staff:

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Biobank

Functions:

- > Create and maintain a collection of healthy and diseased biological human samples in optimal conditions for use in research projects.
- > Facilitate collaboration projects by putting investigators in touch and making biological human sample cession possible.
- > Supply (non-profit) human biological samples to research groups, in accordance with legal regulations.
- > Obtain, process and store human biological samples in accordance with international standards, maintaining sample traceability and security in accordance with legal requirements.
- > Provide training in legal and ethical regulations governing biological human sample management.

Grants:

- > HSCSP Research Institute. Biobank Network 2009. Amount: €138,000.

Tumour Bank



Manager:

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Staff:

María Jesús Nagel
Jorge Pena

Coordinators:

Lluís Catasús
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Functions:

- > Create and maintain a collection of healthy and diseased tissue samples in optimal conditions for use in research projects that may include morphology, phenotype and molecular analyses and which may also be used in diagnosis.
- > Guarantee the quality of stored material by means of morphology analyses of samples, assuring anatomical and pathological correlation with definitive diagnoses for tissues.
- > Supply material to research groups on a non-profit basis (investigators may apply for samples as long as their project complies with current regulations and is scientifically, technically and ethically viable).

Equipment:

- > 4 fast-freeze apparatus (isopentane bath, stored at -50°C).
- > Storage and cryopreservation systems: 2 freezers -80°C and 1 deposit for liquid nitrogen.
- > 1 cryostat.
- > 1 manual tissue arrayer.



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Other Equipment:
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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

Equipment:

- > Precision weighing balances (Sartorius).
- > Bioanalyzer 2100 (Agilent).
- > Nanodrop 2000 (Thermo).
- > Infinite 200 (Tecan) microplate reader: spectrophotometer, fluorometer, luminometer.

Grants:

- > HSCSP Research Institute. Innovation Network 2009. Amount: €123,414.
- > Kulisevsky, J. Expert system integrating teleassistance and medicine to prevent dependence and promote autonomy of the elderly in the home environment. E-HEALTH Platform for Healthy Ageing. Plan Avanza. Amount: €60,848.55.



Areas of Research

54



Area 1
Cardiovascular Diseases

94



Area 2
Genetic, Metabolic and
Inflammatory Diseases

140



Area 3
Haematological and
Oncological Diseases

160



Area 4
Neurological,
Mental Disorders and Ageing

198



Area 5
Uronephrology
and Experimental Surgery

210



Area T1

Epidemiology, Public Health
and Healthcare Services

240



Area T2

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


252



Associated Groups

AREA 1

Cardiovascular Disease

- 
- 56 Clinical and Translational Cardiology
 - 64 Thrombosis and Haemostasis
 - 68 Cardiovascular Biochemistry
 - 72 Angiology, Vascular Biology and Inflammation
 - 74 Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases
 - 80 Biomarkers for Cardiovascular Disease
 - 84 Atherosclerosis and Vascular Biology
 - 88 Regulation of Cardiac Rhythm and Contraction
 - 90 Lipids and Cardiovascular Pathology

eases



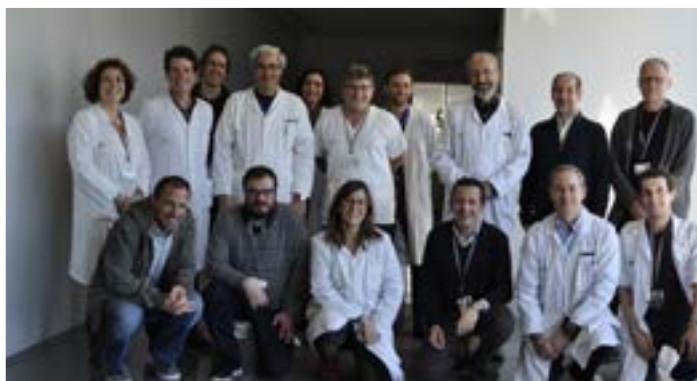
Clinical and Translational Cardiology

Coordinator

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Mateo Aguilar, Ester IR
Pons Lladó, Guillem FGS
Roig Minguell, Eulàlia FGS
Serra Peñaranda, Antoni FGS
Sionis, Alessandro FGS
Solé Gonzalez, Eduard FGS
Subirana Domènech, M. Teresa 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.

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.
- ▶ 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 re-hospitalizations.
- ▶ 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 with other IIB Sant Pau Groups

- ▶ Vicenta Llorente-Cortés, ICCC - CSIC.
- ▶ Leif Hove Madsen, ICCC - 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 Cusculloa (HSCSP), Programme 6: Clinical and Translational Cardiology, RD12/0042-RIC (Cardiovascular Research Network):**

- ▶ Alfredo Bardají Ruiz. Hospital Universitari Joan XXIII (Tarragona)
- ▶ Fernando Worner Diz. Hospital Universitari Arnau de Vilanova (Lleida)
- ▶ Andrés Grau Sepúlveda. Hospital Son Dureta (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 Clínic San Carlos (Madrid)
- ▶ Juan Francisco Delgado Jiménez. Hospital 12 de Octubre (Madrid)
- ▶ Jose Luis Zamorano. Hospital Ramón y Cajal (Madrid)
- ▶ Mariano Valdés Chavarri. Hospital Universitario Virgen de la Arrixaca (Murcia)
- ▶ José Ramón González. Hospital Clínic 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)

Other collaborators:

- ▶ Xavier Rosell, Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya-UPC (Barcelona)
- ▶ Borja Ibáñez, Laboratorio Traslacional para la Imagen y Terapia Cardiovascular, Centro Nacional e 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 Clínic San Carlos (Madrid)
- ▶ Carlos Macaya Miguel. Hospital Clínic San Carlos (Madrid)
- ▶ Andrés Iníguez 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 Universitario 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 Clínic Universitario, Valladolid

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.

Clinical and Translational Cardiology

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 €.
- ▶ 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.

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

Grants Awarded in 2016

- ▶ 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 €.
- ▶ Juan Cinca (Research Collaborator). Desarrollo traslacional de un nuevo sistema de mapeo de la impedancia electrica del miocardio para la ablación por cateter de las arritmias ventriculares en pacientes con infarto de miocardio. DTS15/00099. Instituto de Salud Carlos III. Duration: 2016-2017.
- ▶ Xavier Viñolas, Agència de Qualitat i Avaluació Sanitàries (AQuAS): RITMOCORE. Arrhythmias monitoring and comprehensive care. Horizon 2020. European Commission. H2020-SCI-2016-CNET. Duration: 2016-2020.
- ▶ 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 €.
- ▶ Maria Eulalia 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 €.

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

Theses

- ▶ Concepción Alonso Martín. Caracterización de las relaciones electroanatómicas de las venas pulmonares durante la ablación circunferencial de la fibrilación auricular. Universitat Autònoma de Barcelona. Director: Juan Maria Cinca Cuscollola. Date of defense: 17 Nov 2016.

Awards

- ▶ X. Viñolas. Servei d'abordatge integral del procés assistencial. VII Premis La Unió a la Innovació en Gestió
- ▶ Eulàlia Roig. Premi Insuficiència Cardíaca 2016 a la Trayectoria Profesional. XIII Reunión anual de la sección de Insuficiencia Cardíaca de la SEC (Oviedo).

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Alonso-Martin C., Rodriguez-Font E., Guerra J.M., Vinolas X., High-Density Mapping of Counterclockwise to Clockwise Typical Atrial Flutter: Visualization of the Conduction Gap (2016) *J CARDIOVASC ELECTR*, 27 (11), 1349-1350.

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Alvarez M., Bertomeu-Gonzalez V., Arcocha M.F., Morina P., Tercedor L., Ferrero de Loma A., Pachon M., Garcia A., Pardo M., Datino T., Alonso C., Osca J., Nonfluoroscopic Catheter Ablation. Results from a Prospective Multi-center Registry (2016) *REV ESP CARDIOL*.

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Alvarez-Garcia J., Vives-Borras M., Gomis P., Ordóñez-Llanos J., Ferrero-Gregori A., Serra-Penaranda A., Cinca J., Electrophysiological Effects of Selective Atrial Coronary Artery Occlusion in Humans (2016) *CIRCULATION*, 133 (23), 2235-2242.

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Amit G., Wang J., Connolly S.J., Glikson M., Hohnloser S., Wright D.J., Brachmann J., Defaye P., Neuzner J., Mabo P., Vanerven L., Vinolas X., O'Hara G., Kautzner J., Appl U., Gadler F., Stein K., Konstantino Y., Healey J.S., Apical versus Non-Apical Lead: Is ICD Lead Position Important for Successful Defibrillation? (2016) *J CARDIOVASC ELECTR*, 27 (5), 581-586.

IF: 3.0680

Amoros-Figueras G., Jorge E., Garcia-Sanchez T., Bragos R., Rosell-Ferrer J., Cinca J., Recognition of fibrotic infarct density by the pattern of local systolic-diastolic myocardial electrical impedance (2016) *FRONT PHYSIOL*, 7 (AUG).

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Anguita Sanchez M., Castro Conde A., Cordeiro Fort A., Garcia-Moll Marimon X., Gomez Doblaz J.J., Gonzalez-Juanatey J.R., Lidon Corbi R.M., Lopez-Sendon J.L., Mostaza Prieto J., Rodriguez Padial L., Challenges in Oral Lipid-lowering Therapy: Position Document of the Spanish Society of Cardiology (2016) *REV ESP CARDIOL*, 69 (11), 1083-1087.

IF: 4.4850

Awamleh Garcia P., Alonso Martin J.J., Graupner Abad C., Jimenez Hernandez R.M., Curcio Ruigomez A., Talavera Calle P., Cristobal Varela C., Serrano Antolin J., Muniz J., Gomez Doblaz J.J., Roig E., Prevalence of Electrocardiographic Patterns Associated with Sudden Cardiac Death in the Spanish Population Aged 40 Years or Older. Results of the OFRECE Study (2016) *REV ESP CARDIOL*.

IF: 4.4850

Azzalini L., Giustino G., Ojeda S., Serra A., La Manna A., Ly H.Q., Bellini B., Benincasa S., Chavarria J., Gheorghie L.L., Longo G., Micciche E., D'Agosta G., Picard F., Pan M., Tam-

burino C., Latib A., Carlino M., Chieffo A., Colombo A., Procedural and Long-Term $\Delta\Omega$ of Bioresorbable Scaffolds Versus Drug-Eluting Stents in Chronic Total Occlusions (2016) *CIRC-CARDIOVASC INTE*, 9 (10).

IF: 7.1980

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Vallve Fornieles, Cristina FGS
Vázquez Santiago, Miguel IR
Vilalta Setó, Noelia FGS
Ziyatdinov, Andrey IR



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.
- ▶ 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 (Modelling 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).
- ▶ Incorporation to the new CIBER cardiovascular research network.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Genomics of Complex Diseases (GAIT1, GAIT2, RETROVE, VEREMA and MIRTO Project).
- ▶ Stroke Unit (HERO, EDUCANT 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, Marseilles, 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.
- ▶ Institute of Biological Psychiatry, Mental Health Snc. Hans. Roskilde (Denmark).

Active Grants

- ▶ Joan Carles Souto Andres. Red Cardiovascular. RD12/0042/0032. Instituto de Salud Carlos III. Duration: 2013-2017. 181,000 €.
- ▶ Jose Mateo Arranz. Estudio randomizado y controlado para comparar el tratamiento con anticoagulación oral con antagonistas de la vitamina K versus heparina de bajo peso molecular (bemiparina) en pacientes con criterios de anticoagulación. Conveni Rovi. Laboratoris Farmacèutics Rovi. Duration: 2012-2016. 6,507.11 €.

- ▶ Joan Carles Souto Andres. 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 €.

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

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Scientific Production

Athanasiadis G., Arranz L., Ziyatdinov A., Brunel H., Camacho M., Malouf J., Sosa N.H.D., Vila L., Casademont J., Soria J.M., Exploring correlation between bone metabolism markers and densitometric traits in extended families from Spain (2016) BONE, 90, 1-6.

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Batlle J., Perez-Rodriguez A., Corrales I., Lopez-Fernandez M.F., Rodriguez-Trillo A., Loures E., Cid A.R., Bonanad S., Cabrera N., Moret A., Parra R., Mingot-Castellano M.E., Balda I., Altisent C., Perez-Montes R., Fisac R.M., Iruin G., Herrero S., Soto I., De Rueda B., et al. Molecular and clinical profile of von willebrand disease in Spain (PCM-EVW-ES): Proposal for a new diagnostic paradigm (2016) THROMB HAEMOSTASIS, 115 (1), 40-50.

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Brunel H., Massanet R., Martinez-Perez A., Ziyatdinov A., Martin-Fernandez L., Souto J.C., Perera A., Soria J.M., The central role of KNG1 gene as a genetic determinant of coagulation pathway-related traits: Exploring metaphenotypes (2016) PLOS ONE, 11 (12).

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Hinds D.A., Buil A., Ziemek D., Martinez-Perez Angel, Malik R., Folkersen L., Germain M., Malarstig Anders, Brown A., Soria J.M., Dichgans M., Bing N., Franco-Cereceda Anders, Souto J.C., Dermitzakis E.T., Hamsten A., Worrall B.B., Tung J.Y., Sabater-Lleal M., Genome-wide association analysis of self-reported events in 6135 individuals and 252 827 controls identifies 8 loci associated with thrombosis (2016) HUM MOL GENET, 25 (9), 1867-1874.

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Martin-Fernandez L., Ziyatdinov A., Carrasco M., Millon J.A., Martinez-Perez A., Vilalta N., Brunel H., Font M., Hamsten A., Souto J.C., Soria J.M., Genetic determinants of thrombin generation and their relation to venous thrombosis: Results from the GAIT-2 project (2016) PLOS ONE, 11 (1).

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Remacha A.F., Vilalta N., Sarda M.P., Millon J., Pujol-Moix N., Ziyatdinov A., Fontcuberta J., Nomdedeu J., Soria J.M., Souto J.C., Erythrocyte-related phenotypes and genetic sus-

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Scientific Production

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Roldan I., Marin F., Tello-Montoliu A., Roldan V., Anguita M., Ruiz Nodar J.M., Iniguez A., Gonzalez Juanatey J.R., Rodriguez Padial L., Badimon L., Mateo J., Vicente V., Gallego Cullere J., Masjuan J., Gonzalez-Armengol J.J., Marin-Martinez A., Coll-Vinent B.I.P., Casariego-Vales E., Llisterri-Caro J.L., Polo-Garcia J., Rodriguez-Roca G.C., On the Way to a Better Use of Anticoagulants in Nonvalvular Atrial Fibrillation. Proposed Amendment to the Therapeutic Positioning

Report UT/V4/23122013 En el camino de un mejor uso de los anticoagulantes en la fibrilación auricular no valvular. Propuesta de modificación del posicionamiento terapéutico UT/V4/23122013 (2016) REV ESP CARDIOL, 69 (6), 551-553.

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Vazquez-Santiago M., Ziyatdinov A., Pujol-Moix N., Brunel H., Morera A., Soria J.M., Souto J.C., Age and gender effects on 15 platelet phenotypes in a Spanish population (2016) COMPUT BIOL MED, 69, 226-233.

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Ziyatdinov A., Brunel H., Martinez-Perez A., Buil A., Perera A., Soria J.M., Solarius: An R interface to SOLAR for variance component analysis in pedigrees (2016) BIOINFORMATICS, 32 (12), 1901-1902.

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Other Publications

▶ Rubio-Terrés C., Soria J.M., Morange P.E., Souto J.C., Suchon P., Mateo J., Saut N., Rubio-Rodriguez D., Sala J., Gracia A., Pich S., Salas E. Economic Analysis of Thrombo inCode, a Clinical-Genetic Function for Assessing the Risk of Venous Thromboembolism. (2015) APPL HEALTH ECON HEALTH POLICY, 13, 233-42.

▶ Drobic F., Pineda A., Escudero J.R., Soria J.M., Souto J.C. Guía de práctica clínica para la prevención, diagnóstico y tratamiento de la enfermedad tromboembólica venosa en el deporte. (2015) APUNTS MED ESPORT, 50, 147-159.

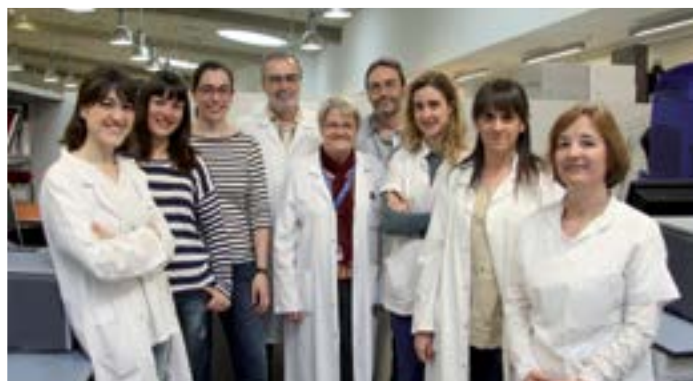
Cardiovascular Biochemistry

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Main Lines of Research

Atherosclerosis mechanisms

- ▶ Analysis of apolipoprotein J (apoJ) as a marker of CVR.
- ▶ Use of mimetic peptides derived from apoJ as therapeutic tools.
- ▶ Involvement of LDL(-) on lipid accumulation in cardiomyocytes and heart failure.

Inflammatory mechanisms induced by LDL(-) on monocytes from patients with diabetes

- ▶ 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

- ▶ Jordi Ordóñez Llanos. Red Cardiovascular. RD12/0042/0043. Instituto de Salud Carlos III. Duration: 2013-2017. 94,000 €.
- ▶ José Luis Sánchez Quesada. Contracte Programa d'Estabilització i Intensificació. CES12/023. Departament de Salut. Duration: 2013-2017. 120,000 €.
- ▶ 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 €.

- ▶ Jordi Ordóñez Llanos. Grup de Recerca d'Estructura de Lipoproteïnes, Dislipèmies i altres factors de risc de l'Arteriosclerosi. 2014 SGR 246. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.

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. L. Vila).
- ▶ Clinical and Translational Cardiology (Dr. J. Cinca).
- ▶ Lipids and Cardiovascular Pathology (Dr. C. Llorente).

External Collaborations**Research into atherosclerosis mechanisms**

- ▶ Dr. Petri Kovanen, Wihuri Research Institute, Helsinki, Finland.
- ▶ Dr. Kati Öörni, Wihuri Research Institute, Helsinki, Finland. Predoctoral stay by Montserrat Estruch (4 months).
- ▶ Dr. Olga Gursky, Boston University School of Medicine, Boston, USA. Post-doctoral stay by Anna Rull (6 months).
- ▶ Dr. Sandra Villegas, Biochemistry and Molecular Biology Department, UAB, Barcelona, Spain (ISCIII/FIS coordinated project under PI10/00265).

Research into diagnosis

- ▶ Dr. Daniel Podzamczar, HIV Unit, Infectious Disease Service, Bellvitge University Hospital, Barcelona, Spain (ATADAR, SPIRAL and BICOMBO clinical trials).
- ▶ Dr. Joan Sabater, IDIBELL (Impacto de una técnica de diálisis continua asociada a membranas con capacidad adsorptiva en pacientes con sepsis grave y fracaso renal agudo, ISCIII-FIS PI12-01562)
- ▶ 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, Cadiz, 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

- ▶ 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.
- ▶ ATERISC (Subclinical Atherosclerosis in virologically suppressed HIV-infected patients: prevalence and risk factors in the post-combination antiretroviral era), IDIBELL

- ▶ Mireia Cuartero Sala. Inhibidor tisular de la metaloproteína-2 (TIMP-2) y proteína de unión 7 del factor de crecimiento similar a la insulina (IGFBP-7) como biomarcadores precoces de disfunción renal aguda en el paciente crítico séptico. Universitat Autònoma de Barcelona. Director: Jordi Ordóñez Llanos.
- ▶ Mercedes García Alvarez. Neutrophil gelatinase-associated lipocalin (NGAL) como biomarcador de disfunción renal aguda en pacientes postoperados de cirugía cardiaca renal aguda en el paciente crítico séptico. Universitat Autònoma de Barcelona. Director: Jordi Ordóñez Llanos.

Cardiovascular Biochemistry

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Scientific Production

Alvarez-Garcia J., Vives-Borras M., Gomis P., Ordonez-Llanos J., Ferrero-Gregori A., Serra-Penaranda A., Cinca J., Electrophysiological Effects of Selective Atrial Coronary Artery Occlusion in Humans (2016) *CIRCULATION*, 133 (23), 2235-2242.

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Body R., Mueller C., Giannitsis E., Christ M., Ordonez-Llanos J., de Filippi C.R., Nowak R., Panteghini M., Jernberg T., Plebani M., Verschuren F., French J.K., Christenson R., Weiser S., Bendig G., Dilba P., Lindahl B., Hiestand B.C., Nowak R.M., Horner D., Dolci A., Zaninotto M., Manara A., Menassanch-Volker S., Jarausch J., Zaugg C., The Use of Very Low Concentrations of High-sensitivity Troponin T to Rule Out Acute Myocardial Infarction Using a Single Blood Test (2016) *ACAD EMERG MED*, 23 (9), 1004-1013.

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R., Pons-Llado G., Ordonez-Llanos J., Sionis A., High-sensitivity troponin T testing and coronary computed tomography angiography for rapid diagnosis of chest pain in the emergency department Troponina T de alta sensibilidad y angiotomografía computarizada coronaria para el diagnóstico rápido del dolor torácico en el servicio de urgencia (2016) *EMERGENCIAS*, 28 (1), 9-15.

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Estruch M., Sanchez-Quesada J.L., Ordonez-Llanos J., Benitez S., Inflammatory intracellular pathways activated by electro-negative LDL in monocytes (2016) *BBA-MOL CELL BIOL L*, 1861 (9), 963-969.

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Mendez A.B., Ordonez-Llanos J., Mirabet S., Galan J., Maestre M.L., Brossa V., Rivilla M.T., Lopez L., Koller T., Sionis A., Roig E., Prognostic Value of High-Sensitivity Troponin-T to Identify Patients at Risk of Left Ventricular Graft Dysfunction After Heart Transplantation (2016) *TRANSPL P*, 48 (9), 3021-3023.

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Mueller C., Giannitsis E., Christ M., Ordonez-Llanos J., deFilippi C., McCord J., Body R., Panteghini M., Jernberg T., Plebani M., Verschuren F., French J., Christenson R., Weiser S., Bendig G., Dilba P., Lindahl B., Multi-center Evaluation of a 0-Hour/1-Hour Algorithm in the Diagnosis of Myocardial Infarction with High-Sensitivity Cardiac Troponin T Presented at the European Society of Cardiology annual meeting, September

2014, Barcelona, Spain. (2016) *ANN EMERG MED*, 68 (1), 76-87.

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Pascual-Figal D.A., Casademont J., Lobos J.M., Pinera P., Bayes-Genis A., Ordonez-Llanos J., Consensus document and recommendations on the use of natriuretic peptides in clinical practice Documento de consenso y recomendaciones sobre el uso de los péptidos natriuréticos en la práctica clínica (2016) *REV CLIN ESP*, 216 (6), 313-322.

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Rull A., Jayaraman S., Gantz D.L., Rivas-Urbina A., Perez-Cuellar M., Ordonez-Llanos J., Sanchez-Quesada J.L., Gursky O., Thermal stability of human plasma electronegative low-density lipoprotein: A paradoxical behavior of low-density lipoprotein aggregation (2016) *BBA-MOL CELL BIOL L*, 1861 (9), 1015-1024.

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Angiology, Vascular Biology and Inflammation

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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).

External Collaborations

- ▶ Universidad Autónoma de Madrid, Spain.
- ▶ Dr. Juan Miguel Redondo. CNIC, Madrid, Spain.
- ▶ Dr. Alicia García Arroyo. CNIC, Madrid, Spain.
- ▶ Dr. Francesc-Xavier Avilés-Jurado. Otorhinolaryngology Department, Hospital Universitari de Tarragona Joan XXIII, ISPV, Universitat Rovira i Virgili, Tarragona, Spain.

Awards

- ▶ María Galán. ESC (European Society of Cardiology) contact initiative grant.

Active Grants

- ▶ Luis Vila Navarro. Red Cardiovascular. RD12/0042/0051. Instituto de Salud Carlos III. Duration: 2013-2017. 201,869.56 €.
- ▶ Luis Vila Navarro. Laboratorio de Angiología, Biología Vasculare e Inflamación (LABVI). 2014 SGR 402. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ María Galán Arroyo. Contratos Miguel Servet I 2015. MS15/00126. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500 €.
- ▶ 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 €.

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

Theses

- ▶ Adriana Agüero Medina. Papel pronóstico de la expresión transcripcional de CD45 en los carcinomas escamosos de cabeza y cuello. Universitat Autònoma de Barcelona. Directors: Xavier León Vintró, Mercedes Camacho Pérez de Madrid. Date of defense: 29 November 2016.
- ▶ Carolina Bothe González. Papel de la IL-1 en el riesgo de aparición de metástasis a distancia en pacientes con carcinoma escamoso de cabeza y cuello. Universitat Autònoma de Barcelona. Directors: Xavier León Vintró, Mercedes Camacho Pérez de Madrid, Luis Vila Navarro. Directors: 17 March 2016.

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Athanasiadis G., Arranz L., Ziyatdinov A., Brunel H., Camacho M., Malouf J., Sosa N.H.D., Vila L., Casademont J., Soria J.M., Exploring correlation between bone metabolism markers and densitometric traits in extended families from Spain (2016) BONE, 90, 1-6.

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Avendano M.S., Martinez-Revelles S., Aguardo A., Simoes M.R., Gonzalez-Amor M., Palacios R., Guillem-Llobat P., Vassallo D.V., Vila L., Garcia-Puig J., Beltran L.M., Alonso M.J., Cachofeiro M.V., Salices M., Briones A.M., Role of COX-2-derived PGE2 on vascular stiffness and function in hypertension (2016) BRIT J PHARMACOL, 173 (9), 1541-1555.

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Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases

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Main Lines of Research

- ▶ Physiopathological role of LRP family proteins in chronic diseases.
- ▶ Identification and characterization of transcription factors and genetic targets. Role of lipids and inflammation.
- ▶ 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.

Awards

- ▶ Lina Badimon. Vicepresident. European Society of Cardiology for scientific affairs ("Working Groups, Councils, Women in Cardiology and Grants") (2016-2018).
- ▶ Lina Badimon. Academic Corresponding by Election of the Royal Academy of Medicine of Catalonia, assigned to the First Section (basic, diagnostic and therapeutic sciences).
- ▶ July Carolina Romero Sandoval. Extraordinary Doctorate Award for the academic year 2014-15 of the Faculty of Pharmacy and Food Sciences of the University of Barcelona.
- ▶ R. Suades, T. Padró, J. Crespo, L. Badimon. Award of the Section of Vascular Risk and Cardiac Rehabilitation to the best communication. Congreso de las Enfermedades Cardiovasculares. Sociedad Española de Cardiología (SEC).
- ▶ Gemma Chiva, Lina Badimon. Award to the best poster. Eurothrombosis Summit 2016.
- ▶ Gemma Chiva. "Travel grant" to attend FCVB 2016.
- ▶ Gemma Chiva. "Travel grant" to attend Eurothrombosis 2016.

Theses

- ▶ Maria Teresa Bejar Serrano, Impacto de los factores de riesgo cardiovascular en las células madre mesenquimales derivadas de tejido adiposo, Universitat de Barcelona. Director: Lina Badimon. Date of defense: 19 December 2016.
- ▶ Oscar Rafael Escate Chávez, Expresión diferencial y función de microRNAs en patología cardiovascular. Universitat de Barcelona. Directors: Lina Badimon, Teresa Padró. Date of defense: 20 December 2016.

Collaborations

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 Fàbregas).
- ▶ Endocrinology, Diabetes and Nutrition (PI: Alberto de Leiva).
- ▶ Pharmacological Research in Humans (PI: Rosa M. Antonijoan).
- ▶ Angiology, Vascular Biology and Inflammation (PI: Luis Vila)
- ▶ Radiodiagnostics (Antoni Capdevila).

National Collaborations

- ▶ Department of Internal Medicine, Hospital Clínic, Barcelona (R. Estruch).
- ▶ Department of Cardiology, Thorax Institute, Hospital Clínic, University of Barcelona (Salvatore Brugaletta, Victoria Martín-Yuste, Clarissa Cola, Manel Sabaté).
- ▶ Fundación Jiménez Díaz, Madrid (Rodrigo Alonso, Pedro Mata).
- ▶ 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-Martinez).
- ▶ Department of Cardiology, Hospital La Paz, Madrid (I Roldán-Rabadán, R Peinado).
- ▶ Department of Cardiology, Hospital de Bellvitge, Barcelona (A Cequier-Fillat).
- ▶ 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 Clínic, University of Barcelona, Barcelona, Spain (Ros E).
- ▶ 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).

International Collaborations

- ▶ Experimental, Diagnostic and Speciality Medicine, University of Bologna, 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).

Books or chapters with ISBN

- ▶ Badimon L, Vilahur G, Cubedo J. Gene and cell therapy in heart failure. In: Current Approach to Heart Failure. Edit: Dorobantu M, Ruschitzka F, Metra M. Ed. Springer International Publishing pp: 335-354; 2016 (ISBN: 978-3-319-45236-4 (DOI 10.1007/978-3-319-45237-1).

Patents

- ▶ Lina Badimon Maestro, Judit Cubedo Ràfols, Gemma Vilahur, Teresa Padró Capmany, Prevention and/or treatment of ischemia or ischemia/reperfusion injury., EP16382111.9, European, 14/03/2016.
- ▶ Lina Badimon Maestro, Judit Cubedo Ràfols, Teresa Padró Capmany, Methods and kits for the diagnosis and risk stratification of patients with ischemia. EP16382167.1, European, 12/04/2016.

Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases

Active Grants

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- ▶ Gemma Vilahur Garcia. Remodelado estructural y funcional de las partículas HDL y su implicación en la salud cardiovascular: identificación de moduladores con potencial terapéutico. Programa Estatal de Investigación, Desarrollo e Innovación orientada a los Retos de la Sociedad. SAF2015-71653-R.
- ▶ Lina Badimon Maestro. Investigación y desarrollo clínico de una nueva molécula para el control de peso y prevención de la obesidad. Ministerio de Economía y Competitividad (RTC-2016-5317-1).
- ▶ Gemma Vilahur Garcia. L'administració intravenosa d'un inhibidor modificat de l'HMG-CoA-reductasa: una prometedora estratègia en la malaltia isquèmica del cor. Desentranar beneficis i mecanismes d'acció. Fundació La Marató de TV3
- ▶ Lina Badimon Maestro. Patología Molecular i Terapèutica de les Malalties Aterotrombòtiques. Ajuts de suport als Grups de Recerca de Catalunya. AGAUR 2014. SGR 1303.
- ▶ M. Borrell. Modulación de la inflamación por la vía canónica Wnt en los infartos agudos de miocardio. Proyecto de Investigación Básica en Cardiología. Sociedad Española de Cardiología (SEC) 2015.
- ▶ Lina Badimón Maestro. Identificación de nuevos biomarcadores en el manejo de la insuficiencia cardiaca Proyecto de Investigación Traslacional en Cardiología. Sociedad Española de Cardiología (SEC) 2016.
- ▶ Gemma Vilahur Garcia. Efecto de la dislipemia sobre el remodelado de las partículas HDL: aracterización de cambios funcionales y estructurales mediante aproximaciones -ómicas- e impacto sobre sus propiedades protectoras mediante estudios in vivo con resonancia magnética nuclear. Proyecto de Investigación Básica en Cardiología. Fundación Española del Corazón (FEC) 2016.
- ▶ Lina Badimon Maestro. Ticagrelor, does it afford cardioprotection in the setting of acute myocardial infarction? Astra Zeneca AB.
- ▶ Lina Badimon Maestro. Perfil transcriptómico de marcadores cardíacos y función endotelial en humanos: efecto derivado de la ingesta moderada de cerveza. Centro de Información Cerveza y Salud.
- ▶ Lina Badimon Maestro. Enfermedades Cardiovasculares (CIBER-CV). Instituto de Salud Carlos III Centro de Investigación Biomédica en Red (CIBER) CB16/11/00411.
- ▶ Lina Badimon Maestro. Red Terapia Celular (TERCEL). Fondo de Investigación Sanitaria - Redes Temáticas de Investigación Cooperativa - RETICS. RD16/0011/0018.
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Other Publications

- ▶ Pedro-Botet J., Badimon L., PCSK9: Structure and function. PCSK9 and low-density lipoprotein receptor. Mutations and their effects PCSK9: estructura y función. PCSK9 y receptor de lipoproteínas de baja densidad. Mutaciones y cambios derivados de estas. (2016) Clinica e Investigacion en Arteriosclerosis, 28, 3-8.
- ▶ Roffi M., Patrono C., Collet J.-P., Mueller C., Valgimigli M., Andreotti F., Bax J.J., Borger M.A., Brotons C., Chew D.P., Gencer B., Hasenfuss G., Kjeldsen K., Lancellotti P., Landmesser U., Mehilli J., Mukherjee D., et al. 2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. (2016) RUSS J CARDIOL, 131 (3), 9-63.

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Suades R., Padro T., Alonso R., Mata P., Badimon L., High levels of TSP1+/CD142+ platelet-derived microparticles characterise young patients with high cardiovascular risk and subclinical atherosclerosis. (2016) *THROMB HAEMOSTASIS*, 114 (6), 1310-1321.

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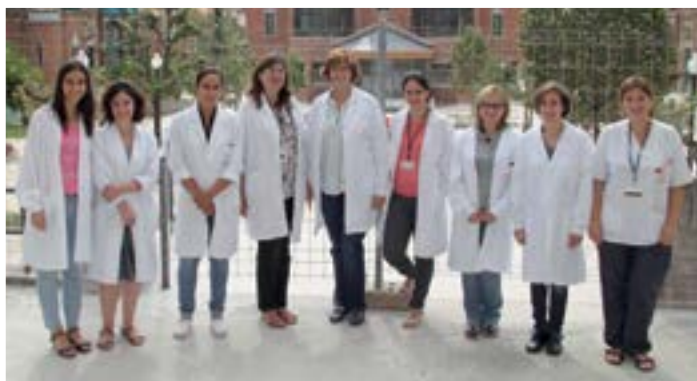
Biomarkers for Cardiovascular Disease

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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 vascular injury, atherothrombotic disease and/or ischaemic, coronary and cerebrovascular syndromes using postgenomic techniques.
- ▶ Generate new information on potential soluble biomarkers (in serum, plasma) and in microparticles circulating in blood, as well as in blood and/or vascular cells studies include proteomic and lipidomic techniques based on liquid chromatography and bidimensional electrophoresis, antibody array systems and mass spectrometry (MALDI-ToF/ToF; linear ion trap).
- ▶ 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 (biology of systems).
- ▶ Consolidate the lipidomic platform.
- ▶ Lead the Biobank in the SAFE-T European project.

Collaborations

External Collaborations

- ▶ Department of Cardiology, Thorax Institute, Hospital Clínic, University of Barcelona, Spain (Salvatore Brugaletta, Victoria Martín-Yuste, Clarissa Cola, Manel Sabaté).
- ▶ Fundación Jiménez Díaz, Madrid (Rodrigo Alonso, Pedro Mata).
- ▶ Red TERCEL.
- ▶ Member of IIB Sant Pau Biobank External Committee.
- ▶ Member of IIB Sant Pau Training Committee.
- ▶ Member of the Local Organizing Committee of the Congress of the MLTD (Valencia, 2014).
- ▶ Member of the Councilor Board of the European and Mediterranean League Against Thrombotic Diseases (EMLTD) since June 2015.
- ▶ Member of the Scientific Organizing Committee for the Annual Congress of the Spanish Society of Thrombosis and Haemostasis, Santiago de Compostela, Spain; 2016.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Patents</p>	<ul style="list-style-type: none"> ▶ Lina Badimon Maestro, Judit Cubedo Ràfols, Gemma Vilahur, Teresa Padró Capmany, Prevention and/or treatment of ischemia or ischemia/reperfusion injury., EP16382111.9, European, 14/03/2016. 	<ul style="list-style-type: none"> ▶ Lina Badimon Maestro, Judit Cubedo Ràfols, Teresa Padró Capmany, Methods and kits for the diagnosis and risk stratification of patients with ischemia. EP16382167.1, European, 12/04/2016. 	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Active Grants</p>	<ul style="list-style-type: none"> ▶ Teresa Padró. Biomarker for Cardiovascular Assessment in Europe (BiomarCaRE) FP7-Health-2011/ GA 278913. European Community FP7. Duration: 2011-2016. ▶ Teresa Padró. Molecular and Cellular pathology in atherosclerosis. Regulating role of the extracellular matrix. ISCIII. PI13/02850. Duration: 2014-2016. ▶ Teresa Padró. Identificación de nuevas dianas para inhibir el desarrollo de placa arteriosclerótica: abordaje traslacional en el estudio de la perilipina TIP47. Sociedad Española de Cardiología (SEC). Duration: 2014-2016. 	<ul style="list-style-type: none"> ▶ Teresa Padró. Cell Therapy Network (TerCel). RD12/0019/0026. Instituto de Salud Carlos III. Duration: Jan 2013-Dec 2016. ▶ Teresa Padró. Consolidated Research Group. AGAUR 2014 SGR 1303. Duration: Jan 2014-Dec 2016. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Grants Awarded in 2016</p>	<ul style="list-style-type: none"> ▶ Teresa Padró. Early Diagnosis of Renal Insufficiency in Acute Heart Failure (EDRIAHF). Fundació la Marató de TV3 (20153110). Duration: 2016-2018. ▶ Teresa Padró. Investigación y desarrollo clínico de una nueva molécula para el control de peso y prevención de la obesidad. Ministerio de Economía y Competitividad (RTC-2016-5317-1). Duration: 2016-2018. 	<ul style="list-style-type: none"> ▶ Gemma Vilahur, Teresa Padró. Efecto de la dislipemia sobre el remodelado de las partículas HDL: caracterización de cambios funcionales y estructurales mediante aproximaciones –ómicas- e impacto sobre sus propiedades protectoras mediante estudios in vivo con resonancia magnética nuclear. Fundación Española del Corazón (FEC) – Proyecto de Investigación Básica en Cardiología 2016. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Awards</p>	<ul style="list-style-type: none"> ▶ Suades R, Padró T, Crespo J, Alonso R, Mata P, Badimon L. El perfil de microvesículas circulantes de origen plaquetario y leucocitario predice eventos cardiovasculares mayores en pacientes de alto riesgo isquémico sin enfermedad cardiovascular previa". Best communication. Sección de Riesgo Vascular y Rehabilitación Cardíaca. Congreso de las Enfermedades Cardiovasculares" (SEC). Zaragoza 2016. 	<ul style="list-style-type: none"> ▶ R. Suades. Role of Microparticles in Atherothrombosis. Extraordinary doctoral prize. Dept. Ciències Experimentals i de la Salut. Universitat Pompeu Fabra. Academic year 2014-2015. ▶ R. Suades. Role of Microparticles in Atherothrombosis. Enrique Fuentes Quintana Prize to doctoral theses (category of Health Sciences). 	
<p>*TIF: 70.5740 **MIF: 5.0410</p>			
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Scientific Production</p>	<p>Arderiu G., Espinosa S., Pena E., Aledo R., Badimon L., PAR2-SMAD3 in microvascular endothelial cells is indispensable for vascular stability via tissue factor signaling (2016) <i>J MOL CELL BIOL</i>, 8 (3), 255-270. IF: 5.9880</p> <p>Badimon L., Borrell-Pages M., Padro T., Atheroma burden and morphology in women (2016) <i>CURR PHARM DESIGN</i>, 22 (25), 3915-3927. IF: 2.6110</p> <p>Badimon L., Suades R., Fuentes E., Palomo I., Padro T., Role of platelet-derived microvesicles as crosstalk mediators in atherothrombosis and future pharmacology targets: A link between inflammation, atherosclerosis, and thrombosis (2016) <i>FRONT PHARMACOL</i>, 7 (AUG). IF: 4.4000</p>	<p>Bejar M.T., Ferrer-Lorente R., Pena E., Badimon L., Inhibition of Notch rescues the angiogenic potential impaired by cardiovascular risk factors in epicardial adipose stem cells (2016) <i>FASEB J</i>, 30 (8), 2849-2859. IF: 5.4980</p> <p>Bejar M.T., Ferrer-Lorente R., Pena E., Badimon L., Inhibition of Notch rescues the angiogenic potential impaired by cardiovascular risk factors in epicardial adipose stem cells (2016) <i>FASEB J</i>, 30 (8), 2849-2859. IF: 5.4980</p> <p>Chiva-Blanch G., Suades R., Crespo J., Pena E., Padro T., Jimenez-Xarrie E., Marti-Fabregas J., Badimon L., Microparticle shedding from neural progenitor cells and vascular compartment cells is increased in ischemic stroke (2016) <i>PLOS ONE</i>, 11 (1). IF: 2.8060</p>	<p>Chiva-Blanch G., Crespo J., Suades R., Arderiu G., Padro T., Vilahur G., Cubedo J., Corella D., Salas-Salvado J., Aros F., Martinez-Gonzalez M.-A., Ros E., Fito M., Estruch R., Badimon L., CD142+/CD61+, CD146+ and CD45+ microparticles predict cardiovascular events in high risk patients following a Mediterranean diet supplemented with nuts (2016) <i>THROMB HAEMOSTASIS</i>, 116 (1), 103-114. IF: 5.6270</p> <p>Chiva-Blanch G., Suades R., Padro T., Vilahur G., Pena E., Ybarra J., Pou J.M., Badimon L., Microparticle Shedding by Erythrocytes, Monocytes and Vascular Smooth Muscular Cells Is Reduced by Aspirin in Diabetic Patients El ácido acetilsalicílico reduce la liberación de micropartículas eritrocitarias, monocitárias y de células del músculo liso vascular en pacientes diabéticos (2016) <i>REV ESP CARDIOL</i>, 69 (7), 672-680. IF: 4.4850</p>

*Total Impact Factor **Mean Impact Factor

Biomarkers for Cardiovascular Disease

*TIF: 70.5740 **MIF: 5.0410

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Cubedo J., Vilahur G., Casani L., Mendieta G., Gomez-Jabalera E., Juan-Babot O., Padro T., Badimon L., Targeting the molecular mechanisms of ischemic damage: Protective effects of alpha-crystallin-B (2016) *INT J CARDIOL*, 215, 406-416.

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Escate R., Padro T., Badimon L., LDL accelerates monocyte to macrophage differentiation: Effects on adhesion and anoikis (2016) *ATHEROSCLEROSIS*, 246, 177-186.

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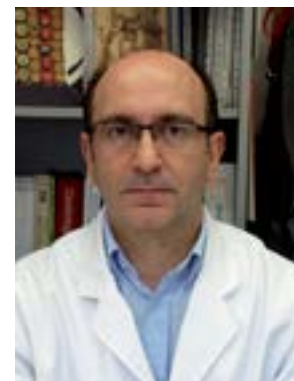
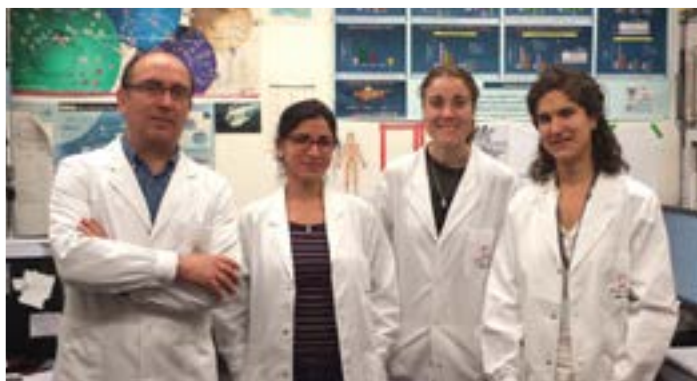
Atherosclerosis and Vascular Biology

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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).

External Collaborations

- ▶ Francisco Sánchez Madrid. Hospital de la Princesa-UAM.
- ▶ E. Rodríguez Boulan (Cornell University).
- ▶ Simón Méndez Ferrer (Cambridge Stem Cell Institute).
- ▶ Roxana Carare (University of Southampton).
- ▶ Anna Planas (IIBB-CSI).
- ▶ Pablo García de Frutos (IIBB-CSI).
- ▶ José Luis de la Pompa. Centro Nacional de Investigaciones Cardiovasculares, CNIC.

- ▶ 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. Centro Nacional de Investigaciones Cardiovasculares, CNIC.
- ▶ Juan Miguel Redondo. Centro Nacional de Investigaciones Cardiovasculares, CNIC.
- ▶ Victoria Cachofeiro. Universidad Complutense de Madrid, UCM.
- ▶ Jose Luis Martín Ventura. Fundación Jiménez Díaz-UAM.

Awards	<ul style="list-style-type: none"> ▶ Mención especial a la comunicación oral titulada: La inhibición de la Fibulina 5 promueve el desarrollo del aneurisma de aorta abdominal. Autores: Rodríguez C, Varona S, Martí-Pàmies I, Galan M, Orriols M, Escudero JR, Martín-Ventura JL, Camacho M, Martínez-González J. - XXIX Congreso Nacional de la Sociedad Española de Arteriosclerosis (SEA). (18-20 mayo de 2016, Granada).
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Patents	<ul style="list-style-type: none"> ▶ José Martínez González, Cristina Rodríguez, Ingrid Martí Pàmies, Modelo animal para aneurisma aórtico y sus usos, P201631548, Nacional, 07/12/2016.
Active Grants	<ul style="list-style-type: none"> ▶ José Martínez González. Red de Investigación cardiovascular (RIC). MINECO-ISCIII. Grupo referencia RD12/0042/0053. Duration: Jan 2013-Dec 2016. €202,687. ▶ José Martínez González. Análisis de las propiedades anti-apoptóticas del receptor nuclear NOR-1 en la cardiopatía isquémica: papel de cIAP2. Fundación Española del Corazón (FEC)-Sociedad Española de Cardiología (SEC). Duration: Oct 2015-Dec 2016. €18,000. ▶ José Martínez González. Immunoregulatory molecules and miRNAs as targets in coronary heart disease and acute coronary syndrome. Fundació La Marató de TV3 (Ref. 20152330 31). Duration: Jan 2016-Dec 2018. €300,000. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>
Grants Awarded in 2016	<ul style="list-style-type: none"> ▶ José Martínez González. El receptor nuclear NOR-1 en el remodelado cardiaco y vascular: análisis de mecanismos fisiopatológicos y validación de nuevos modelos animales de utilidad preclínica. MINECO. SAF2015-64767-R. Duration: Jan 2016-Dec 2018. €84,700. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>
Other Publications	<ul style="list-style-type: none"> ▶ Orriols M., Varona S., Aguilo S., Galan M., Martinez Gonzalez J., Rodriguez C., Inflammation inhibits vascular fibulin-5 expression: Involvement of transcription factor SOX9 La inflamación inhibe la expresión vascular de la fibulina-5: implicación del factor de transcripción SOX9. (2016) Clinica e Investigacion en Arteriosclerosis, 28 (6), 271-280.

Atherosclerosis and Vascular Biology

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Scientific Production

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Alonso J., Galan M., Marti-Pamies I., Romero J.M., Camacho M., Rodriguez C., Martinez-Gonzalez J., NOR-1/NR4A3 regulates the cellular inhibitor of apoptosis 2 (ciAP2) in vascular cells: Role in the survival response to hypoxic stress. (2016) *SCI REP-UK*, 6.

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tory cell migration in atherosclerosis. (2016) *NAT COMMUN*, 7.

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Ferran B., Marti-Pamies I., Alonso J., Rodriguez-Calvo R., Aguilo S., Vidal F., Rodriguez C., Martinez-Gonzalez J., The nuclear receptor NOR-1 regulates the small muscle protein, X-linked (SMPX) and myotube differentiation. (2016) *SCI REP-UK*, 6.

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Galan M., Varona S., Orriols M., Rodriguez J.A., Aguilo S., Dilme J., Camacho M., Martinez-Gonzalez J., Rodriguez C., Induction of histone deacetylases (HDACs) in human abdominal aortic aneurysm: Therapeutic potential of HDAC inhibitors. (2016) *DIS MODEL MECH*, 9 (5), 541-552.

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Martinez-Martinez E., Rodriguez C., Galan M., Miana M., Jurado-Lopez R., Bartolome M.V., Luaces M., Islas F., Martinez-Gonzalez J., Lopez-Andres N., Cachofeiro V., The lysyl oxidase inhibitor (β -aminopropionitrile) reduces leptin profibrotic effects and ameliorates cardiovascular remodeling in diet-induced

obesity in rats. (2016) *J MOL CELL CARDIOL*, 92, 96-104.

IF: 5.6800

Nus M., Martinez-Poveda B., MacGrogan D., Chevre R., D'Amato G., Sbroglio M., Rodriguez C., Martinez-Gonzalez J., Andres V., Hidalgo A., De La Pompa J.L., Endothelial Jag1-RBPJ signalling promotes inflammatory leucocyte recruitment and atherosclerosis. (2016) *CARDIOVASC RES*, 112 (2), 568-580.

IF: 5.8780

Orriols M., Varona S., Marti-Pamies I., Galan M., Guadall A., Escudero J.R., Martin-Ventura J.L., Camacho M., Vila L., Martinez-Gonzalez J., Rodriguez C., Down-regulation of Fibulin-5 is associated with aortic dilation: Role of inflammation and epigenetics. (2016) *CARDIOVASC RES*, 110 (3), 431-442.

IF: 5.8780

Regulation of Cardiac Rhythm and Contraction

Coordinator

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Veronica
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Main Lines of Research

- ▶ Receptor-mediated changes in intracellular calcium homeostasis in atrial fibrillation.
- ▶ Contribution of genetic variants to electrical remodelling and arrhythmogenesis.
- ▶ Effects of development and ageing on calcium handling in cardiac myocytes.
- ▶ Functional effects of lipid accumulation in cardiomyocytes.

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), the detection and role of Reactive Oxygen Species in diseased cardiomyocytes, and the role of telomere length in cardiac senescence and regeneration.
- ▶ Achieve international funding for incorporation of scientific expertise and participation in multidisciplinary international research projects.

Collaborations

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.
- ▶ Blas Echebarria. Departament de Física Aplicada, Universitat Politècnica de Catalunya.
- ▶ Raul Benitez. Enginyeria de Sistemes, Automàtica i Informàtica Industrial, Universitat Politècnica de Catalunya.

- ▶ Vicente Andrés. Fisiopatología Cardiovascular Molecular y Genética, CNIC.

- ▶ Ignacio Flores. Regeneración y envejecimiento, CNIC.

- ▶ Leif Hove-Madsen, Researcher Collaborator at the Red de Investigación Cardiovascular (RIC).

International Collaborations

- ▶ SR Wayne Chen. Department of Physiology and Pharmacology, University of Calgary, Canada.

- ▶ Glen F Tibbitts. 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.

Other Publications

- ▶ Rivera-Torres J, Calvo CJ, Llach A, Guzmán-Martínez G, Caballero R, González-Gómez C, Jiménez-Borreguero LJ, Guadix JA, Osorio FG, López-Otín C, Herraiz-Martínez A, Cabello N, Vallmitjana A, Benítez R, Gordon LB, Jalife J, Pérez-Pomares JM, Tamargo J, Delpón E, Hove-Madsen L, Filgueiras-Rama D, Andrés V. Cardiac electrical defects in progeroid mice and Hutchinson-Gilford progeria syndrome patients with nuclear lamina alterations. *Proc Natl Acad Sci U S A*. 2016 Nov 15;113(46):E7250-E7259. Epub 2016 Oct 31.
- ▶ Zhong X, Sun B, Vallmitjana A, Mi T, Guo W, Ni M, Wang R, Guo A, Duff HJ, Gillis AM, Song LS, Hove-Madsen L, Benitez R, Chen SR. Suppression of ryanodine receptor function prolongs Ca²⁺ release refractoriness and promotes cardiac alternans in intact hearts. *Biochem J*. 2016 Nov 1;473(21):3951-3964. Epub 2016 Aug 31.

Theses

- ▶ Adela Herraiz Martínez, Effects of Ageing and Risk Variants at 4q25 on Calcium Homeostasis in Cardiac Myocytes. Universitat de Barcelona. Director: Leif Hove-Madsen. Date of defense: 20 December 2016.

Patents

- ▶ Hove Madsen, Leif; Vallmitjana Lees, Alexander; Benítez Iglesias, Raúl, Método implementado por ordenador para caracterización dinámica de células en cultivos celulares y programas informáticos para llevar a cabo el método, ES 2 532 746 B1, B1, 14/01/2016.

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Genge C.E., Lin E., Lee L., Sheng X., Rayani K., Gunawan M., Stevens C.M., Li A.Y., Talab S.S., Claydon T.W., Hove-Madsen L., Tibbits G.F., The zebrafish heart as a model of mammalian cardiac function. (2016) *REV PHYSIOL BIOCH P*, 171, 99-136.

IF: 4.7690

Lozano-Velasco E., Hernandez-Torres F., Daimi H., Serra S.A., Herraiz A., Hove-Madsen L., Aranega A., Franco D., Pitx2 impairs calcium handling in a dose-dependent manner by modulating Wnt signalling. (2016) *CARDIOVASC RES*, 109 (1), 55-66.

IF: 5.8780

Molina C.E., Llach A., Herraiz-Martínez A., Tarifa C., Barriga M., Wiegerinck R.F., Fer-

nandes J., Cabello N., Vallmitjana A., Benitez R., Montiel J., Cinca J., Hove-Madsen L., Prevention of adenosine A2A receptor activation diminishes beat-to-beat alternation in human atrial myocytes. (2016) *BASIC RES CARDIOL*, 111 (1), 1-15.

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Rivera-Torres J., Calvo C.J., Llach A., Guzman-Martínez G., Caballero R., Gonzalez-Gomez C., Jimenez-Borreguero L.J., et al. Cardiac electrical defects in progeroid mice and Hutchinson-Gilford progeria syndrome patients with nuclear lamina alterations. (2016) *PNATLACAD SCI USA*, 113 (46), E7250-E7259.

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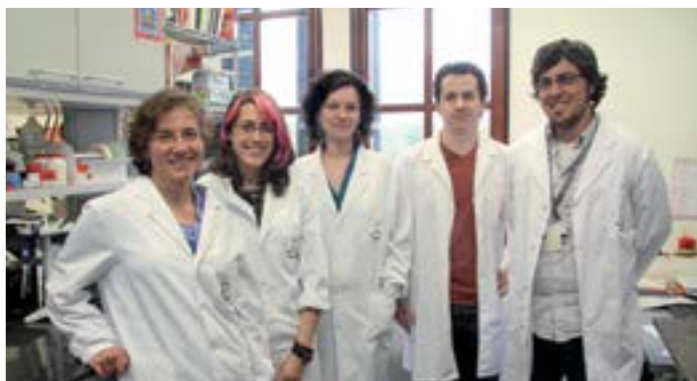
Lipids and Cardiovascular Pathology

Coordinator

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Veja, 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

- ▶ Develop transgenic mice with tissue-specific LRP1 modulation to proceed to in-depth analysis of LRP1-dependent mechanisms.
- ▶ Maintain and amplify relationship with IIB ant Pau groups regarding translation in this research area.
- ▶ Maintain and strengthen international collaborations or set up future applications for european funding.
- ▶ Establish collaborations with companies with the aim of developing new products useful for prognosis, diagnosis and treatment.

Awards

- ▶ Circulating microRNAs as emerging cardiac biomarkers: response to acute exercise in healthy subjects and implications for health and performance. Third place in XVII National Sports Medicine Research Award, Spain.
- ▶ Elena Revuelta-Lopez. Implicación del receptor LRP1 en el remodelado vascular y cardíaco. Extraordinary doctorate prize 2015-2016. Universitat de Barcelona.
- ▶ David de Gonzalo-Calvo. ESC Council on Basic Cardiovascular Science Travel Grant.
- ▶ ESC Council on Basic Cardiovascular Science. Florence, Italy. 17/03/2016.
- ▶ David de Gonzalo-Calvo. Young Investigator Award (Finalist). ESC Council on Basic Cardiovascular Science. Florence, Italy. 17/03/2016.
- ▶ David de Gonzalo-Calvo. Young Investigator Fellowship 2016. European Atherosclerosis Society (EAS). Innsbruck, Austria.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Cardiovascular Biochemistry (PI: Jordi Ordóñez).
- ▶ Regulation of Cardiac Rhythm and Contraction (PI: Leif Hove-Madsen).
- ▶ 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).
- ▶ Oncogenesis and Antitumour Drug (PI: Ramon Mangués).
- ▶ Enrique Lerma (researcher of Molecular Pathology of Gynecologic Cancer).
- ▶ Lluís Guirado (researcher at Fundació Puigvert).

National Collaborations

- ▶ Dr. Bayés-Genís. Grupo ICREC (Insuficiencia Cardíaca y Regeneración Cardíaca). Hospital Germans Trias i Pujol. Badalona.
- ▶ Marta Casado Pinna. Unidad de Patología Médica Experimental. Consejo Superior de Investigaciones Científicas. Valencia.
- ▶ Francisco Tinahones. Endocrinology Department, Biomedical Research Laboratory. Hospital Virgen de la Victoria, Málaga.
- ▶ Eduardo Iglesias Gutiérrez. Grupo ITS (Intervenciones Traslacionales para la Salud). Universidad de Oviedo.
- ▶ Rocío Toro. Departamento de Medicina. Facultad de Medicina, Universidad de Cádiz.

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

- ▶ InnoPharma BioFarma-USEF Research Group. University of Santiago de Compostela.
- ▶ 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 €.
- ▶ Cardiovascular Research Center, CSIC-ICCC, IIB-SantPau. Acumulación miocárdica de colesterol esterificado, LRP1 y disfunción cardíaca en diabetes tipo 2. Instituto de Salud Carlos III. FIS PI14/01729. Duration: 01/01/2014-30/12/2017.
- ▶ Cardiovascular Research Center, CSIC-ICCC, IIB-SantPau. Identification of miRNAs implicated in the formation of foam cells in

vascular cells: pathophysiological mechanisms and therapeutic potential". Ayudas Merck Serono de Investigación 2014 en Cardiometabolismo. Duration: 30/06/2014-01/07/2016.

- ▶ Cardiovascular Research Center, CSIC-ICCC, IIB-SantPau. LRP1 as a source of therapeutic, diagnostic and prognostic tools in cardiovascular disease. Fundació Marató TV3-Malalties Cardiovasculars. 2015. Duration: 01/01/2016-31/12/2019.

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

Grants Awarded in 2016

- ▶ 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 predictius, i avaluació d'estratègies de prevenció". AGAUR-Generalitat de Catalunya_PERIS 2016. Coordinador centre: IMIM.
- ▶ Cardiovascular Research Center, CSIC-ICCC, IIB-SantPau. Studies referred to the role of LRP1 function and subcellular distribution on lipid droplet formation in cardiomyocytes exposed to hypoxia and modified LDL". European Foundation for the Study of Diabetes (EFSD). Duration: 01/03/2016-31/05/2016. Collaboration with CIBICI-CONICET-FCQ-UNC, Córdoba, Argentina.

- ▶ Cardiovascular Research Center, CSIC-ICCC, IIB-SantPau. Estudio de los aspectos moleculares y celulares que regulan el tráfico intracelular del receptor de la alfa 2-macroglobulina, LRP1, y sus implicaciones en el control de la migración celular". PICT-2012-2607. Collaboration with CIBICI-CONICET-FCQ-UNC, Córdoba, Argentina. Duration: 01/06/2013-28/05/2016. €29,728.

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

Lipids and Cardiovascular Pathology

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Scientific Production

De Gonzalo-Calvo D, Vilades D, Nasarre L, Carreras F, Leta R, Garcia-Moll X, Llorente-Cortes V. Circulating levels of soluble low-density lipoprotein receptor-related protein 1 (sLRP1) as novel biomarker of epicardial adipose tissue (2016) INT J CARDIOL, 223, 371-373.

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De Gonzalo-Calvo D, Kenneweg F, Bang C, Toro R, Van Der Meer R.W., Rijzewijk L.J., Smit J.W., Lamb H.J., Llorente-Cortes V, Thum T., Circulating long non-coding RNAs as bio-

markers of left ventricular diastolic function and remodelling in patients with well-controlled type 2 diabetes (2016) SCI REP-UK, 6.

IF: 4.2590

De Gonzalo-Calvo D, Kenneweg F, Bang C, Toro R, van der Meer RW, Rijzewijk LJ, Smit JW, Lamb HJ, Llorente-Cortes V, Thum T. Circulating Long Noncoding RNAs in Personalized Medicine: Response to Pioglitazone Therapy in Type 2 Diabetes. J AM COLL CARDIOL. 2016 Dec 27;68(25):2914-2916.

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Perez-Serra A, Toro R, Sarquella-Brugada G, de Gonzalo-Calvo D, Cesar S, Carro E, Llorente-Cortes V, Iglesias A, Brugada J, Brugada R, Campuzano O., Genetic basis of dilated cardiomyopathy (2016) INT J CARDIOL, 224, 461-472.

IF: 6.1890

Other Publications

- ▶ De Gonzalo-Calvo D, Cenarro A, Civeira F, Llorente-Cortes V. microRNA expression profile in human coronary smooth muscle cell-derived microparticles is a source of biomarkers. Clin Investig Arterioscler. 2016 Jul-Aug;28(4):167-77.

AREA 2

Genetic, Metabolic Inflammatory Disease

96 Genetic Diseases

98 Metabolic Bases of Cardiovascular Risk

102 Inflammatory Diseases

104 Endocrinology, Diabetes and Nutrition

110 Pituitary Gland Disorders

114 Digestive Diseases

Genetic Diseases

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Gallano Petit, Pia FGS
González Quereda, Lidia CIBERER
Lasa Laborde, Adriana María FGS
Riera Armengol, Pau IR
Rodríguez Fernández, María Jose FGS
Sullivan, Ivana Gabriela IR
Surrallés Calonge, Jordi FGS



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.

Active Grants

- ▶ Maria Pia Gallano Petit. Elaboración de paneles de diagnóstico molecular en patología monogénica hereditaria mediante el sistema de nanofluidos y secuenciación masiva. PI11/02586. Instituto de Salud Carlos III. Duration: 2012-2016. 78,250 €.
- ▶ Montserrat Baiget Bastus. Servei de Genètica. 2014 SGR 403. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ Ana Sebio Garcia. Contratos Juan Rodés 2014. JR14/00006. Instituto de Salud Carlos III. Duration: 2015-2018. 135,000 €.
- ▶ Lidia Gonzalez 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 €.
- ▶ 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 €.

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

Grants Awarded in 2016

- ▶ Pau Riera Armengol, Marcadors farmacogenètics de resposta/resistència a les teràpies biològiques (anti-EGFR) en càncer colorectal, 2016 FI_B 00368. Agència de Gestió d'Ajuts Universitaris i de Recerca. Durantion: 2016-2019, 40,806 €.

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

Awards

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

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Scientific Production

Cea L.A., Puebla C., Cisterna B.A., Escamilla R., Vargas A.A., Frank M., Martinez-Montero P., Prior C., Molano J., Esteban-Rodriguez I., Pascual I., Gallano P., Lorenzo G., Pian H., Barrio L.C., Willecke K., Saez J.C., Fast skeletal myofibers of mdx mouse, model of Duchenne muscular dystrophy, express connexin hemichannels that lead to apoptosis (2016) CELL MOL LIFE SCI, 73 (13), 2583-2599.

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Diaz-Manera J., Alejaldre A., Gonzalez L., Olive M., Gomez-Andres D., Muelas N., Vilchez J.J., Llauger J., Carbonell P., Marquez-Infante C., Fernandez-Torron R., Poza J.J., Lopez de Munain A., Gonzalez-Quereda L., Mirabet S., Clarimon J., Gallano P., Rojas-Garcia R., Gallardo E., Illa I., Muscle imaging in muscle dystrophies produced by mutations in the EMD and LMNA genes (2016) NEUROMUSCULAR DISORD, 26 (1), 33-40.

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Garcia Duran M., Costa S., Sarraseca J., de la Roja N., Garcia J., Garcia I., Rodriguez M.J., Generation of porcine reproductive and respiratory syndrome (PRRS) virus-like-particles (VLPs) with different protein composition (2016) J VIROL METHODS, 236, 77-86.

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Martin-Blanco A., Ferrer M., Soler J., Arranz M.J., Vega D., Calvo N., Elices M., Sanchez-Mora C., Garcia-Martinez I., Salazar J., Carmona C., Bauza J., Prat M., Perez V., Pascual J.C., The role of hypothalamus-pituitary-adrenal genes and childhood trauma in borderline personality disorder (2016) EUR ARCH PSY CLIN N, 266 (4), 307-316.

IF: 3.5690

Medrano S., Monges S., Gravina L.P., Alias L., Mozzoni J., Araoz H.V., Bernal S., Moresco A., Chertkoff L., Tizzano E., Genotype-phenotype correlation of SMN locus genes in spinal muscular atrophy children from Argentina (2016) EUR J PAEDIATR NEURO, 20 (6), 910-917.

IF: 2.0130

Moya P., Salazar J., Arranz M.J., Diaz-Torne C., Del Rio E., Casademont J., Corominas H., Baiget M., Methotrexate pharmacokinetic genetic variants are associated with outcome in rheumatoid arthritis patients (2016) PHARMACOGENOMICS, 17 (1), 11-25.

IF: 2.3500

Nogales V., Reinhold W.C., Varma S., Martinez-Cardus A., Moutinho C., Moran S., Heyn H., Sebio A., Barnadas A., Pommier Y., Esteller M., Epigenetic inactivation of the putative DNA/RNA helicase SLFN11 in human cancer confers resistance to platinum drugs (2016) ONCOTARGET, 7 (3), 3084-3097.

IF: 5.1680

Other Publications

- ▶ Loureiro Amigo J., Gallardo E., Gallano P., Grau-Junyent J.M., Dysferlinopathy masquerading as a refractory polymyositis. (2015) MED CLIN-BARCELONA, 145 (9), 414-415.

Metabolic Bases of Cardiovascular Risk

Coordinator

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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

- ▶ Analyse the effects of diabetes mellitus and hyperhomocysteinaemia in reverse cholesterol transport in vivo.
- ▶ Determine the pathogenic relevance of alterations in cholesterol metabolism in diabetic retinopathy.
- ▶ Compare the effects of niacine and fenofibrate in the HDL of patients with type 2 diabetes.
- ▶ Study anti-cancer mechanisms of HDL genetic modification and phytosterol consumption.
- ▶ Develop new molecular techniques to diagnose metabolic inherited diseases to be used in the clinical laboratory.

Awards

- ▶ Antonio Pérez Pérez. Premio Rodríguez Miñón de Investigación Clínica Senior. Fundación SED de la Sociedad Española de Diabetes. 22 Apr 2016.

Theses

- ▶ Teresa Laura Errico. Metabolismo y funcionalidad de HDL en un modelo murino (db/db) de diabetes y efectos de la sobreexpresión de apolipoproteína A-I humana. Universitat Autònoma de Barcelona. Co-director: Josep Julve Gil. Date of defense: 16 Dec 2016.
- ▶ Cristina Colom Comi. Aterosclerosis silenciosa en la diabetes tipo 1. Prevalencia y perfil de riesgo. Universitat Autònoma de Barcelona. Directors: Antonio Pérez Pérez. Date of defense: 2 Nov 2016.

Transfer Products

- ▶ Miguel Ángel Royo-Bordonada, Pedro Armario, José María Lobos Bejarano, Juan Pedro-Botet, Fernando Villar Alvarez, Roberto Elosua, Carlos Brotons Cuixart, Olga Cortés, Benilde Serrano, Miguel Camafort Babkowski, Antonio Gil Núñez, Antonio Pérez, Antonio Maiques, Ana de Santiago Nocito, Almudena Castro, Eduardo Alegría, Ciro Baeza (13), María Herranz, Susana Sans, Pilar Campos, en nombre del Comité Español Interdisciplinario para la Prevención Cardiovascular (CEIPC). Adaptación española de las guías europeas de 2016 sobre prevención de la enfermedad cardiovascular en la práctica clínica. Simultaneous publication in the journals body of expression of the 15 scientific societies of CEIPC on paper or electronic online support and in the Revista Española de Salud Pública.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Enrique Lerma, Eugenia Mato, Concepción Llorente-Cortes. 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).

External Collaborations

- ▶ Dr. Jesús Osada. Universidad de Zaragoza y 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.
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- ▶ Dr. Jose Luís Martín-Ventura. Fundación Jimenez-Díaz and CIBERCV, Madrid, Spain.
- ▶ Dres. Fernando Civeira and 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

- ▶ Juan Carlos Escola Gil. Estrategias terapéuticas y nutricionales basadas en la mejora de las funciones antioxidante y antiinflamatoria de las HDL en la diabetes mellitus tipo 2 y el cáncer de mama. PI12/00291. Instituto de Salud Carlos III. Duration: 2013-2016. 164,000 €.
- ▶ Josep Julve Gil. Contratos Miguel Servet 2013 - Tipo I. MS13/00070. Instituto de Salud Carlos III. Duration: 2014-2019. 202,500 €.
- ▶ 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 €.
- ▶ Karen Alejandra Mendez Lara. Estratègies terapèutiques i nutricionals basades en la milloria 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 €.

- ▶ 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: 2015-2017. 76,500 €.
- ▶ 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 €.
- ▶ 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: 2016-2017. 8,181.82 €.

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

Metabolic Bases of Cardiovascular Risk

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Scientific Production

Alvarez P., Genre F., Iglesias M., Augustin J.J., Tamayo E., Escola-Gil J.C., Lavin B., Blanco-Vaca F., Merino R., Merino J., Modulation of autoimmune arthritis severity in mice by apolipoprotein E (ApoE) and cholesterol. (2016) *CLIN EXP IMMUNOL*, 186 (3), 292-303. **IF: 3.4100**

Amigo N., Mallol R., Heras M., Martinez-Hervas S., Blanco-Vaca F., Escola-Gil J.C., Plana N., Yanes O., Masana L., Correig X., Lipoprotein hydrophobic core lipids are partially extruded to surface in smaller HDL: "herniated" HDL, a common feature in diabetes. (2016) *SCI REP-UK*, 6. **IF: 4.2590**

Amor A.J., Catalan M., Perez A., Herreras Z., Pinyol M., Sala-Vila A., Cofan M., Gilabert R., Ros E., Ortega E., Nuclear magnetic resonance lipoprotein abnormalities in newly-diagnosed type 2 diabetes and their association with preclinical carotid atherosclerosis. (2016) *ATHEROSCLEROSIS*, 247, 161-169. **IF: 4.2390**

Caimari F., Gonzalez C., Ramos A., Chico A., Cubero J.M., Perez A., Efficacy of a hyperglycemia treatment program in a Vascular Surgery Department supervised by Endocrinology Eficacia de un programa de tratamiento de la hiperglucemia en un Servicio de Cirugía Vascular supervisado por Endocrinología. (2016) *CIR ESPAN*, 94 (7), 392-398. **IF: 1.2760**

Cedo L., Garcia-Leon A., Baila-Rueda L., Santos D., Grijalva V., Martinez-Cignoni M.R., Carbo J.M., Metso J., Lopez-Vilaro L., Zorzano A., Valledor A.F., Cenarro A., Jauhiainen M., Lerma E., Fogelman A.M., Reddy S.T., Escola-Gil J.C., Blanco-Vaca F., ApoA-I mimetic administration, but not increased apoA-I-containing HDL, inhibits tumour growth in a mouse model of inherited breast cancer. (2016) *SCI REP-UK*, 6. **IF: 4.2590**

Fernandes V., Santos M.J., Perez A., Statin-related myotoxicity. (2016) *ENDOCRINOL NUTR*, 63 (5), 239-249. **IF: 1.1060**

Fernandez-Suarez M.E., Escola-Gil J.C., Pastor O., Davalos A., Blanco-Vaca F., Lasuncion M.A., Martinez-Botas J., Gomez-Coronado D., Clinically used selective estrogen receptor modulators affect different steps of macrophage-specific reverse cholesterol transport. (2016) *SCI REP-UK*, 6. **IF: 4.2590**

Julve J., Martin-Campos J.M., Escola-Gil J.C., Blanco-Vaca F., Chylomicrons: Advances in biology, pathology, laboratory testing, and therapeutics. (2016) *CLIN CHIM ACTA*, 455, 134-148. **IF: 2.8730**

Lee-Rueckert M., Escola-Gil J.C., Kovanen P.T., HDL functionality in reverse cholesterol transport - Challenges in translating data emerging from mouse models to human disease. (2016) *BBA-MOL CELL BIOL L*, 1861 (7), 566-583. **IF: 5.5470**

Minambres I., Mediavilla J.J., Sarroca J., Perez A., Meeting individualized glycemic targets in primary care patients with type 2 diabetes in Spain. (2016) *BMC ENDOCR DISORD*, 16 (1). **IF: 2.2750**

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- ▶ Sanchez-Hernandez R.M., Civeira F., Stef M., Perez-Calahorra S., Almagro F., Plana N., Novoa F.J., Saenz-Aranzúbia P., Mosquera D., Soler C., Fuentes F.J., Brito-Casillas Y., Real J.T., Blanco-Vaca F., Ascaso J.F., Pocovi M., Homozygous Familial Hypercholesterolemia in Spain: Prevalence and Phenotype-Genotype Relationship. (2016) *CIRC-CARDIOVASC GENE*, 9 (6), 504-510.

Inflammatory Diseases

Coordinator

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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 treatment.
- ▶ 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.

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

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

Active Grants

- ▶ Cándido Juárez Rubio. Mecanismos implicados en la acción del rtuximab en miastenia gravis: efecto diferencial sobre los autoanticuerpos anti-AchR y ANTI-MuSK. PI11/00927. Instituto de Salud Carlos III. Duration: 2012-2016. 66,500 €.
- ▶ Cándido Juárez Rubio. Grup d'Immunologia. 2014 SGR 357. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ Silvia 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 €.

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

Transfer Products

- ▶ Silvia Vidal. Análisis de los mecanismos inmunoreguladores de la Treg inducidos por tocilizumab en artritis reumatoide. Roche Farma, S.A.
- ▶ Silvia Vidal. Caracterización de los macrófagos y las células madre del cáncer en pacientes con cáncer de pulmón, mama y ovario. MERCK.

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Scientific Production

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- Santiago A., Pozuelo M., Poca M., Gely C., Nieto J.C., Torras X., Roman E., Campos D., Sarrabayrouse G., Vidal S., Alvarado-Tapias E., Guarner F., Soriano G., Manichanh C., Guarner C., Alteration of the serum microbiome composition in cirrhotic patients with ascites (2016) SCI REP-UK, 6. **IF: 4.2590**

Other Publications

- ▶ Sibila O, Garcia-Bellmunt L, Giner J, Rodrigo-Troyano A, Suarez-Cuartin G, Torrego A, Castillo D, Solanes I, Mateus EF, Vidal S, Sanchez-Reus F, Sala E, Cosio BG, Restrepo MI, Anzueto A, Chalmers JD, Plaza V. Airway Mucin 2 Is Decreased in Patients with Severe Chronic Obstructive Pulmonary Disease with Bacterial Colonization. ANN AM THORAC SOC. 2016 May;13(5):636-42.

Endocrinology, Diabetes and Nutrition

Coordinator

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Rivas Urbina, Andrea Patricia IR



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.

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 €.
- ▶ Valeria Alcántara Aragón. 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 €.

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

Grants Awarded in 2016

- ▶ 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, 2016-2019, 40,806 €.

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

Theses

- ▶ Cristina Colom Comí. Aterosclerosis silente en la Diabetes tipo 1. Prevalencia y perfil de riesgo. Universitat Autònoma de Barcelona (UAB). Tutor: Alberto de Leiva. Directors: Antonio Pérez, Ana Isabel Chico. Date of defense: 02/11/2016.

Challenges

Endocrine Neoplasms

- ▶ Molecular markers of the epithelial lineage: expression of the ABCG2 gene/BCRP1 transporter.
- ▶ Importance of thyroglobulin and antithyroglobulin antibodies as prognostic prediction markers in differentiated thyroid cancer of epithelial lineage.
- ▶ 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.

Autoimmune Diabetes Mellitus and Gestational Diabetes

- ▶ 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 gestational diabetes at different pre-conception, pregnancy, birth and postpartum stages.

Telemedicine and Intelligent Systems for Therapeutic Optimization of Diabetes Mellitus

- ▶ 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 demonstrate with documented evidence (heuristics) that European research on the development of pancreatic extracts achieved beneficial results in the opotherapy of both experimental and clinical diabetes.
- ▶ Research into impaired glucose tolerance in women suffering from polycystic ovary syndrome.
- ▶ Acquisition of information to help assess the clinical and socio-economic relevance of cardiometabolic risk.

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.

CONCEPTT: Women with Type 1 Diabetes in Pregnancy Trial

- ▶ Sansum Diabetes Research Institute (SDRI). Santa Barbara (California) USA.

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- ▶ Dalhousie University, Staff Endocrinologist, Department of Medicine. Halifax, Canada.
- ▶ University of British Columbia, BC Women's Diabetes Pregnancy Service. Vancouver, Canada.
- ▶ McMaster University, Endocrinology/General Internal Medicine. Hamilton, Canada.
- ▶ University of Ottawa, The Ottawa Hospital, Division of Endocrinology and Metabolism. Ottawa, Canada.
- ▶ Sunnybrook Health Sciences Centre, Department of Endocrinology. Toronto, Canada.
- ▶ University of Western Ontario, Department of Medicine: Endocrinology & Metabolism. London, Ontario, Canada.
- ▶ Centre de Recherche du CHUL. Unité de recherche sur le diabète. Québec, Canada.
- ▶ McGill University, Department of Medicine, Division of Endocrinology & Metabolism, Metabolic Day Centre and Antenatal Clinic. Montréal, Canada.
- ▶ University of Calgary, Departments of Medicine and Obstetrics & Gynaecology. Calgary, Canada.
- ▶ Charles H. Best Diabetes Centre. Ajax, Canada.
- ▶ Yale University. Diabetes Clinic. New Haven, US.
- ▶ Tel-Aviv University, Helen Schneider Hospital for Women; Rabin Medical Center. Israel

Endocrinology, Diabetes and Nutrition

Collaborations

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 - ▶ CIHR Institute of Aboriginal Peoples' Health. Ottawa, Canada.
 - ▶ Community Programs Directorate First Nations and Inuit Health Branch. Ottawa, Canada.
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 - ▶ Royal University Hospital. Department of Medicine. Saskatoon, Canada.
 - ▶ Sunnybrook Health Sciences Centre. Centre for Mother, Infant, and Child Research (CMICR). Toronto, Canada.
 - ▶ Jaeb Center for Health Research. Tampa, US.
 - ▶ University of Waterloo. Office of Research. Waterloo, Canada.
 - ▶ Juvenile Diabetes Research Foundation (JDRF). Canada.
 - ▶ Juvenile Diabetes Research Foundation International (JDRF). US.
 - ▶ JDRF Lay Review Committee Members (LRC).
 - ▶ JDRF Canadian Clinical Trial Network (CCTN).
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- ▶ Medizinische Universität Graz (MUG), Austria.
 - ▶ Medical Research Council (MRC), United Kingdom.
 - ▶ Medical University Vienna (MUV), Austria.
 - ▶ University Central Hospital (HUCH), Finland.
 - ▶ Recherche en Santé Lawson S.A. (LAWSON), Switzerland.
 - ▶ Katholieke Universiteit Leuven (K.U. Leuven), Belgium.
 - ▶ Copenhagen University Hospital (CUH), Denmark.
 - ▶ Akademia Medyczna im Karola Marcinkowskiego (PUM), Poland.
 - ▶ BAP Health Outcomes Research (S.L. BAP), Spain.
 - ▶ Università degli studi di Padova (UNIPD), Italy.
 - ▶ National University of Ireland (NUI), Ireland.
 - ▶ Vrije Universiteit Medisch Centrum (VU), Netherlands.
- Action LADA European Consortium**
- ▶ David Leslie, Co-Ordinator, St. Bartholomew's Hospital, UK.
 - ▶ Rhys Williams and Mark Airey, Nuffield Institute for Health, UK.
 - ▶ Henning Beck-Nielsen, Odense University Hospital, Denmark.
 - ▶ David Hadden and Stephen Hunter, Royal Victoria Hospital, UK.
 - ▶ Umberto Di Mario, University of Rome "La Sapienza", Italy.
 - ▶ Werner Scherbaum and Jochen Seissler, University of Dusseldorf, Germany.
 - ▶ Hubert Kolb, Germany, University of Dusseldorf, Germany.
 - ▶ Guntram Scherthaner, Rudolfstiftung Hospital, Austria.
 - ▶ Jaakko Tuomilehto and Johan Eriksson, National Public Health Inst., Finland.
 - ▶ Alberto de Leiva, Hospital de Sant Pau, Spain.
 - ▶ Charles Thivolet, Hospital Edouard Herriot, France.
 - ▶ Type 1 Diabet Genetics European Network (ET1DGC), Asia-Pacific, North America and United Kingdom.

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Scientific Production

Amor A.J., Catalan M., Perez A., Herreras Z., Pinyol M., Sala-Vila A., Cofan M., Gilabert R., Ros E., Ortega E., Nuclear magnetic resonance lipoprotein abnormalities in newly-diagnosed type 2 diabetes and their association with preclinical carotid atherosclerosis (2016) *ATHEROSCLEROSIS*, 247, 161-169.

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Aulinas A., Colom C., Garcia Patterson A., Ubeda J., Maria M.A., Orellana I., Adelantado J.M., de Leiva A., Corcoy R., Smoking affects the oral glucose tolerance test profile and the relationship between glucose and HbA1c in gestational diabetes mellitus (2016) *DIABETIC MED*, 33 (9), 1240-1244.

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Balsells M., Garcia-Patterson A., Corcoy R., Systematic review and meta-analysis on the association of prepregnancy underweight and miscarriage (2016) *EUR J OBSTET GYN R B*, 207, 73-79.

IF: 1.6660

Caimari F., Gonzalez C., Ramos A., Chico A., Cubero J.M., Perez A., Efficacy of a hyperglycemia treatment program in a Vascular Surgery Department supervised by Endocrinology Eficacia de un programa de tratamiento de la hiperglucemia en un Servicio de Cirugía Vascular supervisado por Endocrinología (2016) *CIR ESPAN*, 94 (7), 392-398.

IF: 1.2760

Caimari F., Ramos A., Pujol I., Garcia-Patterson A., Adelantado J.M., Corcoy R., Gestational diabetes mellitus in women with multiple pregnancies: Is the metabolic abnormality milder? (2016) *J MATERN-FETAL NEO M*, 29 (15), 2485-2489.

IF: 1.8260

Chico A., Advantages of continuous subcutaneous insulin infusion vs. multiple daily injections for the treatment of subjects with type 1 diabetes: Are there still doubts? (2016) *MED CLIN-BARCELONA*, 146 (6), 258-259.

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Chico A., Herranz L., Corcoy R., Ramirez O., Goya M.M., Bellart J., Gonzalez-Romero S., Codina M., Sanchez P., Cortazar A., Acosta D., Picon M.J., Rubio J.A., Megia A., Sancho M.A., Balsells M., Sola E., Gonzalez N.L., Lopez-Lopez J., Glycemic control and maternal and fetal outcomes in pregnant women with type 1 diabetes according to the type of basal insulin (2016) *EUR J OBSTET GYN R B*, 206, 84-91.

IF: 1.6660

Chiva-Blanch G., Suades R., Padro T., Vilahur G., Pena E., Ybarra J., Pou J.M., Badimon L., Microparticle Shedding by Erythrocytes, Monocytes and Vascular Smooth Muscular Cells Is Reduced by Aspirin in Diabetic Patients El ácido acetilsalicílico reduce la liberación de micropartículas eritrocitarias, monocitárias y de células del músculo liso vascular en pacientes diabéticos (2016) *REV ESP CARDIOL*, 69 (7), 672-680.

IF: 4.4850

Feig D.S., Asztalos E., Corcoy R., De Leiva A., Donovan L., Hod M., Jovanovic L., Keely E.,

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Kollman C., McManus R., Murphy K., Ruedy K., Sanchez J.J., Tomlinson G., Murphy H.R., Feig D., Cleave B., Donat D., Gandhi S., Strom M., Chico A.I., Jose Martinez M., Sanchez M., et al. CONCEPTT: Continuous Glucose Monitoring in Women with Type 1 Diabetes in Pregnancy Trial: A multi-center, multi-national, randomized controlled trial - Study protocol (2016) BMC PREGNANCY CHILDB, 16 (1).

IF: 2.2630

Feig D.S., Asztalos E., Corcoy R., De Leiva A., Donovan L., Hod M., Jovanovic L., Keely E., Kollman C., McManus R., Murphy K., Ruedy K., Sanchez J.J., Tomlinson G., Murphy H.R., Erratum: CONCEPTT: Continuous Glucose Monitoring in Women with Type 1 Diabetes in Pregnancy Trial: A multi-center, multi-national, randomized controlled trial - Study protocol [BMC Pregnancy Childbirth., 16, (2016) (167)] doi: 10.1186/s12884-016-0961-5 (2016) BMC PREGNANCY CHILDB, 16 (1).

IF: 2.2630

Garcia-Patterson A., Minambres I., Adelantado J.M., Gich I., Puig T., de Leiva A., Corcoy R., Sex ratio at birth is associated with type 1 diabetes characteristics (2016) ACTA DIABETOL, 53 (6), 1025-1035.

IF: 3.3400

Gonzalez C., Picon M.J., Tome M., Pujol I., Fernandez-Garcia J.C., Chico A., Expert study: Utility of an automated bolus advisor system in patients with type 1 diabetes treated with multiple daily injections of insulin - A crossover study (2016) DIABETES TECHNOLOG THE, 18 (5), 282-287.

IF: 2.6980

Minambres I., Mediavilla J.J., Sarroca J., Perez A., Meeting individualized glycemic targets in primary care patients with type 2 diabetes in Spain (2016) BMC ENDOCR DISORD, 16 (1).

IF: 2.2750

Moreno-Fernandez J., Chico A., Bariatric surgery results in patients with type 1 diabetes mellitus on continuous subcutaneous insulin infusion therapy Resultados de la cirugía bariátrica en pacientes con diabetes mellitus tipo 1 tratados con infusión subcutánea continua de insulina (2016) ENDOCRINOL NUTR, 63 (10), 571-572.

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Perez A., Statin-centered treatment of dyslipidemia. New evidence-based paradigm,

or only part of the evidence? (2016) ENDOCRINOL NUTR.

IF: 1.1060

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Endocrinology, Diabetes and Nutrition

Other Publications

- ▶ Alcantara-Aragon V, Gonzalez C, Corcoy R, Ubeda J, Chico A. Carbohydrate-to-Insulin Ratio in a Mediterranean Population of Type 1 Diabetic Patients on Continuous Subcutaneous Insulin Infusion Therapy. (2015) *JOURNAL OF DIABETES SCIENCE AND TECHNOLOGY*, 9 (3), 588-92.
- ▶ Colom C., Chico A., Carreras G., Aulinas A., Pujol I., Pérez A. Control glucémico y complicaciones crónicas a 20 años del comienzo de la diabetes tipo 1. Resultados de una unidad especializada. (2015) *AV DIABETOL*, 31, 113-9.
- ▶ Grupo Español de Diabetes y Embarazo (GEDE). Sociedad Española de Diabetes (SED), España; Sociedad Española de Ginecología y Obstetricia (SEGO), España (Chico A., Corcoy R.). Asistencia a la gestante con diabetes. Guía de práctica clínica actualizada en 2014. (2015) *AV DIABETOL*, 31(2), 45-59.
- ▶ Lobos Bejarano J.M., Galve E., Royo-Bordonada M.A., Alegria Ezquerra E., Armario P., Brotons Cuixart C., Camafort Babkowski M., Cordero Fort A., Maiques Galán A., Mantilla Morató T., Pérez Pérez A., Pedro-Botet J., Villar Álvarez F., González-Juanatey J.R.; on behalf of Comité Español Interdisciplinario de Prevención Cardiovascular and Sociedad Española de Cardiología. Spanish Interdisciplinary Committee for Cardiovascular Disease Prevention and the Spanish Society of Cardiology Position Statement on Dyslipidemia management: differences between the European and American Guidelines. (2015) *SEMERGEN*; 41(3), 149-57.
- ▶ Lobos Bejarano J.M., Galve E., Royo-Bordonada M.A., Alegria Ezquerra E., Armario P., Brotons Cuixart C., Camafort Babkowski M., Cordero Fort A., Maiques Galán A., Mantilla Morató T., Pérez Pérez A., Pedro-Botet J., Villar Álvarez F., González-Juanatey J.R.; on behalf of Comité Español Interdisciplinario de Prevención Cardiovascular and Sociedad Española de Cardiología. Spanish Interdisciplinary Committee for Cardiovascular Disease Prevention and the Spanish Society of Cardiology Position Statement on Dyslipidemia management: differences between the European and American Guidelines. (2015) *CLIN INVESTIG ARTERIO-SCLER*. 27(1):36-44.
- ▶ Lobos Bejarano J.M., Galve E., Royo-Bordonada M.A., Alegria Ezquerra E., Armario P., Brotons Cuixart C., Camafort Babkowski M., Cordero Fort A., Maiques Galán A., Mantilla Morató T., Pérez Pérez A., Pedro-Botet J., Villar Álvarez F., González-Juanatey J.R.; Spanish Interdisciplinary Committee for Cardiovascular Disease Prevention and the Spanish Society of Cardiology. Spanish Interdisciplinary Committee for Cardiovascular Disease Prevention and the Spanish Society of Cardiology Position Statement on Dyslipidemia Management. Differences Between the European and American Guidelines. (2015) *HIPERTENS RIESGO VASC*, 32(2), 83-91.
- ▶ Mato E., Puras G., Bell O., Agirre M., Hernández R.M., Igartua M., Moreno R., Gonzalez G., de Leiva A., Pedraz J.L. Selective Antitumoral Effect of Sorafenib Loaded PLGA Nanoparticles Conjugated with Cetuximab on Undifferentiated/ Anaplastic Thyroid Carcinoma Cells. (2015) *J NANOMED NANOTECHNOL*, 6, 3.
- ▶ Menéndez Torre E., Gaztambide S., Rica I., Castaño L., Salvador F.J., Escalada F.J., Grupo de trabajo MIPDI-1 (Chico A.I., González C.). Proyecto manejos integral en la DM tipo 1. el manejo integral del paciente con diabetes mellitus tipo 1. (2015) *AV DIABETOL*, 31(1), 13-23.
- ▶ Pérez A. Statin-centered treatment of dyslipidemia. New evidence-based paradigm, or only part of the evidence? (2015) *ENDOCRINOL NUTR*. Pii: S1575-0922(15)00225-9. Doi:10.1016/j. Endonu. 2015.08.005.
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- ▶ Salord N., Fortuna A.M., Monasterio C., Gasa M., Pérez A., Bonignore M.R., Vilarrasa N., Montserrat J.M., Mayos M. A Randomized Controlled Trial of CPAP on Glucose Tolerance in Obese Patients with Obstructive Sleep Apnea. (2015) *SLEEP*. Pii: sp-00651-14. [Epub ahead of print].
- ▶ Vázquez F., Barrio R., Goñi M.J., Díaz-Soto G., Simón Muela I., González Blanco C., on behalf of Grupo de Nuevas Tecnologías de la Sociedad Española de Diabetes (SED). Documento de consenso sobre el tratamiento con infusión subcutánea continua de insulina en el medio hospitalario. (2015) *AV DIABETOL*, 31(3), 81-88.
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Pituitary Gland Disorders

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Crespo Martín, Iris
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Main Lines of Research

- ▶ Morbimortality, low-grade inflammation and cardiovascular risk in patients with acromegaly or Cushing syndrome.
- ▶ ERCUSYN: European Registry on Cushing syndrome. Initiated with funding from SANCO, EU Public Health Programme.
- ▶ 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.
- ▶ Correlate neuropsychological status and circadian rhythm of cortisol in patients with hypercortisolism (Cushing syndrome) and without hypercortisolism (non-functioning pituitary adenomas) compared to normal controls.
- ▶ Evaluate long-term morbidity and mortality in patients who have had Cushing syndrome or acromegaly in the last 25 years.
- ▶ Analyse and update the European database of patients with Cushing syndrome (ERCUSYN), which in 2016 included over 1400 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.
- ▶ Investigate correlations of telomere length and different clinical and biochemical parameters in patients with Cushing syndrome.
- ▶ Evaluate long-term morbidity and mortality in patients who have had Cushing syndrome or acromegaly in the last 25 years.

Collaborations

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].

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 Personalize Medicine of the ISCIII, number PMP 15/00027 "Improved and efficient therapy of acromegaly by implementation of a personalized and predictive algorithm including functional analysis, imaging and genomic information. 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)

Active Grants

- ▶ 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.
- ▶ Susan Webb Youdale. Estudio de microarquitectura y resistencia ósea y de factores que las determinan en el sd de Cushing o acromegalia en remisión. Modelo para investigar la interacción hueso- grasa corporal. PI14/00194. Instituto de Salud Carlos III. Duration: 2015-2017. 91,500 €.

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Books Or Chapters With ISBN

- ▶ Santos A, Webb SM. Coping with Cushing's Disease: The Patient's Perspectives. In: Cushing's Disease: An Often Misdiagnosed and Not So Rare Disorder. Editor: Edward Laws, Editorial: Elsevier, 2016. Cap 10: 169-185. ISBN: 978-0-12-804340-0.
- ▶ Susan M. Webb y María Fernanda Rabasa Jofre. "Impacto de la acromegalia sobre la calidad de vida". In ACROMEGALIA: Aspectos básicos, clínicos y traslacionales, chapter 4.2, pp 133-138. Editor Moisés Mercado. © 2016 Permanyer México. ISBN: 978-84-9926-930-6.

Theses

- ▶ Iris Crespo Martín. Neuropsychological evaluation of patients with acromegaly and Cushing's syndrome: Long-term effects. Directors: Eugenia Resmini, Susan Webb, Elena Valassi. Date of defense: 28 June 2016

Pituitary Gland Disorders

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Scientific Production

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Crespo I., Webb S.M., Santos A., Gomez-Anson B., Lopez-Mourelou O., Pires P., Vives-Gilabert Y., Webb S.M., Resmini E., Brain metabolite abnormalities in ventromedial prefrontal cortex are related to duration of hypercortisolism and anxiety in patients with Cushing's syndrome. (2016) *ENDOCRINE*, 53 (3), 848-856.

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Martinez-Momblan M.A., Gomez C., Santos A., Porta N., Esteve J., Ubeda I., Halperin I., Campillo B., Guillaumet M., Webb S.M., Resmini E., A specific nursing educational pro-

gram in patients with Cushing's syndrome. (2016) *ENDOCRINE*, 53 (1), 199-209.

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Puig-Domingo M., Soto A., Venegas E., Vilchez R., Blanco C., Cordido F., Lucas T., Marazuela M., Casany R., Cuatrecasas G., Fajardo C., Galvez M.A., Maraver S., Martin T., Romero E., Paja M., Pico A., Bernabeu I., Resmini E., Use of lanreotide in combination with cabergoline or pegvisomant in patients with acromegaly in the clinical practice: The ACROCOMB study Uso de lanreotida en combinación con cabergolina o pegvisomant en la práctica clínica en pacientes con acromegalia: el estudio ACROCOMB. (2016) *ENDOCRINOL NUTR*, 63 (8), 397-408.

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Resmini E., Santos A., Aulinas A., Webb S.M., Vives-Gilabert Y., Cox O., Wand G., Lee R.S., Reduced DNA methylation of FKBP5 in Cushing's syndrome. (2016) *ENDOCRINE*, 54 (3), 768-777.

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Resmini E., Webb S.M., Santos A., Webb S.M., Cortisol excess and the brain. (2016) *FRONT HORM RES*, 46, 74-86.

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Tortosa F., Webb S.M., Atypical pituitary adenomas: 10 years of experience in a reference centre in Portugal Adenomas hipofisarios atípicos: Experiencia de 10 años en un cen-

tro de referencia de Portugal. (2016) *NEUROLOGIA*, 31 (2), 97-105.

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Valassi E., Crespo I., Malouf J., Llauger J., Aulinas A., Marin A.M., Biagetti B., Webb S.M., Reduction of trabecular and cortical volumetric bone mineral density at the proximal femur in patients with acromegaly. (2016) *EUR J ENDOCRINOL*, 174 (2), 107-114.

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Valassi E., Webb S.M., Crespo I., Malouf J., Vilades D., Leta R., Llauger J., Urgell E., Aulinas A., Marin A.M., Biagetti B., Webb S.M., Epicardial fat is a negative predictor of spine volumetric bone mineral density and trabecular bone score in acromegaly. (2016) *ENDOCRINE*, 53 (3), 860-864.

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Webb S.M., Badia X., Quality of Life in Acromegaly. (2016) *NEUROENDOCRINOLOGY*, 103 (1), 106-111.

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Webb S.M., Luque R.M., Ibanez-Costa A., Sanchez-Tejada L., Rivero-Cortes E., Robledo M., Madrazo-Atutxa A., Mora M., Alvarez C.V., Lucas-Morante T., Alvarez-Escola C., Fajardo C., Castano L., et al. The Molecular Registry of Pituitary Adenomas (REMAH): A bet of Spanish Endocrinology for the future of individualized medicine and translational research El Registro Molecular de Adenomas Hipofisarios (REMAH): una apuesta de futuro de la Endocrinología española por la medicina individualizada y la investigación traslacional. (2016) *ENDOCRINOL NUTR*, 63 (6), 274-284.

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Other Publications

- ▶ Alicia Santos, Iris Crespo, Susan M Webb, Eugenia Resmini. Guía para familiares de pacientes con acromegalia. Novartis Oncology-SEEN-CIBERER. Barcelona, 2016.
- ▶ Iris Crespo, Alicia Santos, Susan M Webb, Eugenia Resmini. Apoyo emocional para pacientes con acromegalia. Novartis Oncology-SEEN-CIBERER. Barcelona, 2016.
- ▶ Cubero Marcos J.M., Aulinas Maso A., Varón de 58 años de edad remitido por úlcera en pie izquierdo y descompensación de su diabetes mellitus. (2016) *Medicine (Spain)*, 12 (17), 1000.e1-1000.e4.

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, Institut de salut Carlos III research group by studying complications in cirrhosis.
- ▶ Research Grup de Recerca de la UAB (Universitat Autònoma de Barcelona): Grup de Recerca de Complicacions de la Cirrosi Hepàtica.
- ▶ Expand the hepatology research lab and develop new research.
- ▶ Consolidate the portal hypertension re-

- search 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.

Collaborations

Collaborations with other IIB Sant Pau Groups

IIB-Sant Pau, Institut de Recerca

Genetic, Metabolic and Inflammatory Diseases research area

- ▶ Dr. Cándido Juárez (Infamatory diseases)
- ▶ Dr. Pera 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 Gomez Ansón (Neuradiology)

Molecural, 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 Casanni (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 Gomez, Dr. Bañares, among others; CIBERSAM: Dr. Gish; CIBERER: Dr. Pia Gallano.
- ▶ Instituto de productos lácteos (IPLA) Asturias.
- ▶ 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

Active Grants

- ▶ Eva Maria Roman Abal. Estudio del síndrome de fragilidad en los pacientes con cirrosis hepática: relación con las caídas, la calidad de vida y el pronóstico. PI12/00629. Instituto de Salud Carlos III. Duration: 2013-2016. 31,500 €.
- ▶ Candid Villanueva Sánchez. Estudio randomizado y controlado para comparar el tratamiento con anticoagulación oral con antagonistas de la vitamina K versus heparina de bajo peso molecular (bemiparina) en pacientes con criterios de anticoagulación. Conveni Rovi. Laboratoris Farmacèutics Rovi. Duration: 2012-2016. 6,507.11 €.
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Microbiology and Infectious Diseases

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Main Lines of Research

Clinical Microbiology

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

Kidney Transplantation

- ▶ Vaccines in patients at high risk of CMV infection post-transplantation.
- ▶ Detection of patients IgG positive for CMV but with posttransplantation risk of CMV infection.

- ▶ Biomarkers for BKV in urine samples.
- ▶ 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 Resistance Mechanisms

- ▶ Study of increased resistance as a result of gene carrier-vector spread.
- ▶ Continuity of work in the context of the Spanish Network for Research into Infectious Pathologies (REIPI), heading certain projects (e.g., epidemiology of class C beta-lactamases in Spain) and cooperating with a project on the epidemiology of resistance to amoxicillin clavulanic acid among others.
- ▶ Advancement of other research lines, both in-house and in cooperation with other centres, leading to two doctoral theses.

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.

Challenges

- ▶ 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

- ▶ Vaccine in patients with high risk of CMV infection post- transplantation: Phase 2 randomized, double-blind, placebo-controlled trial of MCMV5322A/MCMV3068A for the prevention of cytomegalovirus disease in high-risk kidney allograft recipients, Clinical trial sponsored by Genetech.
- ▶ Detection of patients IgG positive for CMV with high or low risk of CMV infection post- transplantation: Translational study to assess the clinical utility of determination pre-transplant of IFN- γ ; secreted by CD8 + T-cell-specific guide for the prevention of CMV infection in patients of low risk of CMV infection. Clinical trial sponsored by Consejería de Sanidad y Bienestar Social de Andalucía, Spain.
- ▶ 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.

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 Cutbreaks 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.
- ▶ Observational, epidemiological and retrospective study of management of CMV infection in a cohort of patients receiving solid organ transplantation in Catalonia (Dr. Canal, Dr. Facundo and Dr. Serra), sponsored by the Catalan Transplantation Society.

Theses

- ▶ Marc Argente Viñals. Epidemiologia de la carbapenemasa OXA-48 en aïllats de Klebsiella pneumoniae a Catalunya. Universitat Autònoma de Barcelona. Directors: E. Miro, F. Navarro. Date of defense: 14 Jun 2016. (European Doctorate)
- ▶ María Luisa Sorlí. Impacto de la monitorización de los niveles plasmáticos de colistina en la práctica clínica diaria. Universitat Autònoma de Barcelona. Directors: Dr. Juan Pablo Horcajada, Dr. Santiago Grau, Dra. Natividad de Benito. Date of defense: 13 Jan 2016.

Microbiology and Infectious Diseases

Active Grants

- ▶ Pedro Coll Figa. Conveni Dpt. Salut - Dr. Coll (IR). Desenvolupar conjuntament funcions de vigilància epidemiològica de les infeccions nosocomials i la poliomièlitis (Vigilància de les paràlisis flàccides). Dpt. Salut - Coll. Departament de Salut. Duration: 2011-2016. 89,671.55 €.
- ▶ Pedro 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 €.
- ▶ Ferran Navarro Risueño. Implicación de plásmidos y bacteriófagos en la difusión de las resistencias a antimicrobianos y factores de virulencia bacterianos en humanos. PI13/00329. Instituto de Salud Carlos III. Duration: 2014-2016. 50,300 €.
- ▶ Pedro 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.
- ▶ Paula Andrea Espinal Marín. Contratos Sara Borrell 2015. CD15/00017. Instituto de Salud Carlos III. Duration: 2016-2019. 80,598 €.
- ▶ 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 €.

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

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Multi-organ Damage

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Torres Bonafonte,
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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 HRQCT (in collaboration with the Gastroenterology Department).
- ▶ Description of bone structure in patients with a history of acromegaly assessed by DXA and HRQCT.

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.

Rheumatology and Rheumatoid Arthritis

- ▶ Immunomodulation due to anti-CD20 (rituximab) Immunomodulation due to an-

ti-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.
- ▶ Dr. César Díaz Torné, panellist for the Guidelines to Clinical Practice for Gout (GuipClinGot), Spanish Rheumatology Society.

Active Grants

- ▶ Olga Herminia Torres Bonafonte. Estudio sobre la utilización inapropiada de medicamentos en pacientes de edad avanzada hospitalizados en servicios de medicina interna de diferentes hospitales españoles. EC10-077. Ministeri de Sanitat i Política Social. Duration: 2011-2016. 22,790.88 €.
- ▶ Jordi Casademont Pou. Estudio GAO: de los fenotipos intermedarios al análisis global del genoma. P114/01036. Instituto de Salud Carlos III. Duration: 2015-2017. 76,000 €.

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

Theses

- ▶ Patricia Moya Alvarado. Estudios farmacogenéticos del metotrexato en la artritis reumatoide. Universitat Autònoma de Barcelona. Directors: Héctor Corominas Macías, Montserrat Baiget Bastús. Date of defense: 10/03/2016
- ▶ Nerea Hernández de Sosa. Estudi genètic de l'osteoporosi: heretabilitat de les propietats densitomètriques, estructurals i de resistència òssia. Universitat Autònoma de Barcelona. Director: Jordi Casademont i Pou. Date of defense: 10/11/2016.

Multi-organ Damage

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Scientific Production

Alvarado-Cardenas M., Marin-Sanchez A., Martinez M.A., Martinez-Martinez L., Pinal-Fernandez I., Labrador-Horrillo M., Balada E., Mundet-Tuduri X., Gonzalez-Mera L., Casademont J., Acebes E.M., Moreno P.J., Juarez C., Grau-Junyent J.M., Pujol-Borrell R., Selva-O'Callaghan A., Statin-associated autoimmune myopathy: A distinct new IFL pattern can increase the rate of HMGR antibody detection by clinical laboratories. (2016) *AUTOIMMUN REV*, 15 (12), 1161-1166.

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Formiga F., Chivite D., Navarro M., Montero A., Duaso E., Ruiz D., Perez-Castejon J.M., Lopez-Soto A., Corbella X., Characteristics of falls producing hip fracture in patients on oral anticoagulants. (2016) *ACTA CLIN BELG*, 71 (3), 171-174.

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Formiga F., Vidal X., Agusti A., Chivite D., Roson B., Barbe J., Lopez-Soto A., Torres O.H., Fernandez-Moyano A., Garcia J., Ramirez-Duque N., San Jose A., Inappropriate prescribing in elderly people with diabetes admitted to hospital. (2016) *DIABETIC MED*, 33 (5), 655-662.

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genetic variants are associated with outcome in rheumatoid arthritis patients. (2016) *PHARMACOGENOMICS*, 17 (1), 11-25.

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Ponte P.H., Matas L., Cadafalch J., Arroyo J.A., Resistant hypertension and no organ damage: A new case of Munchausen syndrome Hipertensión arterial resistente sin lesión de órgano diana: un nuevo caso de síndrome de Munchausen. (2016) *MED CLIN-BARCELONA*, 146 (9), e51-e52.

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Scientific Production

liu-Soler A., Carmona C., Pascual J.C., Validation of the Spanish version of the McLean Screening Instrument for Borderline Personality Disorder Validación de la versión española del McLean Screening Instrument for Borderline Personality Disorder. (2016) REV PSIQUIATR SALUD, 9 (4), 195-202.

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F.J., Chen A.Z., Coggeshall M., Cornaby L., Dandona L., Dicker D.J., Dilegge T., Erskine H.E., Ferrari A.J., Fitzmaurice C., et al. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. (2016) LANCET, 388 (10053), 1545-1602.

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Wang H., Naghavi M., Allen C., Barber R.M., Bhutta Z.A., Carter A., Casey D.C., Charlson F.J., Chen A.Z., Coates M.M., Coggeshall M., Dandona L., Dicker D.J., Erskine H.E., Ferrari A.J., Fitzmaurice C., Foreman K., et al. Global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015. (2016) LANCET, 388 (10053), 1459-1544.

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Other Publications

▶ Alquezar Arbe A., Rizzi M., Martin-Marcuello J., De Diego-Bustillos E., Comments about the status of oral anticoagulant treatment in patients with nonvalvular atrial fibrillation in Spain. (2015) REV CLIN ESP, 215 (9), 542-.

▶ Casademont J., Pathophysiology and clinical semiotics. Where are we and where should we go?. (2016) Educacion Medica, .

▶ Corominas H., Narvaez J., Diaz-Torne C., Salvador G., Gomez-Caballero M.E., de la Fuente D., Campoy E., Roig-Vilaseca D., Clavaguera T., Morla R., Torrente-Segarra V., Arasa X., Gomez-Puerta J.A., Moller I., Alegre C., Graell E., Ponce A., Lisbona M.P., Perez-Garcia C., Figuls R., Sirvent E., Poca V., Sanmarti R., Diagnostic and therapeutic delay of rheumatoid arthritis and its relationship with health care devices in Catalonia. The AUDIT study Retraso diagnóstico y terapéutico de la artritis reumatoide y su relación con dispositivos asistenciales en Catalunya. Estudio AUDIT. (2016) Reumatologia Clinica, 12 (3), 146-150.

▶ Moya P., Salazar J., Arranz M.J., Diaz-Torne C., del Rio E., Casademont J., Corominas H., Baiget M., Methotrexate pharmacokinetic genetic variants are associated with outcome in rheumatoid arthritis patients. (2016) Pharmacogenomics, 17 (1), 25-29.

▶ Perez-Ruiz F., Diaz-Torne C., Carcedo D., Cost-effectiveness analysis of febusostat in patients with gout in Spain. (2016) J MED ECON, 19 (6), 604-610.

▶ Reina D., Roig Vilaseca D., Torrente-Segarra V., Cerda D., Castellvi I., Diaz Torne C., Moreno M., Narvaez J., Ortiz V., Blavia R., Martin-Baranera M., Corominas H., Sjögren's syndrome-associated interstitial lung disease: A multicenter study Enfermedad pulmonar intersticial asociada a síndrome de Sjögren: estudio multicéntrico. (2016) Reumatologia Clinica, 12 (4), 201-205.

▶ Salva A., Serra-Rexach J.A., Artaza I., Formiga F., Rojano i Luque X., Cuesta F., Lopez-Soto A., Masanes F., Ruiz D., Cruz-Jentoft A.J., Prevalence of sarcopenia in Spanish nursing homes: Comparison of the results of the ELLI study with other populations La prevalencia de sarcopenia en residencias de España: comparación de los resultados del estudio multicéntrico ELLI con otras poblaciones. (2016) Revista Espanola de Geriatria y Gerontologia, 51 (5), 260-264.

▶ Torrente-Segarra V., Acosta Pereira A., Morla R., Ruiz J.M., Clavaguera T., Figuls R., Corominas H., Geli C., Rosello R., de Agustin J.J., Alegre C., Perez C., Garcia A., Rodriguez de la Serna A., VARIAR Study: Assessment of short-term efficacy and safety of rituximab compared to an tumor necrosis factor alpha antagonists as second-line drug therapy in patients with rheumatoid arthritis refractory to a first tumor necrosis factor alpha antagonist Estudio VARIAR: VALoración de la eficacia y seguridad a corto plazo en artritis reumatoide del uso de Rituximab comparado con Antagonistas del factor de necrosis tumoral alfa en segunda línea terapéutica en pacientes con artritis reumatoide Refractarios a un primer antagonista del factor de necrosis tumoral alfa. (2016) Reumatologia Clinica, 12 (6), 319-322.

▶ Torres O.H., Gil E., Comas M.T., Saez M.E., Clotet S., Ramirez H.D., Mateo M., Ruiz D., Impact of a multidimensional intervention in elderly patients with community-acquired pneumonia: IMIEPCAP clinical trial Impacto de una intervención multidimensional en pacientes ≥65 años tras un ingreso por neumonía: Estudio aleatorizado. (2016) Revista Espanola de Geriatria y Gerontologia, 51 (1), 37-43.

*Total Impact Factor **Mean Impact Factor

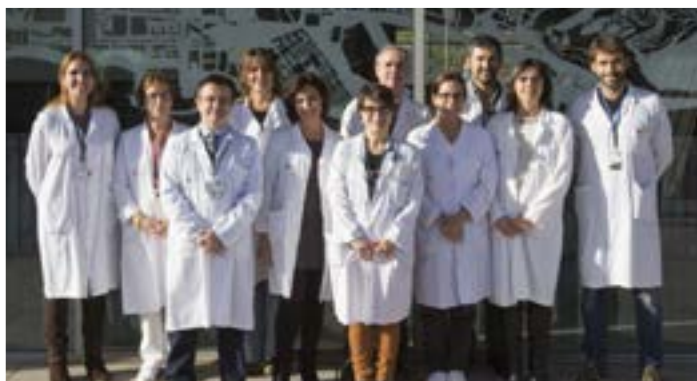
Chronic Respiratory Diseases

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Perea Soriano, Lidia IR
Puy Rion, María Carme FGS
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Suarez Cuartin, Guillermo Rafael IR
Torrego Fernández, Alfonso FGS
Torrejon Lázaro, Montserrat FGS



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 doctoral 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.
- ▶ Dr. D. Castillo Villegas, National Institute for Rare Diseases, Insitute 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.
 - Dra. Teresa Bazús González from Hospital Universitario Central de Asturias, Oviedo, Spain.
 - Dr. Luis Pérez de Llano from Hospital Lucus Augusti, Lugo, Spain (pending approval).
 - Dr. Patrick Berger from Université Bordeaux 2, Bordeaux, France.
 - Dr. James G Martin from McGill University, Montreal, Canada.

Active Grants

- ▶ David Ramos Barbon. The interaction between immune regulation and airway remodeling mechanisms in asthma: pathogenic outcomes versus therapeutic potencial. PI11/01001. Instituto de Salud Carlos III. Duration: 2012-2016. 129,372 €.
- ▶ 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 Toràctica. Duration: 2013-2016. 2,180.90 €.
- ▶ David Ramos Barbon. Grup de recerca en malalties respiratòries cròniques. 2014 SGR 1294. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ Mercedes Mayos Perez. 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: 2015-2017. 19,400 €.
- ▶ David Ramos Barbon. 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: 2015-2017. 121,500 €.
- ▶ Mercedes Mayos Perez. Proyecto PASHOS: Plataforma avanzada para el estudio del síndrome de Apnea hipopnea Obstructiva del sueño (SAHS). SOCAP 2013-2014. Societat Catalana de Pneumologia. Duration: 2014-2016. 10,909.08 €.

- ▶ 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 €.
- ▶ 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 €.
- ▶ Alfonso Torrego Fernandez. 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 €.
- ▶ 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 Toràctica. Duration: 2016-2017. 12,847.61 €.
- ▶ 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.

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

Chronic Respiratory Diseases

Awards

- ▶ Oriol Sibila. Early Career Award. American Thoracic Society (ATS), May 2016.
- ▶ Astrid Crespo. Asthma outcomes improve with continuous positive airway pressure for obstructive sleep apnea Premio de Investigación 2016. Academia Médica Balear.
- ▶ Virginia Pajares. Safety of transbronchial lung criobiopsy in mechanically ventilated patients in critical care. Multicenter study. Interventional Pulmonology Travel Grant (2016). 26rd Annual Congress of the European Respiratory Society.
- ▶ Patricia Peñacoba, M. Antònia Llauger, Rosa M. Miralda, Leandra Domínguez, Ana M. Fortuna, Anna Maria Pedro Pijoan, Pepi Valverde, José Ignacio Aoiz, Joan Bayó, Núria Argemí, Casimira Medrano, Joan Juvanteny, Montserrat Reverté, Xavier Flor, M. Ángeles Santos, M. del Mar Fraga, Carme Santiveri, Gabriel Sampol, Nuria Grau, Vicente Plaza, Mercedes Mayos. Prevalença dels símptomes suggestius de Síndrome d'Apnea- Hipopnea Obstructiva del Son a l'Atenció Primària. Award for the third best communication. XXXIV Diada Pneumològica. Reus, 16 abril 2016.
- ▶ Oriol Sibila Vidal. Premio Investigador Joven, for his line of research "Infección bronquial en pacientes con EPOC y agudizaciones frecuentes; papel de la inmunidad innata y utilidad de una nariz electrónica para su diagnóstico". Fundación Astra Zeneca.

Grants Awarded in 2016

- ▶ 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, Ministerio de Economía y Competitividad, 2016-2018, 178,150 €.
- ▶ Guillermo Rafael Suárez Cuartin. 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, 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, Sociedad Española de Neumología y Cirugía Torácica, 2016-2017, 17,100 €.
- ▶ Ana Maria 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, 2016-2017, 35,500 €.

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- ▶ Laia Garcia Bellmunt. Colonització bacteriana en la MPOC; paper dels nous mecanismes de defensa de la via aèria i nous mètodes diagnòstics. Directors: Oriol Sibila, Vicente Plaza
- ▶ Astrid Crespo Lessmann. Expresión de receptores Toll-like (TLR) II y IV en pacientes asmáticos. Relación con el fenotipo inflamatorio, la gravedad y el nivel de control del asma. Director: Vicente Plaza. 2016.
- ▶ Nadia Sonia Brienza. Clinical research on asthma through bronchial biopsy. Universidade da Coruña, Department of Medicine. Date of defense: 29 January, 2016.
- ▶ Marta Villarnovo Cerrillo. Experimental modeling of respiratory toxicology from "Prestige"-type fuel. Universidade da Coruña. Date of defense: 1 February 2016.
- ▶ Neus Salord. Impacte de la síndrome d'apnea del son sobre el metabolisme glucídica i la síndrome metabòlica en l'obesitat mòrbida Universitat Autònoma de Barcelona. Director: Mercè Mayos Pérez. 2016.

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Scientific Production

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Other Publications

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- ▶ Giner J., The American thoracic society/European respiratory society acceptability criteria for spirometry: Asking too much or not enough? (2015) RESP CARE, 60 (5), e114-.

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.

Challenges

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 (adipo-

cyte 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.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Challenges</p>	<p>Body composition</p> <ul style="list-style-type: none"> ▶ 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. <p>New antiretroviral drugs</p> <ul style="list-style-type: none"> ▶ Clinical trials of new antiretroviral drugs (phases 2 and 3). ▶ Ritonavir and non-ritonavir pharmacokinetic potentiation of antiretroviral drugs. <p>Cardiovascular risk associated with antiretroviral treatment</p> <ul style="list-style-type: none"> ▶ Establishment of a multicentre cardiovascular risk cohort. ▶ Study of antiretroviral treatment-dependent and non-treatment-dependent factors in multicentre cohorts. ▶ Development of in vitro models (adipose cultures) to study adipose toxicity for antiretroviral drugs. <p>Comorbid conditions associated with HIV-1 infection</p> <ul style="list-style-type: none"> ▶ 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. <ul style="list-style-type: none"> ▶ 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. <p>Pharmacogenetics (toxicogenetics)</p> <ul style="list-style-type: none"> ▶ 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. <p>Bacterial meningitis</p> <ul style="list-style-type: none"> ▶ 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.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Collaborations</p>	<p>Collaborations with other IIB Sant Pau Groups</p> <ul style="list-style-type: none"> ▶ Microbiology and Infectious Diseases (Dr. Pere Coll).
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Active Grants</p>	<ul style="list-style-type: none"> ▶ 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 €. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Grants Awarded in 2016</p>	<ul style="list-style-type: none"> ▶ Joan Villarroya Terrade. Estudio de las alteraciones metabólicas y óseas en pacientes VIH bajo tratamiento antirretroviral., IJCI-2014-19681, Ministeri d'Economia i Competitivitat, 2016-2018, 72,050 €. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>

Research Group in HIV and AIDS

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Scientific Production

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treatment of opportunistic infections and other coinfections in HIV-infected patients: May 2015 (2016) ENFERM INFECC MICR CL.

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Lamarca K., Garcia Sarasola A., Vidal F., Domingo P., Drug therapies for HIV-related metabolic disorders (2016) EXPERT OPIN PHARMACO, 17 (10), 1327-1338.

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AREA 3

Haematological and Oncological D

142 Clinical Oncology

146 Oncogenesis and Antitumour Drugs

150 Haematological Diagnosis

152 Molecular Pathology of Gynaecologic Cancer

154 Ear, Nose and Throat Cancers

156 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 Gynaecologic Cancer (Dr. Jaime Prat).
- ▶ 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 Escuin Borrás. 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: 2014-2017. 76,000 €.
- ▶ David Paez Lopez-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 Español-

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- ▶ 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 Tractament de Tumores Urológicos. Duration: 2015-2017.

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

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- ▶ 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, 2016-2017, 35,500 €. Note: Total amount granted to PI. It does not include indirect costs.

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- ▶ Ivana Sullivan. Identification of molecular abnormalities in Pulmonary Neuroendocrine Tumors through whole-exome, RNA sequencing and DNA methylation. Georges Mathé Translational Research Fellowship. European Society for Medical Oncology (ESMO).

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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.
- ▶ Achieve antimetastatic effects by targeting antitumour drugs to metastasis stem cells in solid tumors and haematological neoplasias.
- ▶ Develop molecular markers for therapeutic decision-making in head and neck carcinomas.
- ▶ Enhance international collaboration and participation in EU networks and industrial projects.

Collaborations with other IIB Sant Pau Groups

- ▶ Irene Arroyo Solera (GOA). Beca AGAUR. Desenvolupament de models metastàtics de carcinoma de cap i coll i paper de Serpina1 en disseminació. AGAUR, Generalitat de Catalunya. FI DGR-2013. Duration: 2012-2015.

National Collaborations

- ▶ Eduard Batlle, Biomedical Research Institute (IRB) and Barcelona Scientific Park (PCB).
- ▶ Roger Gomis, Biomedical Research Institute (IRB) and Barcelona Scientific Park (PCB).
- ▶ CB06/01/1031. Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN). Instituto de Salud Carlos III. 2010-2015. 80,000-117,000 €/year.
- ▶ ICTS 141007: NANBIOSIS. Recognition by MINECO as Infraestructura Científica y Técnica Singular (ICTS) en Ciencias de la Salud y Biotecnología (Producción y Caracterización de Nanomateriales, Biomateriales y Sistemas en Biomedicina), Unitat de Natxoicoologia, Institut d'Investigacions Biomèdiques Sant Pau and CIBER-BBN. Coordinators: Centro de Investigación Biomédica en Red (CIBER-BBN) y Centro de Cirugía Mínima Invasiva Jesus Usón (JUS-MISC). Financing agency: MINECO. Grant date: 8/10/14.
- ▶ 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).
- ▶ COST Action CM1106. European Union. Chemical Approaches to Targeting Drug Resistance in Cancer Stem Cells. EU RTD Framework Programme. MC Member: Ramon Mangués. Management Committee Member & Biology and Pharmacology Working Group Member, Duration: 28/03/12-27/03/16.
- ▶ 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).

- ▶ Ramon Mangués Bafalluy. Modelos de cáncer de colon metastásico para el estudio de la recidiva tumoral. PI12/01861. Instituto de Salud Carlos III. Duration: 2013-2016. 181,500 €.
- ▶ Ramon Mangués Bafalluy. Genotoxic nanoparticles targeting colorectal cancer stem cells. 20132030. Fundació La Marató de TV3. Duration: 2014-2017. 142,000 €.
- ▶ Ramon Mangués Bafalluy. Grup d'oncogènesi i antitumorals (GOA). 2014 SGR 1041. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 30,000 €.
- ▶ Ramon Mangués Bafalluy. Terapia de nanoconjugados dirigida a células iniciadoras de metástasis en cancer colorectal. EUIN2013-50829. Ministerio de Economía y Competitividad. Duration: 2014-2016. 22,000 €.
- ▶ Ugutz Unzueta Elorza. Contractes "Sara Borrell" 2014. CD14/00055. Instituto de Salud Carlos III. Duration: 2015-2018. 86,598 €.
- ▶ Ramon Mangués Bafalluy. 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: 2015-2017. 172,000 €.

- ▶ Ramon Mangués 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 €.
- ▶ Ramon Mangués Bafalluy. Prevenció 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 €.
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- ▶ Ramon Mangués 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 €.

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

Oncogenesis and Antitumour Drugs

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Scientific Production

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Other Publications

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Haematological Diagnosis

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Main Lines of Research

Malignant Haemopathologies

- ▶ Diagnostic activities: morphological, immunophenotyping, cytogenetic and molecular characterization (particularly of acute leukaemias).
- ▶ Biological characteristics responding to therapy.
- ▶ New treatments using cell line models aimed at molecular targets.
- ▶ Genomic (microarrays) and proteomic platforms for diagnosis.
- ▶ Murine models development.

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.
- ▶ 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.
- ▶ Develop functional cell culture and animal (murine) models.
- ▶ 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 haematology, pathology, gastrointestinal, haemostasis 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

- ▶ Oncology / Haematology and Transplantation / Oncology / Haematology and Transplantation (PI: Jordi Sierra).
- ▶ Genetic Diseases (PI: Montserrat Baiget).
- ▶ Molecular Bases of Disease (PI: Pablo Fuentes).

External Collaborations

- ▶ Dr. Anna Bigas, IMIM Hospital del Mar.
- ▶ Dr. Pablo Menéndez, Josep Carreras Foundation (Hospital Clínic).
- ▶ Dr. Alberto Villanueva, IDIBELL-Bellvitge Biomedical Research Institute.

Active Grants

▶ Josep Francesc Nomdedeu Guinot. Niveles de ARNm de WT1 en neoplasias mieloides. Aplicación de los métodos de PCR digital en la estratificación pronóstica y en el manejo de las recaídas. PI13/02729. Instituto de Salud Carlos III. Duration: 2014-2016. 57,500 €.

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Molecular Pathology of Gynaecologic Cancer

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Main Lines of Research

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

Challenges

- ▶ Progress as a productive translational gynaecological cancer research group, capable of competing with other highly visible groups in Barcelona that publish regular articles in reputable journals.
- ▶ Cooperate with other groups at the national and international levels.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Experimental Immunology (Silvia Vidal).

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. Alteraciones moleculares relacionadas con la progresión tumoral en el cáncer de endometrio. AECC 2011. Associació Espanyola Contra el Càncer. Duration: 2011-2016. 262,000 €.
- ▶ Iñigo Espinosa Mariscal. La importancia de la vía CSF1 en los leiomiomas uterinos. PI12/01645. Instituto de Salud Carlos III. Duration: 2013-2016. 70,000 €.
- ▶ Jaime Prat Díaz de Losada. Red Temática de Investigación Cooperativa en Cáncer (RTICC). RD12/0036/0011. Instituto

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

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Ear, Nose and Throat Cancers

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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 Vintro. Herramienta de predicción de respuesta a la radioterapia basada en la expresión de genes relacionados con la transición epitelial-mesenquimal en cáncer de cabeza y cuello. PI14/01918. Instituto de Salud Carlos III. Duration: 2015-2017. 71,500 €.

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IF: 1.6600

Sumarroca A., Codina A., Leon X., Oral cavity, pharynx and larynx nodules (2016) EUR ANN OTORHINOLARY, 133 (4), 289-291.
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IF: 3.3760

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- ▶ Gras JR, Rodríguez F, Martel M, Mas M, Mirapeix R, Montserrat JR, Masegur H, Quer M.: Anatomía Quirúrgica de la Órbita. Editorial P. Permanyer, 2016. (ISBN 978-84-9926-921-4).

Theses

- ▶ Anna Albertí i Casas. Avaluació dels resultats quirúrgics en estapedectomies de GAP petit. Universitat Autònoma de Barcelona. Directors: Miquel Quer; Enric Figuerola. Date of defense: 14/01/2016.
- ▶ Maria Josep Nadal Castells. Prevenció del Linfedema tras el vaciamiento axilar ganglionar en cáncer de mama. Universitat Autònoma de Barcelona. Directors: Miquel Quer; Helena Bascuñana; Celestion Barastegui. Date of defense: 29/01/2016.

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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 Nomdedéu).
- ▶ 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.

Theses

- ▶ José Luis Piñana Sánchez. Complicaciones orgánicas en el trasplante de progenitores hematopoyéticos con acondicionamiento de intensidad reducida. Universitat Autònoma de Barcelona. Directors: Jordi Sierra, Rodrigo Martino. Date of defense: 25/01/2016.
- ▶ Pau Montesinos. Tratamiento adaptado al riesgo de la leucemia promielocítica aguda con ATRA y quimioterapia. Universitat Autònoma de Barcelona. Director: Jordi Sierra. Date of defense: 27/01/2016.
- ▶ Anna Clopés Estela. Optimización mediante análisis farmacocinético del tratamiento de Busulfán en dos poblaciones específicas de pacientes onco-hematológicos. Universitat Autònoma de Barcelona. Director: Jordi Sierra. Date of defense: 05/02/2016.
- ▶ Laura Escribà Garcia. Cellular immunotherapy for B-cell lymphoma with B-cell lymphoma with NKT-cell agonists. Universitat Autònoma de Barcelona. Director: Javier Briones Meijide. Date of defense: 26/05/2016.

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- ▶ Jordi Sierra Gil. Red Temática de Investigación Cooperativa en Cáncer (RTICC). RD12/0036/0071. Instituto de Salud Carlos III. Duration: 2013-2017. 321,500 €.
- ▶ 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 €.
- ▶ 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 €.
- ▶ 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: 2015-2017. 19,500 €.
- ▶ 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 €.
- ▶ 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. Ministerio de Economía y Competitividad. Duration: 2015-2018. 112,138.60 €.
- ▶ Javier Briones Meijide. Celulas T de memoria "STEM" transducidas con un receptor quimerico antígeno-especifico (CAR) dirigido al antígeno BCMA en linfoma de Hodgkin. PI15/01383. Instituto de Salud Carlos III. Duration: 2016-2018. 51,500 €.
- ▶ Carolina Moreno Atanasio. Long-term survivors in Chronic Lymphocytic Leukemia. AECC 2015-2. Asociación Española Contra el Cáncer. Duration: 2016-2018. 20,000 €.
- ▶ 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: 2015-2017. 118,181.82 €.
- ▶ Javier Briones Meijide. Inmunoterapia mediante células T de memoria "stem" modificadas con receptores quiméricos antígeno-específicos (CARs) para tratamiento de pacientes con neoplasias linfoides. Conveni CELLEX-3. Fundació CELLEX. Duration: 2015-2018. 190,000 €.

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

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- ▶ Carolina Moreno Atanasio, Geriatric assessment in elderly patients with chronic lymphocytic leukemia. GLD16/00153, Gilead Sciences, S.L.U. Duration: 2016-2018, 32,000 €.

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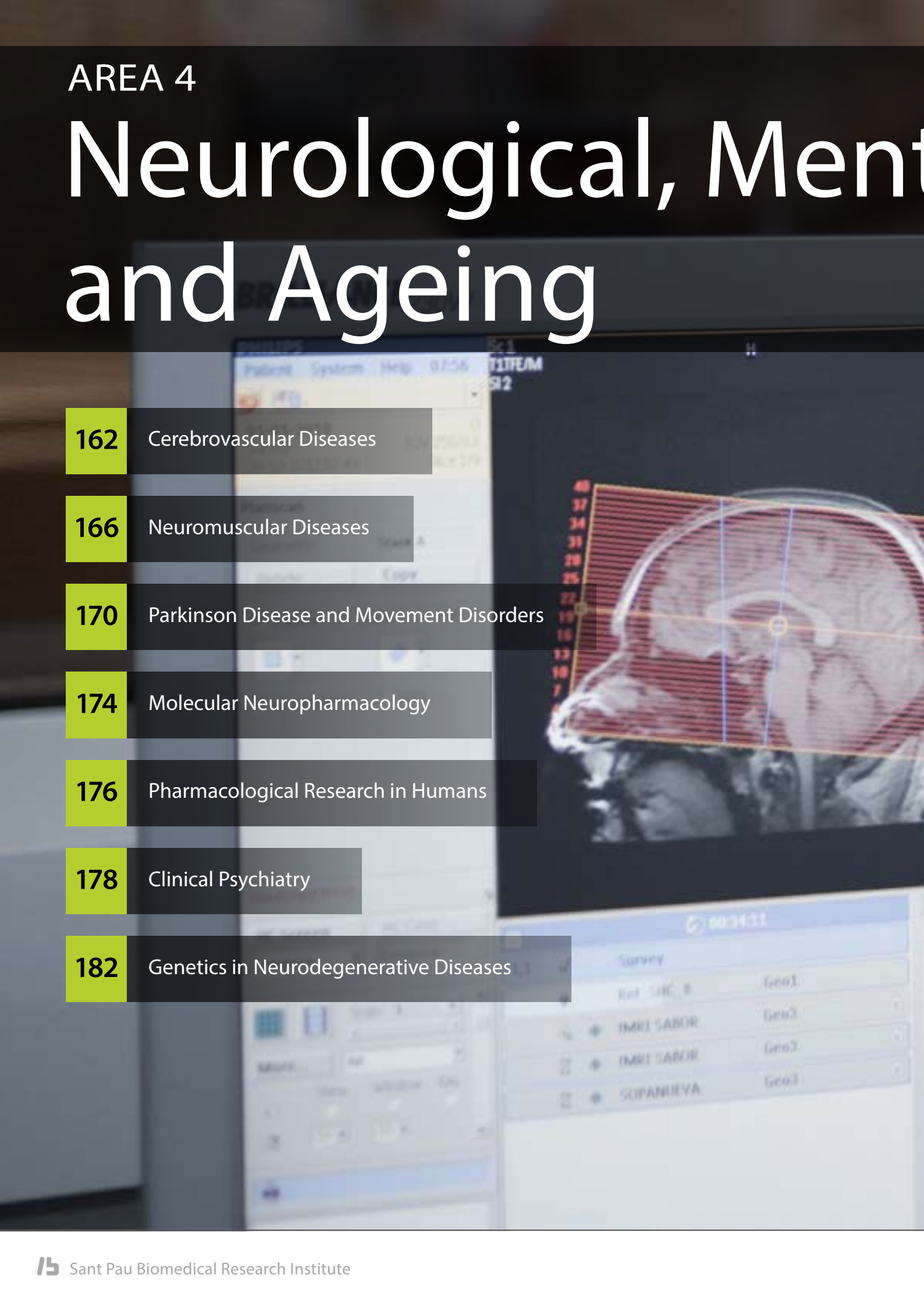
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AREA 4

Neurological, Mental and Ageing

- 
- 162** Cerebrovascular Diseases
 - 166** Neuromuscular Diseases
 - 170** Parkinson Disease and Movement Disorders
 - 174** Molecular Neuropharmacology
 - 176** Pharmacological Research in Humans
 - 178** Clinical Psychiatry
 - 182** Genetics in Neurodegenerative Diseases

tal Disorders

184 Human Neuropsychopharmacology

186 Neurobiology of Dementia

190 Neuroradiology

192 Ageing Institute

194 Addictive Behaviours

196 Molecular Physiology of the Synapse



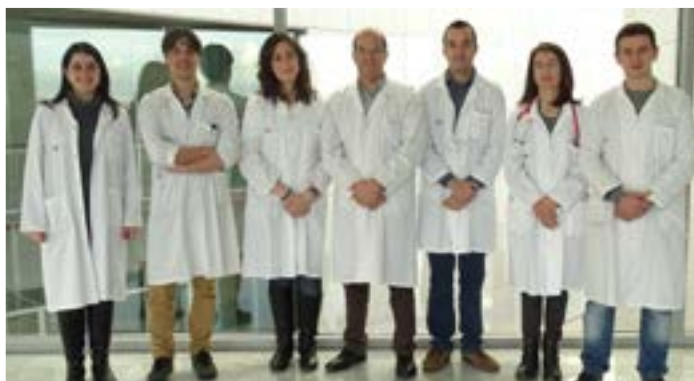
Cerebrovascular Diseases

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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.
- ▶ Sonothrombolysis.
- ▶ 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.

Active Grants

- ▶ Joan Martí Fàbregas. INVICTUS. RD12/0014/0002. Instituto de Salud Carlos III. Duration: 2013-2017. 165,220.40 €.
 - ▶ Joan Martí Fàbregas. Malalties Vasculares Cerebrals. 2014 SGR 703. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
 - ▶ 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 €.
 - ▶ Joan Martí Fàbregas. REgenerative Stem cell therapy for STroke in Europe - RESTORE. PHC-15-2015. Unió Europea. Duration: 2015-2020. 389,580 €.
- Note: Total amount granted to PI. It does not include indirect costs.

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.

External Collaborations

- ▶ 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. Israel Fernández, Dr. Joan Montaner, Hospital Vall d'Hebron, Barcelona, Spain.
- ▶ Dr. Blanca Fuentes, Hospital La Paz, Madrid, Spain.
- ▶ Dr. Patricia Martínez, Hospital La Paz, Madrid, Spain.
- ▶ Dr. Antonio Gil, Hospital Gregorio Marañón, Madrid, Spain.
- ▶ Dr. Ángel Chamorro, Hospital Clínico de Barcelona, Spain.

- ▶ Dr. Antonio Dávalos, Hospital Germans Trias i Pujol, Badalona, Spain.
- ▶ Dr. Francesc Purroy, Hospital Arnau de Vilanova, Lleida, Spain.
- ▶ RETICS (cooperative health research network) / INVICTUS (ictus research)
- ▶ Clinical trials:
 - IMPACT-24b: Implant in the sphenopalatine ganglion to increase cerebral blood flow 24 hours after stroke onset.
 - IMPACT-24Bt: Implant in the sphenopalatine ganglion to increase cerebral blood flow 24 hours after stroke onset (rt-PA port).
 - CLEAR III: Evaluation of thrombolytic therapy in intraventricular haemorrhage.
 - LIFE: Multicentre, randomized, double-blind, parallel group, placebo-controlled study of the effect of treatment with F2695 (75 mg OD) in 3 months to improve functional capacity in patients with ischaemic stroke.
- ▶ Dra. Jennifer Linn (SUSPECT study), University of Rochester, New York
- ▶ Dr. David Werring (HERO study), National Hospital for Neurology and Neurosurgery, London.
- ▶ Dr. Peter Kelly (BIOVASC study), Mater University Hospital, Dublin.

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Perez De La Ossa N., Abilleira S., Dorado L., Urria X., Ribo M., Cardona P., Giralt E., Marti-Fabregas J., Purroy F., Serena J., Canovas D., Garces M., Krupinski J., Pellise A., Saura J., Molina C., Dávalos A., Gallofre M., Delgado Mederos R., Martinez Domeno A., Marin Bueno R., Roquer J., Rodriguez-Campello A., Ois A., Jimenez-Conde J., Cuadrado-Godia E., Guimaraens L., Chamorro A., Obach V., Ama-

Cerebrovascular Diseases

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Scientific Production

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Other Publications

- ▶ Kase C.S., Mohr J.P., Marti-Fabregas J., José Luis Martí Vilalta (1946-2014). (2015) CEREBROVASC DIS, 99-.
- ▶ Zapata-Wainberg G., Ximénez-Carrillo Rico Á., Benavente Fernández L., Masjuan Vallejo J., Gállego Culleré J., Freijó Guerrero M.M., Egido J., Gómez Sánchez J.C., Martínez Domeño A., Purroy García F., Vives Pastor B., Blanco González M., Vivancos J.; representing the research team of the TAC Registry study. Epidemiology of Intracranial Haemorrhages Associated with Vitamin K Antagonist Oral Anticoagulants in Spain: TAC Registry. (2015) INTERV NEUROL, 4(1-2), 52-8.

Neuromuscular Diseases

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Main Lines of Research

Autoimmune neuromuscular diseases

- ▶ Characterization of new target antigens in Myasthenia Gravis, and immune neuropathies (CIDP, GBS, MMN). Their use as diagnostic and therapeutic biomarkers.
- ▶ Pathogenesis of newly recognized paranodal antigens 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).
- ▶ 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.
- ▶ Study of miRNA profiles and muscle secretome in muscular dystrophies.
- ▶ Role of PDGF in muscular dystrophies fibrosis.
- ▶ Natural history of Dysferlinopathies. The international COS-study Jain Foundation.
- ▶ To evaluate the frequency of carriers of mutations in the dyferlin gene in normal population.

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, PM, IBM).
- ▶ 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 muscular dystrophy resulting from dysferlin deficiency and other muscular dystrophies.
- ▶ Cleanroom access to manipulate cells for use in humans.
- ▶ Use of the NMD.ES registry to perform research in different NMD.

Collaborations

External Collaborations

- ▶ Jerome Devaux, Marseilles, France.
- ▶ Silvere van der Maarel, Leiden, The Netherlands.
- ▶ Xavier Navarro, Departament de Medicina, Universitat Autònoma de Barcelona, Spain.
- ▶ R. Martí, Hospital Vall d'Hebron, Barcelona, Spain.

Awards

- ▶ Eugenia Martínez. Extraordinary award for the thesis Biomarcadores en el diagnóstico y tratamiento de la miastenia. Universitat Autònoma de Barcelona.
- ▶ Jordi Díaz. Extraordinary award for the thesis Dysferlin myopathy: new insights in diagnosis and therapy. Universitat Autònoma de Barcelona.

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 €.
- ▶ Luis Antonio Querol Gutiérrez. Contratos Juan Rodés 2013. JR13/00014. Instituto de Salud Carlos III. Duration: 2014-2016. 135,000 €.
- ▶ Eduard Gallardo Vigo. Recerca en Malalties Neuromusculars. 2014 SGR 272. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 30,000 €.
- ▶ Ricardo Rojas García. Biomarkers profile in different phenotypes of Motor Neuron Disease. MARATO 20143710. Fundació La Marató de TV3. Duration: 2015-2018. 120,500 €.
- ▶ Maria Isabel Illa Sendra. Paranodal autoimmunity in CIDP: diagnostic and Therapeutic value Rationale and Objective. GBS/CIDP 2014. Foundation International Guillain-Barré syndrome chronic inflammatory demyelinating polyradiculopathy. Duration: 2014-2016. 39,720 €.

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

Grants Awarded in 2016

- ▶ Maria Isabel Illa Sendra. Aproximaciones terapéuticas en distrofias musculares mediante modelos celulares y animales. GEMIO 2016. Fundación Isabel Gemio. Duration: 2016-2019. 160,908.99 €.
- ▶ 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 €.
- ▶ 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 €.
- ▶ Ricardo Rojas García. Identificación de biomarcadores diagnósticos en pacientes con Esclerosis Lateral Amiotrófica. PI15/01618. Instituto de Salud Carlos III. Duration: 2016-2018. 91,500 €.

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

Neuromuscular Diseases

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Aragones J.M., Altimiras J., Roura-Poch P., Homs E., Bajo L., Povedano M., Cortes-Vicente E., Illa I., Al-Chalabi A., Rojas-Garcia R., Amyotrophic lateral sclerosis: A higher than expected incidence in people over 80 years of age (2016) *AMYOTROPH LAT SCL FR*, 17 (7-8), 522-527.

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Cruz S., Cortes-Vicente E., Illa I., Rojas-Garcia R., Transthyretin-related hereditary amyloid polyneuropathy presenting with large fibre involvement and cardiomyopathy (2016) *AMYLOID*, 1-2.

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Diaz-Manera J., Alejaldre A., Gonzalez L., Olive M., Gomez-Andres D., Muelas N., Vilchez J.J., Llauger J., Carbonell P., Marquez-Infante C., Fernandez-Torron R., Poza J.J., Lopez de Munain A., Gonzalez-Quereda L., Mirabet S., Clarimon J., Gallano P., Rojas-Garcia R., Gallardo E., Illa I., Muscle imaging in muscle dystrophies produced by mutations in the EMD and LMNA genes (2016) *NEUROMUSCULAR DISORD*, 26 (1), 33-40.

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Figueroa-Bonaparte S., Segovia S., Llauger J., Belmonte I., Pedrosa I., Alejaldre A., Mayos M., Suarez-Cuartin G., Gallardo E., Illa I., Diaz-Manera J., Barba-Romero M.A., Barcena J., Carbonell P., Carzoria M.R., et al. Muscle MRI findings in childhood/adult onset pompe disease correlate with muscle function (2016) *PLOS ONE*, 11 (10).

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Huijbers M.G., Vink A.-F.D., Niks E.H., Westhuis R.H., van Zwet E.W., de Meel R.H., Rojas-Garcia R., Diaz-Manera J., Kuks J.B., Klooster R., Straasheijm K., Evoli A., Illa I., van der Maarel S.M., Verschuuren J.J., Longitudinal epitope mapping in MuSK myasthenia gravis: Implications for disease severity (2016) *J NEUROIMMUNOL*, 291, 82-88.

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Manso C., Querol L., Mekaouche M., Illa I., Devaux J.J., Contactin-1 IgG4 antibodies cause paranode dismantling and conduction defects (2016) *BRAIN*, 139 (6), 1700-1712.

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Sanders D.B., Wolfe G.J., Benatar M., Evoli A., Gilhus N.E., Illa I., Kuntz N., Massey J.M., Melms A., Murai H., Nicolle M., Palace J., Richman D.P., Verschuuren J., Narayanaswami P., International consensus guidance for management of myasthenia gravis: Executive summary (2016) *NEUROLOGY*, 87 (4), 419-425.

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Valassi E., Crespo I., Malouf J., Llauger J., Aulinas A., Marin A.M., Biagetti B., Webb S.M., Reduction of trabecular and cortical volumetric bone mineral density at the proximal femur in patients with acromegaly (2016) *EUR J ENDOCRINOL*, 174 (2), 107-114.

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van Rheenen W., Shatunov A., Dekker A.M., McLaughlin R.L., Diekstra F.P., Pulit S.L., van der Spek R.A.A., Vosa U., de Jong S., Robinson M.R., Yang J., Fogh I., van Doormaal P.T., Tazelaar G.H.P., Koppers M., et al. Genome-wide association analyses identify new risk variants and the genetic architecture of amyotrophic lateral sclerosis (2016) *NAT GENET*, 48 (9), 1043-1048.

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Zufiria M., Gil-Bea F.J., Fernandez-Torron R., Poza J.J., Munoz-Blanco J.L., Rojas-Garcia R., Riancho J., de Munain A.L., ALS: A bucket of genes, environment, metabolism and unknown ingredients (2016) *PROG NEUROBIOL*, 142, 104-129.

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Other Publications

- ▶ Horga A., Cottenie E., Tomaselli P.J., Rojas-Garcia R., Salvado M., Villarreal-Perez L., Gamez J., Marquez-Infante C., Houlden H., Reilly M.M., Absence of HINT1 mutations in a UK and Spanish cohort of patients with inherited neuropathies. (2015) *J NEUROL*, 262 (8), 1984-1986.
- ▶ Loureiro Amigo J., Gallardo E., Gallano P., Grau-Junyent J.M., Dysferlinopathy masquerading as a refractory polymyositis. (2015) *MED CLIN-BARCELONA*, 145 (9), 414-415.

Parkinson Disease and Movement Disorders

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Pagonabarraga Mora,
Javier FGS
Pascual Sedano,
Berta Marta FGS
Pérez Pérez, Jesús IR
Sosti Sosa,
Maria Victoria CIBERNED
Yarritu Corrales, Ion IR



Main Lines of Research

Cognitive Impairment and Behavioural Dysfunctions in Parkinson Disease

- ▶ Knowledge and detection of the neural correlates of cognitive performance in Parkinson disease using neurophysiological techniques (event-related brain cognitive potentials) and structural and functional neuroimaging (voxel-based morphometry, cortical thickness and spectroscopy).
- ▶ Development of more sensitive tools for cognitive and functional assessment in Parkinson disease to detect subtle changes in cognitive performance and treatment response.
- ▶ Prospective follow-up analysis of cognition and mood in patients with deep-brain stimulation of the subthalamic nucleus.
- ▶ Physiological correlates and pharmacological approach to apathy in Parkinson disease and other movement disorders.
- ▶ Neurophysiological and cognitive correlates of impulse control disorders in Parkinson disease and other movement disorders. Behavioral and pharmacological treatment.
- ▶ Surgery and treatments of continuous infusion in Parkinson disease.
- ▶ Follow-up and etiologic study of weight loss in patients treated with continuous infusion of intraduodenal levodopa.
- ▶ Follow-up and etiologic study of weight loss in patients treated with continuous infusion of intraduodenal levodopa.

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)..

Translational Research - Parkinsonian Animal Models

- ▶ Assessment of behavioural and cognitive modulations exerted by distinct antiparkinsonian drugs in murine models of Parkinson disease with lesions in particular neurotransmitter systems (dopaminergic and noradrenergic lesions).
- ▶ Assessment of behavioural and cognitive traits of murine models of HD.

Translational Research - Cell Models

- ▶ Assessment of cell cultures of neurons derived of induced pluripotent cells (iPSCs) obtained from skin fibroblast as in vitro model for the modulation of key factors associated to both cognitive and neurotransmitter disturbances in Parkinson disease.

Huntington Disease

- ▶ Study of the metabolic correlates (18-FDG PET) of disease progression from the pre-manifested to early-stages.
- ▶ Study of the metabolic correlates (18-FDG PET) of apathy and depression in pre-manifested gene carriers.
- ▶ Functional magnetic resonance imaging study of reward sensitivity in pre-manifested an early-stage Huntington's disease.
- ▶ Determination of the prevalence and clinical significance of neuropsychiatric features in Huntington's disease.
- ▶ Development of new instruments for cognitive and functional assessment in Huntington's disease.
- ▶ Prospective observational study of Huntington's disease in a European cohort (Registry Study).
- ▶ Molecular, clinical, behavioural and cognitive characterisation of the BACHD rat model of Huntington's disease.

Main Lines of Research

- ▶ Collaboration in multicentre and Spanish coordinated projects:
 - Relationship between intermediate alleles and clinical manifestations (PI: Esther Cubo, Burgos).
 - Validation of the Spanish version of the Problem Behaviour Assessment Scale (PBA-S; PI: Jesús Ruiz, Barcelona).
 - Study of dietary intake in Huntington's disease (PI: Esther Cubo, Burgos).
 - A multimodal neuroimaging approach to delineate emotional, motor and cognitive cortico-striatal pathways. IDIBELL (PI: Ruth de Diego-Balaguer, Barcelona).

Progressive Supranuclear Palsy

- ▶ Development of a cognitive rating scale.
- ▶ Development of a standardized eye movement evaluation.

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.

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.

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 Research 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 (Subcommittee 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).

Parkinson Disease and Movement Disorders

Active Grants

- ▶ Jaime Kulisevsky Bojarski. Desarrollo, validación y estudio de la sensibilidad al cambio de una versión alternativa de la Parkinson's Disease - Cognitive Rating Scale. PI12/03005. Instituto de Salud Carlos III. Duration: 2013-2017. 23,500 €.
- ▶ Jaime Kulisevsky Bojarski. Huntington's Disease Network. EHDN. Duration: 2010-2021.
- ▶ 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 €.
- ▶ 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 €.
- ▶ 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 €.
- ▶ Javier Pagonabarraga Mora. Marcadores en sangre y neurofisiológicos de la progresión del deterioro cognitivo en la enfermedad de Parkinson. PI14/02058. Instituto de Salud Carlos III. Duration: 2015-2017. 54,500 €.

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

Grants Awarded in 2016

- ▶ Juan Marin Lahoz. Contratos Río Hortega 2015. CM15/00071. Instituto de Salud Carlos III. Duration: 2016-2018. 53,732 €.
- ▶ 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 €.

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

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Scientific Production

Cervera-Carles L., Pagonabarraga J., Pascual-Sedano B., Pastor P., Campolongo A., Fortea J., Blesa R., Alcolea D., Morenas-Rodriguez E., Sala I., Lleo A., Kulisevsky J., Clarimon J., Copy number variation analysis of the 17q21.31 region and its role in neurodegenerative diseases (2016) *AM J MED GENET B*, 171 (2), 175-180.

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Gironell A., Marin-Lahoz J., The essence of essential tremor: Neurochemical bases (2016) *REV NEUROLOGIA*, 62 (11), 507-515.

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Lopez-Mora D.A., Lopez-Mora D.A., Carrio I., Camacho V., Perez-Perez J., Martinez-Horta S., Fernandez A., Sampedro F., Montes A., Lozano-Martinez G.A., Gomez-Anson B., Kulisevsky J., Carrio I., Striatal hypometabolism in premanifest and manifest Huntington's disease patients (2016) *EUR J NUCL MED MOL I*, 43 (12), 2183-2189.

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Marin-Lahoz J., Gironell A., Linking Essential Tremor to the Cerebellum: Neurochemical Evidence (2016) *CEREBELLUM*, 15 (3), 243-252.

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Martinez-Horta S., Perez-Perez J., van Duijn E., Fernandez-Bobadilla R., Carceller M., Pagonabarraga J., Pascual-Sedano B., Campolongo A., Ruiz-Idiago J., Sampedro F., Landwehrmeyer G.B., Kulisevsky J., Neuropsychiatric symptoms are very common in premanifest and early stage Huntington's Disease (2016) *PARKINSONISM RELAT D*, 25, 58-64.

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Pagonabarraga J., Martinez-Horta S., Fernandez de Bobadilla R., Perez J., Ribosa-Nogue R., Marin J., Pascual-Sedano B., Garcia C., Gironell A., Kulisevsky J., Minor hallucinations occur in drug-naive Parkinson's disease patients, even from the premotor phase (2016) *MOVEMENT DISORD*, 31 (1), 45-52.

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Rodriguez-Revenga L., Pagonabarraga J., Gomez-Anson B., Lopez-Mourelo O., Izquierdo S., Alvarez-Mora M.I., Granell E., Madrigal I., Mila M., Carriage of One or Two FMR1 Premutation Alleles Seems to Have No Effect on Illness Severity in a FXTAS Female with an Autozygous FMR1 Premutation Allele (2016)

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Other Publications

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▶ Relationship between Nutritional Status and the Severity of Huntington's Disease. A Spanish Multicenter Dietary Intake Study. (2015) J HUNTINGTONS DIS, 4(1), 78-85.

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▶ Krack P., Pagonabarraga J., Strafella A.P., Kulisevsky J. Apathy: who cares? (2015) LANCET NEUROL, 14(5), 465.

▶ Mild cognitive impairment in Parkinson's Disease. In: Neuropsychiatric Symptoms of Movement Disorders (p. 29-52). Editorial Springer.

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Molecular Neuropharmacology

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Main Lines of Research

- ▶ Chronic pain affects a high percentage of the adult 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 using pharmacological, molecular and genetic approaches.
- ▶ Establish new strategies to improve the analgesic effects produced by opioids and cannabinoids in the treatment of chronic pain and avoiding the development of side effects.
- ▶ Identify new targets for the treatment of inflammatory, arthritic, and neuropathic pain by using different pharmacological approaches in several animal models of pain.
- ▶ Identify new approaches for treating diabetic neuropathy and oxidative stress, two of the main complications of diabetes, by evaluating the effects produced by several specific drug combinations in type I and II diabetic mice.
- ▶ Investigate the role played by nitric oxide-carbon monoxide systems in the modulation of the nociceptive and emotional responses induced by chronic pain in transgenic animals.

Challenges

- ▶ Identify new pharmacological compounds that effectively abolish chronic pain without side effects and which use can be transferred to clinical practice and/or patentable.
- ▶ Advance knowledge of the molecular mechanisms involved in the enhanced antinociceptive actions produced by opioids and cannabinoids combined with the heme oxygenase 1 signaling pathway inducer compounds.
- ▶ Develop new effective drug combinations for the treatment of neuropathic pain and oxidative stress associated with diabetes.
- ▶ Knowledge of the role played by gaseous neurotransmitters in the modulation of nociceptive and emotional responses induced by inflammatory pain.

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

- ▶ Prof. Christie Leite-Panissi. 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.

- ▶ Pedro José Otaegui Goya. Equipos de Monitarización conductual. UNAB13- 4E-1952. Ministerio de Economía y Competitividad. Duration: 2013-2015.

Active Grants

- ▶ Olga Pol Rigau. Nuevas estrategias en el tratamiento de la neuropatía diabética. PI14/00927. Instituto de Salud Carlos III. Duration: 2015-2017. 71,500 €.
- ▶ Olga Pol Rigau. Possible interaction CO-NO in the emotional and nociception modulation: role of locus coeruleus. PVE 2014. Ciencia sin Fronteras. Duration: 2015-2017.

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

Awards

- ▶ Best UAB Neuroscience thesis of the year extraordinary award to Arnau Hervera's these, directed by Olga Pol, year 2012-13.

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Scientific Production

Silvia C., Mireia C., Sergi L., Olga P., The induction of heme oxygenase 1 decreases painful diabetic neuropathy and enhances the anti-nociceptive effects of morphine in diabetic mice. (2016) PLOS ONE, 11 (1).

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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, bioavailability 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 clinical trials for national and international pharmaceutical companies.

Active Grants

- ▶ Rosa Maria Antonijoan Arbós. Centre d'Investigació de Medicaments. 2014 SGR 386. 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 2016

- ▶ 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. Ministerio de Economía y Competitividad. Duration: 2016-2019. 100,796 €.

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

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Scientific Production

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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

- ▶ Iluminada Corripio Collado. Determinantes clínicos y neurobiológicos de segundos episodios de esquizofrenia. Estudio longitudinal de primeros episodios psicóticos. PI11/00260. Instituto de Salud Carlos III. Duration: 2012-2016. 75,727 €.
- ▶ 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 €.
- ▶ 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: 2014-2017. 56,300 €.
- ▶ Joaquin 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 €.
- ▶ Enric Álvarez Martínez. Grup de Recerca en Trastorns Psiquiàtrics de Sant Pau. 2014 SGR 468. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ Francisco Javier de Diego Adeliño. Papel de la microbiota en el origen y las consecuencias de la inflamación en depresión. Estudio traslacional. PI13/01102 - 1 C. Instituto de Salud Carlos III. Duration: 2014-2016.
- ▶ 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: 2015-2017. 81,500 €.
- ▶ 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 €.
- ▶ Francisco Javier de Diego Adeliño. Contratos Juan Rodés 2014. JR14/00011. Instituto de Salud Carlos III. Duration: 2015-2018. 135,000 €.
- ▶ Eva Maria 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 €.

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

Clinical Psychiatry

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Bioque M., Llerena A., Cabrera B., Mezquida G., Lobo A., Gonzalez-Pinto A., Diaz-Caneja C.M., Corripio I., Aguilar E.J., Bulbena A., Castro-Fornieles J., Vieta E., Lafuente A., Mas S., Parellada M., Saiz-Ruiz J., et al. A Pharmacovigilance Study in First Episode of Psychosis: Psychopharmacological Interventions and Safety Profiles in the PEPs Project (2016) INT J NEUROPSYCHOPH, 19 (4).

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IF: 3.9860

Campos D., Cebolla A., Quero S., Breton-Lopez J., Botella C., Soler J., Garcia-Campayo J., Demarzo M., Banos R.M., Meditation and happiness: Mindfulness and self-compassion may mediate the meditation-happiness relationship (2016) PERS INDIV DIFFER, 93, 80-85.

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Cebolla A., Miragall M., Palomo P., Llorens R., Soler J., Demarzo M., Garcia-Campayo J., Banos R.M., Embodiment and Body Awareness in Meditators (2016) MINDFULNESS, 7 (6), 1297-1305.

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Chan S.W.Y., Harmer C.J., Norbury R., O'Sullivan U., Goodwin G.M., Portella M.J., Hippocampal volume in vulnerability and resilience to depression (2016) J AFFECT DISORDERS, 189, 199-202.

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Elices M., Pascual J.C., Portella M.J., Feliu-Soler A., Martin-Blanco A., Carmona C., Soler J., Impact of Mindfulness Training on Borderline Personality Disorder: A Randomized Trial (2016) MINDFULNESS, 7 (3), 584-595.

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Feliu-Soler A., Borrás X., Penarrubia-Maria M.T., Rozadilla-Sacanel A., D'Amico F., Moss-Morris R., Howard M.A., Fayed N., Soriano-Mas C., Puebla-Guedea M., Serrano-Blanco A., Perez-Aranda A., Tuccillo R., Luciano J.V., Cost-utility and biological underpinnings of Mindfulness-Based Stress Reduction (MBSR) versus a psychoeducational programme (FibroQoL) for fibromyalgia: A 12-month randomised controlled trial (EUDAIMON study) (2016) BMC COMPLEMENT ALTERN M, 16 (1).

IF: 2.2880

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IF: 3.0150

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 (2016) SCHIZOPHR RES.

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Other Publications

- ▶ Trujols J., Ballesteros J., Sola I., Portella M.J., Improving systematic reviews on psychometric properties of measurement instruments: A letter to the Editor commenting on Reilly et al.'s (2015) review of the psychometric literature on QIDS. (2015) J PSYCHIATR RES, 62, 136-137.

Genetics in Neurodegenerative Diseases

Coordinator

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Members

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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 neuromuscular disorders.
- ▶ 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 (Alberto Lleó).
- ▶ Parkinson Disease and Movement Disorders (Jaime Kulisevsky).
- ▶ Neuromuscular Diseases (Isabel Illa).

External Collaborations

National and international consortiums

- ▶ European Early Onset Dementia Consortium (EU-EOD).
- ▶ European Alzheimer Disease Initiative (EADI).
- ▶ International Genomics of Alzheimer Project (IGAP).
- ▶ 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. Coro Paisán-Ruiz, Mount Sinai School of Medicine, USA.
- ▶ 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. Philippe Amouyel, Institut Pasteur de Lille, France.
- ▶ Dr. Christine Van Broekhoven, University of Antwerp, Belgium.

Active Grants

- ▶ Jordi Clarimon Echavarría. Grup de Recerca en Demècies. 2014 SGR 235. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. 18,000 €.
- ▶ Jordi Clarimon Echavarría. Estudio del perfil de expresión de microRNA exosomal en biofluidos para la identificación de bio-

marcadores de uso diagnóstico en la demencia frontotemporal. PI15/00026. Instituto de Salud Carlos III. Duration: 2016-2018. 101,500 €.

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

Awards

- ▶ O. Dols-Icardo, R. Rojas, A. Juárez-Rufián, L. Cervera-Carles, J.L. Muñoz-Blanco, I. Illán-Gala, L. Galán, A. Lleó, J. Esteban-Pérez, A. García-Recondo, J. Clarimón. Estudio del exoma de pacientes con ELA/DFT no portadores de la expansión en el gen C9orf72. Best communication. Primer Congreso Nacional de Investigación en Esclerosis Lateral Amiotrófica (ELA). Sevilla, 20 June 2016.

Theses

- ▶ Oriol Dols Icardo. Assessing the Genetic Overlap in Amyotrophic Lateral Sclerosis and Frontotemporal Dementia. Universitat Pompeu Fabra. Date of defense: 15/12/2016.

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Scientific Production

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Munain A., Gonzalez-Quereda L., Mirabet S., Clarimon J., Gallano P., Rojas-Garcia R., Gallardo E., Illa I., Muscle imaging in muscle dystrophies produced by mutations in the EMD and LMNA genes (2016) NEUROMUSCULAR DISORD, 26 (1), 33-40.

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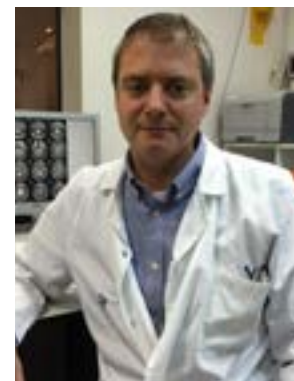
Human Neuropsychopharmacology

Coordinator

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Members

Roberto Herrero, Natalia IR
Roldán Bejarano, Alejandra FGS



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 emerging-group recognition.
- ▶ Obtain stable funding and supporting technical staff.
- ▶ Communicate activities.
- ▶ Maintain existing external cooperation agreements.
- ▶ 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

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

Active Grants

- ▶ Jorge 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 €.

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

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Alonso-Solis A., Vives-Gilabert 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 (2016) SCHIZOPHR RES.
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controlled trials (2016) EXPERT OPIN DRUG SAF, 15 (5), 591-612.
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Kuypers K.P.C., Riba J., de la Fuente Revenga M., Barker S., Theunissen E.L., Ramaekers J.G., Ayahuasca enhances creative divergent thinking while decreasing conventional convergent thinking (2016) PSYCHOPHARMACOLOGY, 233 (18), 3395-3403.
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Rabella M., Grasa E., Corripio I., Romero S., Mananas M.A., Antonijoan R.M., Munte T.F., Perez V., Riba J., Neurophysiological evidence of impaired self-monitoring in schizotypal personality disorder and its reversal by dopaminergic antagonism (2016) NEURO-IMAGE-CLIN, 11, 770-779.
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Sanches R.F., De Lima Osorio F., Santos R.G.D., Macedo L.R.H., Maia-De-Oliveira J.P., Wichert-Ana L., De Araujo D.B., Riba J., Crippa J.A.S., Hallak J.E.C., Antidepressant effects of a sin-

gle dose of ayahuasca in patients with recurrent depression a SPECT study (2016) J CLIN PSYCHOPHARM, 36 (1), 77-81.
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Other Publications

- ▶ McKenna D., Riba J. New world tryptamine hallucinogens and the neuroscience of ayahuasca. In: Current Topics in Behavioral Neurosciences. (2015) Springer. DOI: 10.1007/7854_2015_368.
- ▶ Bouso J.C., Riba J., Barbanoj M.J. Drogas de abuso y sueño In: Tratado de Sueño (2015). Editorial Médica Panamericana. Chapter 25, p. 276-281.

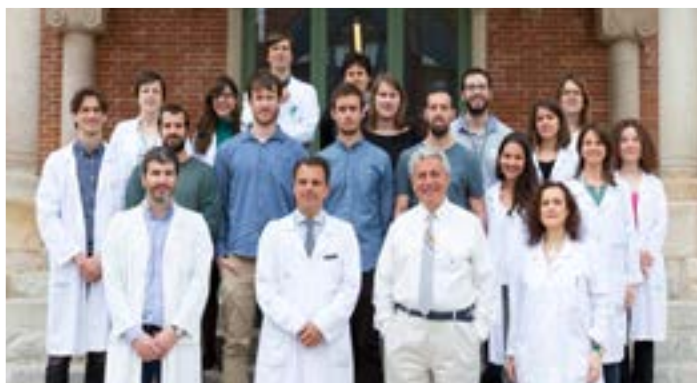
Neurobiology of Dementia

Coordinator

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Members

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Núñez Llaves, Raul IR
Pegueroles Monllau, Jordi IR
Querol Vilaseca, Marta IR
Ribosa Nogué, Roser IR
Sala Matavera, Isabel FGS
Sánchez Saudinos, María Belén IR
Vilaplana Martínez, Eduard



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.
- ▶ 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 patient 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).
- ▶ 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.
- ▶ Tiago Outeiro, University Medical Centre, Goettingen, Germany.
- ▶ Martin Ingelsson, MD, PhD, Uppsala University, Sweden.
- ▶ Tara Spire-Jones, University of Edinburgh, UK.
- ▶ Kaj Blennow, Göteborg, Sweden.
- ▶ Pieter J Visser, Amsterdam University, The Netherlands.

Theses

- ▶ Marta Marquí Sayagués. Validación en tejido cerebral humano de [F-18]-AV-1451 (T807), un nuevo marcador de la proteína tau-PHF para tomografía por emisión de positrones. Directores: Teresa Gómez-Isla, Alberto Lleó Bisa, Rafael Blesa González. Date of defense: 22 November 2016.
- ▶ Marc Suárez Calvet. Degeneración lobular frontotemporal: estudio clínico, neuropatológico y de biomarcadores. Directores: Alberto Lleó Bisa, Rafael Blesa González. Date of defense: 24 November 2016.

Active Grants

- ▶ Juan Fortea Ormaechea. Estudios multimodales de líquido cefalorraquídeo y resonancia magnética en la enfermedad de Alzheimer preclínica. PI11/02425. Instituto de Salud Carlos III. Duration: 2012-2016. 93,009 €.
- ▶ Alberto Lleó Bisa. Biomarkers for Alzheimer's disease and Parkinson's disease (BIOMARKAPD). PI11/03035. Instituto de Salud Carlos III. Duration: 2012-2016. 97,000 €.
- ▶ 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 €.
- ▶ Olivia Belbín. Contratos Miguel Servet 2013 - Tipo I. MS13/00091. Instituto de Salud Carlos III. Duration: 2014-2019. 202,500 €.
- ▶ Olivia Belbín. Search for synaptic biomarkers of Alzheimer's disease. CP13/00091. Instituto de Salud Carlos III. Duration: 2014-2017. 121,500 €.
- ▶ Alberto Lleó Bisa. Synaptic markers in preclinical Alzheimer's disease. MARATO 20142610. Fundació La Marató de TV3. Duration: 2015-2018. 159,903 €.
- ▶ 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 €.
- ▶ 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: 2015-2017. 101,500 €.
- ▶ Alberto Lleó Bisa. Marcadores sinápticos en la enfermedad de Alzheimer. PI14/01561. Instituto de Salud Carlos III. Duration: 2015-2017. 111,500 €.

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

Grants Awarded in 2016

- ▶ Alberto Lleó Bisa, Study with the tau Positron Emission Tomography radiotracer (18F)THK-5351 in patients with different Tauopathies (TAUDEM). BBVA 2016. Fundación BBVA. Duration: 2016-2019, 107,900 €.
- ▶ Juan Fortea Ormaechea, Estancia formativa University College London. IR16-E3. Fundació Privada Hospital de la Santa Creu i Sant Pau. Duration: 2016, 1,200 €.
- ▶ Olivia Belbín. 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 €.
- ▶ 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: 2016-2019. 82,400 €.

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

Awards

- ▶ Alberto Lleó. Scientific Mode Award. Sociedad Española de Neurología. Madrid 2016

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Scientific Production

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Neuroradiology

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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).

Our main focus is the search for neuroimaging biomarkers in diseases involving the

central nervous system, including neurodegenerative and neuropsychiatric conditions.

A secondary focus is the implementation of automatic procedures and software tools to improve neuroradiological practice.

Challenges

- ▶ Achieve visibility for our research group and for neuroradiology –often considered by clinicians more a technical tool rather than a discipline in itself– as a defined field of knowledge.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Pituitary Gland Disorders.
- ▶ Clinical Psychiatry.
- ▶ Digestive Diseases.
- ▶ Parkinson Disease and Movement Disorders.
- ▶ Cerebrovascular Diseases.

External Collaborations

- ▶ PIC (Information Science Port) / IF AE (Institute for High Energy Physics), Universitat Autònoma de Barcelona, Spain.
- ▶ COST-Action in ASL (European project), National Hospital for Neurology and Neurosurgery, London, UK.

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Ageing Institute

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Main Lines of Research

- ▶ Health research into ageing:
 - Healthy ageing: physical activity, nutrition and cognition.
 - Frequent health problems in older adults: falls, frailty and sarcopenia, functional loss, Alzheimer and other dementias, malnutrition and other geriatric syndromes.
 - Epidemiological studies.
- ▶ Health and social services research.
- ▶ Research into caregivers of older adults.
- ▶ Promotion of active ageing among older people.
- ▶ ICT applications to health, social services and active ageing.

Challenges

Health Research Area

- ▶ Area mainly focused on health promotion and disability prevention to improve quality of life among older people.
- ▶ Clinical and epidemiological research undertaken includes both observational and intervention studies, with the main lines of research referring to mobility, nutrition and cognition.

- Comprehensive needs assessment.
- Care quality.
- Good caregiving practices.
- Assessment of dependence.
- Home care services.
- Analysis of economic costs.

Research into ICT Applications to Health, Social Services and Active Ageing

Health and Social Services Research

- ▶ Social care and healthcare as key for the maintenance of autonomy, with a focus on the following topics:
 - Models of social care and healthcare.
 - The organization of health and social services.

- ▶ Interest in this area mainly focuses on the following topics:
 - Social appropriation of ICTs.
 - e-Health development.
- ▶ Development of new technological products to promote active ageing.

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. During 2015 there were two collaborative projects in progress:
 - Profound
 - SAAPHO

- ▶ 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

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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 bupropi-

on 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 €.

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 €.
- ▶ 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. 2013I060. Ministeri de Sanitat i Política Social. Duration: 2014-2017. 15,630 €.

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Awards

- ▶ Stop&Go: Parar de consumir i motivar para el cambio. Runner-up. Premios Enfermería en Desarrollo 2016. Madrid.

Books or Chapters with ISBN

- ▶ Arbesu, J.A., Armenteros del Olmo, L., Casquero, R., Gonçalves, F., Guardia Serecigni, J., López, A., Pascual, F., Represa, F.J., Ruz, I., Sala, C. Manual de consenso sobre Alcohol en la Atención Primaria (2016). Edita: Socidrogalcohol. ISBN: 978-84-945737-0-5.

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Other Publications

- ▶ Alcaraz, S., Trujols, J., Siñol, N., Duran-Sindreu, S., Batlle, F., Pérez 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 (2016). HEROIN ADDICT REL CL. Published ahead of print.
- ▶ Del Pino-Gutiérrez, A., Fernández-Aranda, F., Granero, R., Tárrega, S., Valdepérez, A., Agüera, Z., Håkansson, A., Sauvaget, A., Aymamí, N., Gómez-Peña, M., Moragas, L., Baño, M., Honrubia, M., Menchón, J.M., Jiménez-Murcia, S. Impact of alcohol consumption on clinical aspects of gambling disorder (2016). Int J Ment Health Nurs.
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- ▶ Pérez de los Cobos, J., Trujols, J., Siñol, N., Duran-Sindreu, S., Batlle, F. Satisfaction with methadone among heroin-dependent patients with current substance use disorders during methadone maintenance treatment. (2016). J Clin Psychopharmacol, 36(2), 157-162.
- ▶ Trujols, J., González-Saiz, F., Manresa, M. J., Alcaraz, S., Batlle, F., Duran-Sindreu, S., Pérez de los Cobos, J. Patient perception of methadone dose adequacy in methadone maintenance treatment: The role of perceived participation in dosage decisions (2016). Patient Educ Couns. Published ahead of print.
- ▶ Trujols, J., Manresa, M.J., Batlle, F., Duran-Sindreu, S., Pérez de los Cobos, J. Deep brain stimulation for addiction treatment: Further considerations on scientific and ethical issues (2016). Brain Stimul 9, 788-789.

Molecular Physiology of the Synapse

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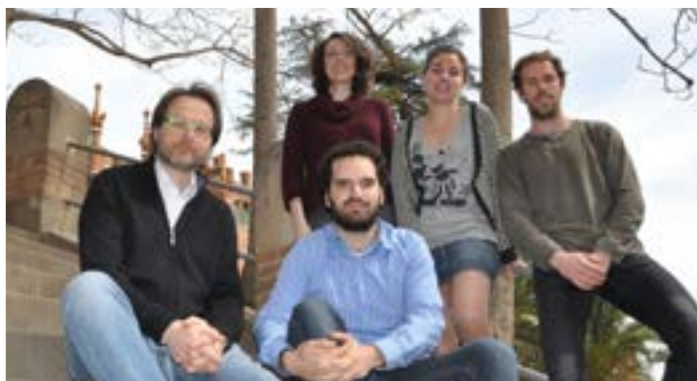
IR

Members

Gou Alsina, Gemma
Reig Viader, Rita

IR

IR



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.
- ▶ Oncogenesis and Antitumour Drugs.
- ▶ Molecular Bases of Disease.
- ▶ Molecular Physiology of Synapse. (Alejandro Bayés. AGAUR 2014. SGR 297. Duration: 2014-2016. 19,200 €).

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, Charlkes 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 Fernandez, 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 Menendez de la Prida, Instituto Cajal, Madrid.
- ▶ Dr. Angel Barco, Instituto de Neurociencias, Alicante.

Active Grants

- ▶ 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 €.
- ▶ Gemma Gou Alsina. Contratos Predoctorales para la Formación de Doctores 2013. BES-2013-063720. Ministerio de Economía y Competitividad. Duration: 2013-2017. 83,900 €.
- ▶ Alejandro Bayés Puig. Grup de senyalització sinàptica. 2014 SGR 297-1 C. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ 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 €.

- ▶ 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 €.
- ▶ Alberto Lleó. Synaptic markers in preclinical Alzheimer's disease. Fundació La Marató de TV3. 20142610. 199,878,75 €.

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

Grants Awarded in 2016

- ▶ 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: 2016-2018. 156,800 €.

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

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Scientific Production

Cortès-Saladelafont E, Tristán-Noguero A, Artuch R, Altafaj X, Bayés À, García-Cazorla A. Diseases of the synaptic vesicle: a potential new group of neurometabolic disorders affecting neurotransmission. *Seminars of Paediatric Neurology* 2016 Nov;23(4):306-320. **IF: 2.000**

Other Publications

- ▶ Bayés A, Grant SGN. Synapse Proteomes and Disease: The MASC Paradigm. In: Sala C, Verpelli C, editors. *Neuronal and Synaptic Dysfunction in Autism Spectrum Disorder and Intellectual Disability*; 2016. p. 85-99.

AREA 5

Urology and Experimental S

200 General and Digestive Surgery

202 Neurosurgery

204 Nephrology

Surgery



General and Digestive Surgery

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Martínez Sánchez,
María del Carmen FGS
Medrano Caviedes,
Rodrigo Gustavo FGS
Moral Duarte, Antonio FGS
Pérez García, José Ignacio FGS
Rodríguez Blanco, Manuel FGS
Rodríguez-Otero Luppi,
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Rofin Serra, Silvia FGS
Solé Ripoll, Pilar 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.

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.

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

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.

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

Emergency Surgery

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

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.

Breast Surgery

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

Endocrinal and Cervical Surgery

- ▶ Technical innovations in surgery.

Theses

- ▶ Verónica Alonso Jurado. Impacto clínico del abordaje laparoscópico en la proctocolectomía y colectomía subtotal. Director: Eduardo María Targarona. Date of defense: 28 January 2016.
- ▶ Carlos Rodríguez Luppi. Factores predictivos e morbilidad postoperatoria y definición de un score de complejidad de la esplenectomía laparoscópica. Directors: Eduardo María Targarona, Manel Trias. Date of defense: 21 November 2016.

Awards

- ▶ Best communication. International Congress of the European Association for Endoscopic Surgery. Amsterdam 2016.
- ▶ Best communication. International Foundation for Science. Sweden 2016

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Scientific Production

Abraldes J.G., Villanueva C., Aracil C., Turnes J., Hernandez-Guerra M., Genesca J., Rodriguez M., Castellote J., Garcia-Pagan J.C., Torres F., Calleja J.L., Albillos A., Bosch J., Addition of Simvastatin to Standard Therapy for the Prevention of Variceal Rebleeding Does Not Reduce Rebleeding but Increases Survival in Patients with Cirrhosis (2016) GASTROENTEROLOGY, 150 (5), 1160-1170e3.
IF: 18.3920

Artigas Raventos V., Rivero Cruces D., Gonzalez Lopez J., Rodriguez Blanco M., Boguna I., Aggressive angiomyxoma. A rare mesenchymal pelvic tumor Angiomixoma agresivo. Un raro tumor mesenquimal pélvico (2016) CIR ESPAN, 94 (6), 359-361.
IF: 1.2760

Cespedes M.V., Unzueta U., Alamo P., Gallardo A., Sala R., Casanova I., Pavón M.A., Mangues M.A., Trias M., Lopez-Pousa A., Villaverde A., Vazquez E., Mangues R., Cancer-specific uptake of a liganded protein nanocarrier targeting aggressive CXCR4+ colorectal cancer models (2016) NANOMED-NANOTECHNOL, 12 (7), 1987-1996.
IF: 5.7200

Garcia Del Muro X., De Alava E., Artigas V., Bague S., Brana A., Cubedo R., Cruz J., Mulet-Margalef N., Narvaez J.A., Martinez Tirado O., Valverde C., Verges R., Vinals J., Martin-Broto J., Clinical practice guidelines for

the diagnosis and treatment of patients with soft tissue sarcoma by the Spanish group for research in sarcomas (GEIS) (2016) CANCER CHEMOTH PHARM, 77 (1), 133-146.

IF: 2.7370

Huddy J.R., Markar S.R., Ni M.Z., Morino M., Targarona E.M., Zaninotto G., Hanna G.B., Laparoscopic repair of hiatus hernia: Does mesh type influence outcome? A meta-analysis and European survey study (2016) SURG ENDOSC, 30 (12), 5209-5221.
IF: 3.7470

Martin Arnau B., Turrado Rodriguez V., Tartaglia E., Bollo Rodriguez J., Targarona E.M., Trias Folch M., Impact of preoperative platelet count on perioperative outcome after laparoscopic splenectomy for idiopathic thrombocytopenic purpura Impacto del recuento plaquetario preoperatorio en la evolución perioperatoria tras la esplenectomía laparoscópica por púrpura trombocitopénica idiopática (2016) CIR ESPAN, 94 (7), 399-403.
IF: 1.2760

Parrilla P., Biondo S., Pera M., Ramirez P., Targarona E., Balibrea J.M., Frasson M., Cirugía Española increases its impact factor: Reflections on the necessary evolution of the journal Cirugia Española incrementa su factor de impacto: reflexiones sobre la necesaria evolución de la revista (2016) CIR ESPAN, 94 (9), 493-494.
IF: 1.2760

Sanchez-Santos R., Corcelles Codina R., Vilal-longa Puy R., Delgado Rivilla S., Ferrer Valls J.V., Foncillas Corvinos J., Masdevall Noguera C., Socas Macias M., Gomes P., Balague Ponz C., et al. Prognostic Factors for Morbimortality in Sleeve Gastrectomy. The Importance of the Learning Curve. A Spanish-Portuguese Multicenter Study (2016) OBES SURG, 26 (12), 2829-2836.

IF: 3.9470

Turrado-Rodriguez V., Trias Folch M., Targarona Soler E., Bollo Rodriguez J.M., Balague Ponz C., Hernandez Casanovas P., Martinez C., Trias Folch M., Are there differences between right and left colectomies when performed by laparoscopy? (2016) SURG ENDOSC, 30 (4), 1413-1418.
IF: 3.7470

Villar-del-Moral J., Capela-Costa J., Jimenez-Garcia A., Sitges-Serra A., Casanova-Rituerto D., Rocha J., Martos-Martinez J.M., de la Quintana-Basarrate A., Rosa-Santos J., Guirao-Garriga X., Bravo-de-Lifante J.M., Vidal-Perez O., Moral-Duarte A., Polonia J., On Behalf Of The Iberpara Study Group, Compliance with recommendations on surgery for primary hyperparathyroidism—from guidelines to real practice: results from an Iberian survey (2016) LANGENBECK ARCH SURG, 401 (7), 953-963.
IF: 2.2030

Other Publications

- ▶ Garcia del Muro; Alava; Artigas; Bagué; Braña; Cubedo; Cruz; Mulet; Narvaez; Martinez; Valverde; Vilals; Martin. Clinical practice guidelines for the diagnostic and treatment of patients with soft tissue sarcomas by spanish group for research in sarcomas (GEIS). CANCER CHEMOTHER AND PHARMACOL. 12/11/2015. ISSN 0344-5704.
- ▶ V. Artigas, JA. Gonzalez. Cirugía de los sarcomas retroperitoneales. Ed. Nature Publishing grup. Madrid. In: J. Martin, J. Cruz, C. Valverde, R. Cubedo. Sarcomas partes blandas. ISBN:978-84-940238-4-2.

Neurosurgery

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Rodrigo FGS
Salgado López, Laura FGS
Tresserras Ribó, Pere FGS
Vilana Gomà,
Francesc Xavier IR



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 Quintana, Ignasi Català, Carles Asencio. CLEAR III. Clot Lysis: Evaluating Accelerated Resolution of Intraventricular Hemorrhage Phase III. John Hoppinkgs Hospital. Principal researcher: Joan Martí.
- ▶ Joan Molet, Rodrigo Rodríguez. Estimulación Cerebral Profunda en el tratamiento de la esquizofrenia refractaria: Estudio piloto aleatorizado, controlado y cruzado. Fondo de Investigaciones Sanitarias

PI12/00042. Duration: 2013-2015. Principal researcher: Enric Álvarez.

- ▶ Fernández Muñoz, Carlos Asencio. Estudi MISTIE III. Minimally Invasive Surgery Plus rt-PA for Intracerebral Hemorrhage Evacuation. Principal researcher: Joan Martí.

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.

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Scientific Production

Berrocal-Izquierdo N., Munoz F., Bosch J., Molet J., Primary central nervous system lymphoma mimicking cerebellopontine angle tumour (2016) NEUROLOGIA.

IF: 2.1030

Julia A., Vinaixa M., Domenech E., Fernandez-Nebro A., Canete J.D., Ferrandiz C., Tornero J., Gisbert J.P., Nos P., Casbas A.G., Puig L., Gonzalez-Alvaro I., Pinto-Tasende J.A., et al. Urine metabolome profiling of immune-mediated inflammatory diseases (2016) BMC MED, 14 (1).

IF: 7.9010

Nephrology

Coordinator

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Members

Ars Criach, Elisabeth F. Puigvert
Ballart Roig, Judith F. Puigvert

Bardají de Quixano, Beatriz F. Puigvert

Bover Sanjuan, Jordi F. Puigvert

Bullich Vilanova, Gemma F. Puigvert

Coll Piera, Elisabet F. Puigvert

Da Silva Santos, Iara Karlla F. Puigvert

Díaz Encarnación, María Montserrat F. Puigvert

Díaz Gómez, Joan Manel F. Puigvert

Fernández de la Llama, Patricia F. Puigvert

Furlano, Mónica F. Puigvert

Guirado Perich, Lluís F. Puigvert

Guillen Gomez, Elena F. Puigvert

Lorente Grandoso, Laura F. Puigvert

Montañés Bermúdez, Rosario F. Puigvert

Ruiz del Prado, Patricia F. Puigvert

Sanmiguel Amigo, Luz F. Puigvert

Silva Torres, Irene F. Puigvert

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 treat-

Main Lines of Research

ing 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.

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 €.
- ▶ 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 €.

- ▶ Jose Ballarín. Red de Investigación Renal. RD12/0021/0033. Duration: 2013-2016. 82,000 €

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

Theses

- ▶ Gemma Bullich Vilanova. Molecular study of idiopathic nephrotic syndrome. Universitat Autònoma de Barcelona. Directors: Elisabet Ars, Roser Torra. Date of defense: 29/04/2016.

Awards

- ▶ Marco, H; Fulladosa, X; Fernández-Juárez, G; Quintana, LF; Martín, N; García-Osuna, R; Martín, D; Praga, M; Ballarín, J; Díaz-Encarnación, M. Diferencias entre vasculitis ANCA-PR3 positivas y ANCA MPO-positivas en una cohorte española. Best oral communication "ex-aequo". XXXII Reunió Anual de la Societat Catalana de Nefrologia, Castelldefels, 2-3 juny 2016.

Books or Chapters with ISBN

- ▶ Ferreras-Rozman. Medicina interna 18 edición. Capítulo 103: Malformaciones congénitas y enfermedades quísticas del riñón.

Nephrology

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

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

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Bover J., Urena P., Ruiz-Garcia C., da Silva A., Lescano P., del Carpio J., Ballarin J., Cozzolino M., Clinical and practical use of calcimimetics in dialysis patients with secondary hyperparathyroidism (2016) CLIN J AM SOC NEPHRO, 11 (1), 161-174.

IF: 4.7800

Bover J., Urena-Torres P., Lloret M.J., Ruiz-Garcia C., DaSilva I., Diaz-Encarnacion M.M., Mercado C., Mateu S., Fernandez E., Ballarin J., Integral pharmacological management of bone mineral disorders in chronic kidney disease (part I): from treatment of phosphate imbalance to control of PTH and prevention of progression of cardiovascular calcification (2016) EXPERT OPIN PHARMACO, 17 (9), 1247-1258.

IF: 3.8940

Bover J., Urena-Torres P., Lloret M.J., Ruiz C., DaSilva I., Diaz-Encarnacion M.M., Mercado C., Mateu S., Fernandez E., Ballarin J., Integral pharmacological management of bone mineral disorders in chronic kidney disease (part II): from treatment of phosphate imbalance to control of PTH and prevention of progression of cardiovascular calcification (2016) EXPERT OPIN PHARMACO, 17 (10), 1363-1373.

IF: 3.8940

Corredor Z., Rodriguez-Ribera L., Coll E., Montanes R., Diaz J.M., Ballarin J., Marcos R., Pastor S., Unfermented grape juice reduce genomic damage on patients undergoing hemodialysis (2016) FOOD CHEM TOXICOL, 92, 1-7.

IF: 3.7780

Corredor Z., Rodriguez-Ribera L., Silva I., Diaz J.M., Ballarin J., Marcos R., Coll E., Pastor S., Levels of DNA damage in peripheral blood lymphocytes of patients undergoing standard hemodialysis vs on-line hemodiafiltration: A comet assay investigation (2016) MUTAT RES-GEN TOX EN, 808, 1-7.

IF: 2.1330

Corredor Z., Rodriguez-Ribera L., Silva I., Diaz J.M., Ballarin J., Marcos R., Coll E., Pastor S.,

Levels of DNA damage in peripheral blood lymphocytes of patients undergoing standard hemodialysis vs on-line hemodiafiltration: A comet assay investigation (2016) MUTAT RES-GEN TOX EN, 808, 1-7.

IF: 2.1330

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- ▶ Bover J, Górriz JL, Ureña-Torres P, Lloret MJ, Ruiz-García C, da Silva I, Chang P, Rodríguez M, Ballarín J. Detection of cardiovascular calcifications: Is it a useful tool for nephrologists? *Nefrologia*. 2016 Nov - Dec;36(6):587-596. doi:10.1016/j.nefro.2016.05.021. Epub 2016 Aug 27. English, Spanish. PubMed PMID:2759527.
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AREA T1

Epidemiology, Public Health and Healthcare Services

212 Clinical Epidemiology and Healthcare Services

218 Evaluation of Public Health Policies and Programmes

222 Transport and Health: Injuries and Mobility

224 Transmissible Diseases

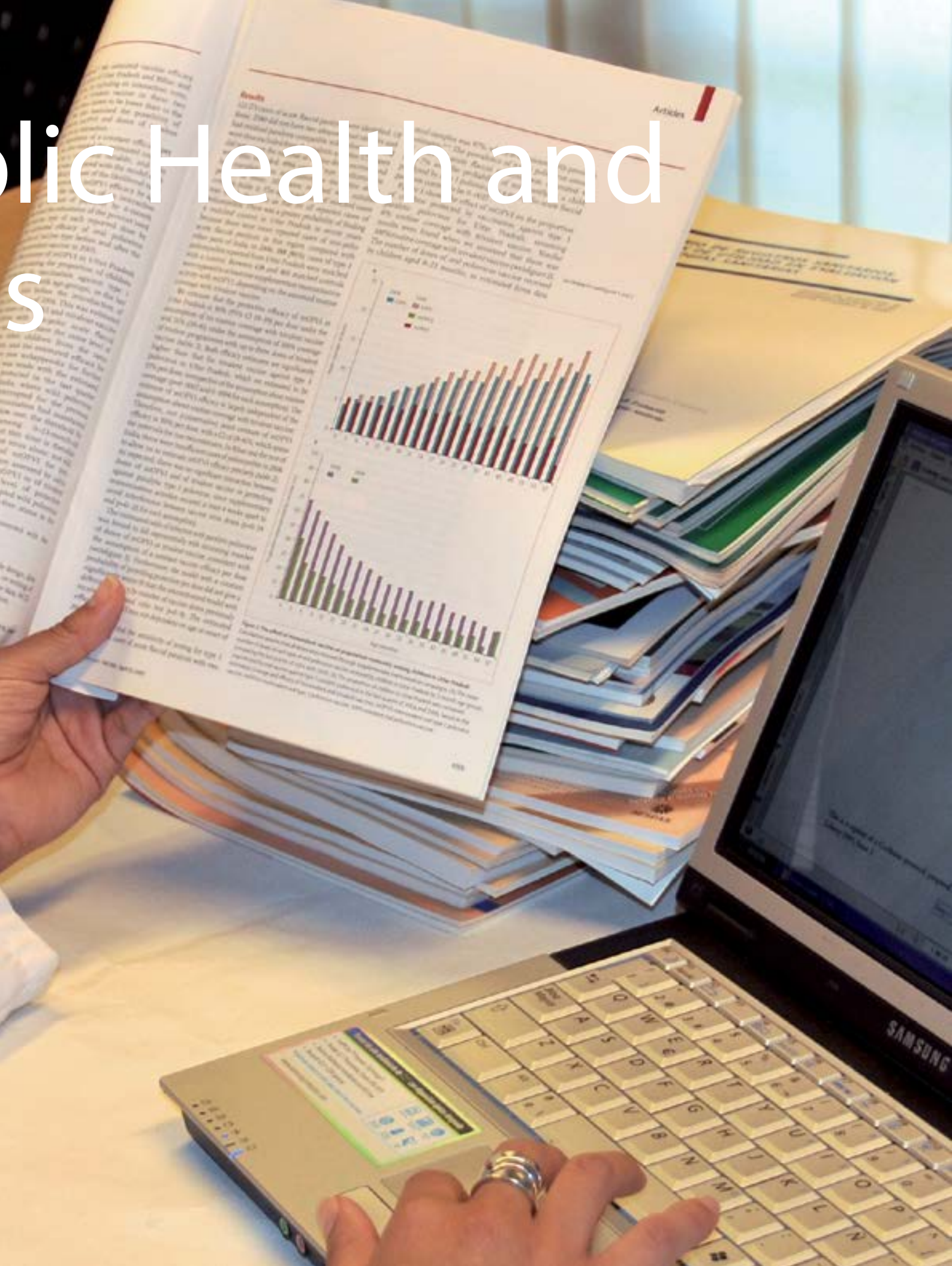
228 Health Inequalities

234 Epidemiology of Addictions

236 Primary Care Research

Public Health and

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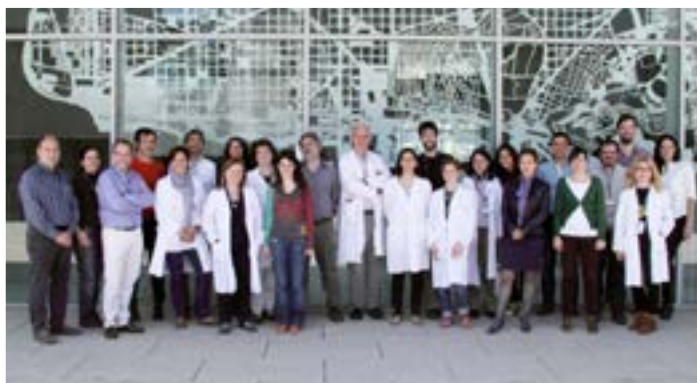
Clinical Epidemiology and Healthcare Services

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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
- ▶ Urolo

External Collaborations

- ▶ Population Health Research Institute, McMaster 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.

Collaborations

- ▶ Cochrane Collaboration.
- ▶ Joint Research Centre - European Commission.
- ▶ Applied Health Research Center - Saint Michael's Hospital (Canada).

Active Grants

- ▶ Maria Teresa Puig Reixach. Retos en salud pública: transferencia del conocimiento en obesidad, enfermedades cardiovasculares y consumo de alcohol. PI12/02257. Instituto de Salud Carlos III. Duration 2013-2016. 51,500 €.
- ▶ 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 €.
- ▶ Gerard Urrutia Cuchi. Cohorte prospectiva internacional de evaluación de los eventos vasculares en pacientes sometidos a cirugía cardíaca (estudio CardioVISION). PI13/00502. Instituto de Salud Carlos III. Duration 2014-2016. 20,600 €.
- ▶ 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 €.
- ▶ Pablo Ignacio Alonso Coello. Retos metodológicos en la elaboración de guías de práctica clínica (GPC) del Sistema Nacional de Salud. PI14/02006. Instituto de Salud Carlos III. Duration 2015-2017. 36,500 €.
- ▶ Xavier Bonfill Cosp. Mapeo de la evidencia para mejorar las decisiones terapéuticas en pacientes con sarcomas de partes blandas. JOSE M^a BUESA 2014. Grup Espanyol d'Investigació en Sarcomes. Duration 2015-2017. 14,000 €.
- ▶ Pablo Ignacio Alonso Coello. Contratos Miguel Servet II 2015. MSII15/00034. Instituto de Salud Carlos III. Duration 2016-2019. 101,250 €.
- ▶ 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 €.
- ▶ Maria Jose Martinez Zapata. Contratos Miguel Servet I 2015. MS15/00116. Instituto de Salud Carlos III. Duration 2016-2021. 202,500 €.
- ▶ Maria Jose Martinez 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 €.
- ▶ 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 Martinez Garcia. Contratos Juan Rodés 2015. JR15/00004. Instituto de Salud Carlos III. Duration 2016-2018. 135,000 €.
- ▶ 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 €.
- ▶ Laura Martinez Garcia. 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 €.

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

Theses

- ▶ Fernando Tomás Lanús Zanetti. Obesidad y factores de riesgo de enfermedad coronaria en Chile. Director: Maria Teresa Puig. Date of defense: 5/09/2016
- ▶ Gloria Sanclemente Mesa. Evidències en Dermatologia: Assaigs Clínics, Revisions Sistemàtiques i Guies de Pràctica Clínica. Directors: Xavier Bonfill, Pablo Alonso. Date of defense: 18/07/2016
- ▶ Carola Orrego Villagrán. Projectes col·laboratius per a la millora de la seguretat: avaluació de la seva aplicació en la prevenció de caigudes i la reducció de la infecció de l'espai quirúrgic en cirurgia col·rectal. Director: Rosa Suñol. Date of defense: 9/02/2016
- ▶ M. Jesús Quintana Ruiz. Análisis de la variabilidad y de la adecuación clínica del tratamiento quirúrgico del aneurisma de aorta abdominal. Director: Xavier Bonfill. Date of defense: 3/02/2016
- ▶ Carmen Rosa Gallardo Quesada. Evidencias científicas sobre el control de la tuberculosis. Directors: Xavier Bonfill, Jesús M. Aranz. Date of defense: 2/02/2016
- ▶ Adoración Navarro Torné. European surveillance of invasive pneumococcal disease. epidemiology, serotype distribution and antimicrobial resistance patterns. Directors: Josep María Jansà, Rosa Bartolomé Comas. Date of defense: 1/02/2016. Mention european doctor
- ▶ Nùria Ibàñez Martínez. Validación del cuestionario de evaluación de las relaciones familiares básicas (cerfb). Directors: Ignasi Gich, Anna Vilaregut. Date of defense: 13/01/2016

Clinical Epidemiology and Healthcare Services

*TIF: 397.55 **MIF: 5.8464

Scientific Production

Akl E.A., Kahale L.A., Ebrahim S., Alonso-Coello P., Schunemann H.J., Guyatt G.H., Three challenges described for identifying participants with missing data in trials reports, and potential solutions suggested to systematic reviewers. (2016) *J CLIN EPIDEMIOL*, 76, 147-154.

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Alonso-Coello P., Carrasco-Labra A., Brignardello-Petersen R., Neumann I., Akl E.A., Vernooij R.W.M., Johnston B.C., Sun X., Briel M., Busse J.W., Ebrahim S., Granados C.E., Iorio A., Irfan A., Martinez Garcia L., Mustafa R.A., Ramirez-Morera A., Selva A., Sola I., Sanabria A.J., Tikkinen K.A.O., Vandvik P.O., Zazueta O.E., Zhang Y., Zhou Q., Schunemann H., Guyatt G.H., Systematic reviews experience major limitations in reporting absolute effects. (2016) *J CLIN EPIDEMIOL*, 72, 16-26.

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Alonso-Coello P., Schunemann H.J., Moberg J., Brignardello-Petersen R., Akl E.A., Davoli M., Treweek S., Mustafa R.A., Rada G., Rosenbaum S., Morelli A., Guyatt G.H., Oxman A.D., Alonso P., Schunemann H.J., Guyatt G.H., Flottorp S., Gartlehner G., Glenton C., Meerpohl J., Parmelli E., Stanev R., Vandvik P., Verstijnen I., Von Elm Bjorn E., GRADE Evidence to Decision (EtD) frameworks: A systematic and transparent approach to making well informed healthcare choices. 1: Introduction. (2016) *BMJ-BRIT MED J*, 353.

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Bonfill Cosp X., Arevalo-Rodriguez I., Ciapponi A., Roque i Figuls M., Munoz L., Bonfill Cosp X., Posture and fluids for preventing post-dural puncture headache. (2016) *COCHRANE DB SYST REV*, 2016 (3).

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Bonfill Cosp X., Fuentes R., Osorio D., Exposito Hernandez J., Simancas-Racines D., Bonfill Cosp X., Surgery versus radiosurgery for people with single or solitary brain metastases. (2016) *COCHRANE DB SYST REV*, 2016 (2).

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Cabanas-Valdes R., Urrutia G., Bagur-Calafat C., Caballero-Gomez F.M., German-Romero A., Girabent-Farres M., Validation of the Spanish version of the Trunk Impairment Scale Version 2.0 (TIS 2.0) to assess dynamic sitting balance and coordination in post-stroke adult patients. (2016) *TOP STROKE REHABIL*, 23 (4), 225-232.

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- ▶ Almirall J., Serra-Prat M., Bolibar I., Risk Factors for Community-acquired Pneumonia in Adults: A Review. (2016) *Clinical Pulmonary Medicine*, 23 (3), 99-104.
- ▶ Salva A., Rojano X., Coll-Planas L., Domenech S., Roque i Figuls M., Randomized clinical trial of a fall-prevention strategy for institutionalized elderly based on the Mini Falls Assessment Instrument Ensayo clínico aleatorizado de una estrategia de prevención de caídas en ancianos institucionalizados basada en el Mini Falls Assessment Instrument. (2016) *Revista Espanola de Geriatria y Gerontologia*, 51 (1), 18-24.
- ▶ Sanclemente G., Pardo H., Sanchez S., Bonfill X., Analysis of the Quality of Clinical Trials Published in Spanish-Language Dermatology Journals between 1997 and 2012 Análisis de la calidad de los ensayos clínicos publicados en revistas dermatológicas publicadas en español entre 1997 y 2012. (2016) *Actas Dermo-Sifilograficas*, 107 (1), 44-54.
- ▶ Tauron M., Mirabet S., Munoz-Guijosa C., Rosello E., Montiel J., Ginel A.J., Casellas S., Subirana M.T., Roig E., Padro J.M., Cardiac transplantation in adult patients with congenital heart disease. (2016) *Cirugia Cardiovascular*, .
- ▶ Trujols J., Ballesteros J., Sola I., Portella M.J., Improving systematic reviews on psychometric properties of measurement instruments: A letter to the Editor commenting on Reilly et al.'s (2015) review of the psychometric literature on QIDS. (2015) *J PSYCHIATR RES*, 62, 136-137.
- ▶ Urrutia-Cuchi G., Gonzalez-Roman L., Bagur-Calafat C., Urrutia-Cuchi G., Garrido-Pedrosa J., Interventions based on exercise and physical environment for preventing falls in cognitively impaired older people living in long-term care facilities: A systematic review and meta-analysis Intervenciones basadas en el ejercicio y el entorno para la prevención de caídas en personas con deterioro cognitivo que viven en centros de cuidado: Revisión sistemática y metaanálisis. (2016) *Revista Espanola de Geriatria y Gerontologia*, 51 (2), 96-111.

Evaluation of Public Health Policies and Programmes

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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.

Awards

- ▶ M. José López. Exposició passiva al fum del tabac en zones interiors i exteriors de bars i restaurants. Second best oral communication. VI jornada de la SCATT (Societat Catalana d'Atenció i Tractament del consum de Tabac).
- ▶ Xavier Continente, Francesca Sánchez, Carles Ariza. Salut autopercebuda, salut

mental i policonsum de tabac i cànnabis en adolescents. Second prize for best communication. VI Jornada de la Societat Catalana d'Atenció i Tractament del consum de Tabac (SCATT) 2016.

- ▶ Placa Josep Trueta to the Laboratory of the ASPB.

Theses

- ▶ Xavier Continente. Sobrepeso, obesidad y conductas relacionadas con la salud en adolescentes de Barcelona. Universitat Pompeu Fabra. Director: M. José López. Date of defense: 18/10/2016.

Grants Awarded in 2016

- ▶ 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 01/01/2017-31/12/2017. €112.530.

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

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).

External Collaborations

- ▶ CIBER-Epidemiology and Public Health (Group 18: Evaluation of public health policies and programmes).
- ▶ 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.

- ▶ 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 Sardenya (Barcelona).
- ▶ Catalan Institute of Oncology (ICO).
- ▶ 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: 2014-2017. 64,470 €.
- ▶ 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. 2015I070. Ministerio de Sanidad, Servicios Sociales e Igualdad. Duration: 2016-2018. 61,773 €.

- ▶ 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: 01/11/2015-31/10/2019. €426.940,97.

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

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Arechavala T., Contiente X., Perez-Gimenez A., Bartoll X., Sanchez-Martinez F., Lopez M.J., Food consumption frequency and excess body weight in adolescents in the context of financial crisis in Barcelona (Spain) Frecuencias de consumo de alimentos y exceso de peso en adolescentes en un contexto de crisis económica en Barcelona (España). (2016) GAC SANIT, 30 (6), 457-463.

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Diez E., Avino D., Paredes-Carbonell J.J., Segura J., Suarez O., Gerez M.D., Perez A., Daban F., Camprubi L., A good investment: promoting health in cities and neighbourhoods Una buena inversión: la promoción de la salud en las ciudades y en los barrios. (2016) GAC SANIT, 30, 74-80.

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IF: 1.7680

Villalbi J.R., Ventayol I., Climate change and health in the urban context: The experience of Barcelona. (2016) INT J HEALTH SERV, 46 (3), 389-405.

IF: 1.1350

Other Publications

▶ Catala-Lopez F., Ridao M., Alonso-Arroyo A., Garcia-Altes A., Cameron C., Gonzalez-Bermejo D., Aleixandre-Benavent R., Bernal-Delgado E., Peiro S., Tabares-Seisdedos R., Hutton B., The quality of reporting methods and results of cost-effectiveness analyses in Spain: A methodological systematic review. (2016) Systematic Reviews, 5 (1).

▶ Villalbi J.R., Impact of the law on health measures against smoking in 2015 Impacto en 2015 de la ley de medidas sanitarias contra el tabaquismo. (2016) FMC Formacion Medica Continuada en Atencion Primaria, 23 (1), 1-3.

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Transport and Health: Injuries and Mobility

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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).

Research Projects in the Planning and Design Phase

- ▶ 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.
- ▶ Study motorized and non-motorized mobility and its impact on health.

Collaborations	<p>Collaborations with other IIB Sant Pau Groups</p> <ul style="list-style-type: none"> ▶ Health Inequalities (PI: Carme Borrell). 	<p>European Commission under the Horizons 2020, the EU Framework Programme for Research and Innovation, in the domain of Road Safety.</p>
	<p>External Collaborations</p> <ul style="list-style-type: none"> ▶ 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 (Consortio 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). ▶ Partners of the SafetyCube (Safety CaUsation, Benefits and Efficiency) (H2020 N.633485), a research project funded by the Eu- 	<ul style="list-style-type: none"> ▶ Safety indicators for cities IRTAD Cities (Joint Transport Research Centre of the OECD and the International Transport Forum (JTRC)). ▶ The IP is member of the editorial committee of the Journal of Transport and Health (Elsevier). ▶ The IP has been appointed a member of the Scientific Committee of the Institut Français des Sciences et Technologies des Transports, l'Amenagement et de Réseaux (IFSTAR) since 2016. ▶ Partners of the PULSE (Participatory Urban Living for Sustainable Environments) (H2020 N. 727816), a research project funded by the European Commission under the Horizons 2020, the EU Framework Programme for Research and Innovation.

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Scientific Production	<p>Macias F, Malmusi D, Olabarria M., Borrell C., Cardiometabolic risk inequalities in Colombia. (2016) INT J CARDIOL, 202, 156-158. IF: 6.1890</p>	<p>Segura A., Borrell C., Garcia-Armesto S., Bartoll X., Novoa A.M., Health reports as the centrepiece of public health services Los informes de salud como eje de los servicios de salud pública. (2016) GAC SANIT, 30, 31-37. IF: 1.7680</p>

Other Publications	<ul style="list-style-type: none"> ▶ Novoa AM, Amat J, Malmusi D, Díaz F, Darnell M, Trilla C, Bosch J, Borrell C. Changes in Health Following Housing Improvement in a Vulnerable Population in Spain: A Follow-up Study. Int J Health Serv. 2016 Oct 31. ▶ Pére K. Reporting road traffic serious injuries in Europe. Guidelines, 12th World Conference on Injury Prevention and Safety Promotion, Tampere, Finlandia, 17/09/2016, The National Institut for Health and Welfare (Finland). (communication) ▶ Novoa AM, Pérez G, Rodríguez-Sanz M, Borrell C, Calvo MJ, Cortés I, Diez I, Espelt A, Olalla PG, Gómez J, Pallarés M. Urban HEART Barcelona: proceso de revisión y mejora de una herramienta para promover la equidad en salud urbana. Gac Sanit.2016;30 Supl:207. (communication) 	<ul style="list-style-type: none"> ▶ Novoa AM, Pérez G, Rodríguez-Sanz M, Pasarín M, Artazcoz L, Borrell C. Urban HEART Barcelona: aplicación de una herramienta para promover la equidad en salud urbana. Gac Sanit.2016;30 Supl:208. (communication) ▶ Santamariña-Rubio E, Pérez K. ¿Son efectivas las Zonas Avanzadas para Motos? XXXIV Reunión Científica de la Sociedad Española de Epidemiología. XI Congreso da Associação Portuguesa de Epidemiologia. Sevilla 2016. (communication)
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Transmissible Diseases

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Main Lines of Research

Application of New Technologies to Tuberculosis Control

- ▶ International diffusion of the new technologies. Google Analytics offers a highly effective system for analysing website visits that enables us to profile visitors (2007, 13,429 visitors, 21% from Latin America).
- ▶ Production of scientific knowledge of relevance on the control, diagnosis, treatment and prevention of tuberculosis (key role in Spain and South America).

Clinical Trials for Tuberculosis Prevention and Treatment

- ▶ Our centre, which is the only such centre in Europe, is part of a network of international centres (in Canada, Brazil, South Africa and Uganda) associated with the Tuberculosis Trials Consortium of the CDCs, promoting international involvement in laying the therapeutic and strategic bases for the treatment of tuberculosis and tubercular infection. Preliminary results have recently been presented at the ICAAC and other important international conferences e.g., the American Thoracic Society (the article with definitive study data is pending publication). A major research line aims to fix the bases for shortening treatment times for tubercular infection and, by extension, ensure compliance and control over the disease.

Community Health Worker's and Notifiable Disease Control

- ▶ The experiment regarding the community health worker's role in the control of notifiable diseases has been presented at tuberculosis and primary care conferences and workshops and in journals (Emerging Infectious Diseases; Ethnicity and Health). Results of a comparative study have recently been presented as a thesis in fulfilment of the master in public health of Pompeu Fabra University and the Autonomous University of Barcelona (an article is undergoing final review before publication).
- ▶ The inclusion of community health workers in tuberculosis programme teams has led to the creation of new tuberculosis consensus protocols. Institute of Health studies are under development with sponsorship from the authorities and we are participating as instructors and students in the first intercultural mediation course in the healthcare arena. The concept of the community health worker has been included in the framework Tuberculosis Prevention and Control Plan for Spain. The short- to medium-term objective is for community health workers to continue working with us and for these professionals to be included in other public health areas.

Challenges

- ▶ Prevent sexually transmitted infections and other transmissible diseases.
- ▶ Evaluate HIV screening programmes in gay saunas.
- ▶ Improve detection and research into causes of hepatitis C.
- ▶ Improve detection and control measures of outbreaks.

Collaborations

External Collaborations

- ▶ CDC
- ▶ CASCADE
- ▶ GEMES
- ▶ SANCO
- ▶ COHERE

Awards

- ▶ Jacques C., García de Olalla P., Diez E., Martins, Cayla J.A. ¿Cómo se explican las prácticas sexuales de riesgo? Estudio cualitativo en un grupo de hombres que tienen sexo con hombres. XVII Congreso Nacional sobre el Sida e Infecciones de Transmisión Sexual. Best oral communication. San Sebastián, 6-8 May 2015.

Active Grants

- ▶ Joan Arturo Caylà Buqueras. Cribado de las enfermedades transmisibles en población inmigrante de un barrio con bajo nivel socio-económico: comparación de dos estrategias. PI12/02573. Instituto de Salud Carlos III. Duration: 2013-2017. 43,500 €.

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

*TIF: 63.728 **MIF: 2.8967

Scientific Production

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Cayla J.A., Dominguez A., Rodriguez Valin E., de Ory F., Vazquez A., Fortuny C., Zika virus infection: a new public health emergency with great media impact La infección por virus Zika: una nueva emergencia de salud pública con gran impacto mediático (2016) GAC SANIT, 30 (6), 468-471.

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siva del tratamiento estándar de la tuberculosis (2016) ARCH BRONCONEUMOL, 52 (5), 262-268.

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Jimenez-Fuentes M., Rodrigo T., Altet M.N., Jimenez-Ruiz C.A., Casals M., Penas A., Mir I., Solano Reina S., Riesco-Miranda J.A., Cayla J.A., Factors associated with smoking among tuberculosis patients in Spain (2016) BMC INFECT DIS, 16 (1).

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Nebot L., Diez E., Martin S., Estruga L., Villalbi J.R., Perez G., Carrasco M.G., Lopez M.J., Effects of a contraceptive counselling intervention in adolescents from deprived neighbourhoods with a high proportion of immigrants Efectos de una intervención de consejo anticonceptivo en adolescentes de barrios desfavorecidos con alta proporción de inmigrantes (2016) GAC SANIT, 30 (1), 43-46.

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Solano R., Crespo I., Fernandez M.I., Valero C., Alvarez M.I., Godoy P., Cayla J.A., Dominguez A., Underdetection and underreporting of pertussis in children attended in primary health care centers: Do surveillance systems require improvement? (2016) AM J INFECT CONTROL, 44 (11), e251-e256.

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Solano R., Masa-Calles J., Garib Z., Grullon P., Santiago S.L., Brache A., Dominguez A., Cayla J.A., Epidemiology of pertussis in two Ibero-American countries with different vaccination policies: Lessons derived from different surveillance systems (2016) BMC PUBLIC HEALTH, 16 (1).

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Torner N., Godoy P., Soldevila N., Toledo D., Rius C., Dominguez A., Primary health care professionals attitudes towards influenza immunization in Catalonia (2016) ATEN PRIM,

48 (3), 192-199.

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Torner N., Martinez A., Broner S., Moreno A., Camps N., Dominguez A., Epidemiology of acute gastroenteritis outbreaks caused by human calicivirus (Norovirus and Sapovirus) in Catalonia: A two year prospective study, 2010-2011 (2016) PLOS ONE, 11 (4).

IF: 2.8060

Villalbi J.R., Rodriguez-Campos M., Orcau A., Espachs M.T., Salamero M., Maldonado J., Cayla J.A., Hospital detention in tuberculosis control La hospitalización terapéutica obligatoria en el control de la tuberculosis (2016) GAC SANIT, 30 (2), 144-147.

IF: 1.7680

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).

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 Rossello 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 (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 (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.
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- ▶ Ethniko Kai Kapodistriako Panepistimio Athinon (UoA), established in 6 Christou Lada Str, Athina 10561, Greece.
- ▶ Consorzio per il Sistema Informativo (CSI Piemonte) (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, Brussel 1050, Belgium.
- ▶ Universitat Pompeu Fabra. Departament de Polítiques 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. Medellin. Colombia.

Active Grants

- ▶ Gloria Pérez Albarracín. El efecto de la crisis económica en la salud sexual y reproductiva y en las desigualdades sociales y económicas en España y sus Comunidades Autónomas. PI13/02292. Instituto de Salud Carlos III. Duration: 2014-2016. 26,875 €.
- ▶ Carme Borrell Thió. Evaluación de efectos en salud del programa "Trellall als Barris". RecerCaixa. Duration: 2015-2017. €78,359.69.
- ▶ Carme Borrell Thió. EuroHealthy: Shaping European Policies to Promote Health Equity. European Union, Horizon 2020. Duration: 2014-2017. €268,777.
- ▶ Gloria Pérez Albarracín. El efecto de la crisis económica en la salud sexual y reproductiva y en las desigualdades sociales y económicas en España y sus Comunidades Autónomas. Instituto de Salud Carlos III. Duration: 2014-2016. €32,518.75.
- ▶ Carme Borrell Thió. Efectos de la crisis en la salud de la población y sus determinantes en España. PI13/00897. Instituto de Salud Carlos III. Duration: 2014-2016. €58,564.

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

Health Inequalities

Grants Awarded in 2016

- ▶ Carme Borrell Thió. Participatory Urban Living for Sustainable Environments (PULSE). Duration: 2016-2019. €309,625.
- ▶ Maica Rodríguez-Sanz. Evolución de las desigualdades socioeconómicas y medioambientales en la distribución geográfica de la mortalidad en Barcelona (1996-2015): MEDEA3. Instituto de Salud Carlos III. Duration: 2016-2019. €32,670.

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

Other Publications

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Awards

- ▶ Josep Trueta medal to sanitary merit. Carme Borrell. 2016.
- ▶ V Award Best Thesis in Epidemiology and Public Health 2015. Sociedad Española de Epidemiología.
- ▶ I Award for Best Communications Presented by First-Time Attendees to the Annual Meeting of the Sociedad Española de Epidemiología.

Theses

- ▶ Felipe Macías Acuña. Inequidades Socioeconómicas en los Factores de Riesgo de las Enfermedades Crónicas No Transmisibles (ECNT) en Colombia. Universitat Pompeu Fabra Directors: Carme Borrell. Date of defense: 29/01/2016.
- ▶ M Isabel Pasarín Rua. Avaluació de l'Atenció Primària: Aproximació mitjançant el Primary Care Assessment Tools (PCAT), Universitat Autònoma de Barcelona. Director: Carme Borrell. Date of defense: 12/01/2016.
- ▶ Pamela Merino Salazar. Trabajo y salud en América Latina y el Caribe a través de las encuestas de condiciones de trabajo, empleo y salud. Universitat Pompeu Fabra. Directors: Lucía Artazcoz, Fernando G. Benavides. Date of defense: 11/10/2016.
- ▶ María López. Empleo informal y salud en Centroamérica. Una aproximación desde las desigualdades de género, Universidad Pompeu Fabra. Directors: Fernando G. Benavides, Lucía Artazcoz. Date of defense: 29/01/2016.
- ▶ Noelia Vázquez. Evaluación de la efectividad de un programa comunitario de parentalidad positiva. Perspectiva desde los determinantes sociales de la salud, Universidad de Barcelona. Director: María Cruz Molina, Lucía Artazcoz. Date of defense: 15/01/2016.

Transfer Products

- The study and research of social inequalities in health has been useful to implement reports and policies in Barcelona in 2016:
- ▶ Report of "la Salut a Barcelona 2015". Available at: http://www.aspb.cat/wp-content/uploads/2016/11/PPT_INF_7nov_Salut_2015_aspb_7nov.pdf
- ▶ Mental health Plan. Available at: <http://eldigital.barcelona.cat/wp-content/uploads/2016/07/Pla-Salut-Mental-1.pdf>
- ▶ Measure to push community health. Available at: <http://www.aspb.cat/wp-content/uploads/2016/12/mesura-impuls-salut-comunitaria-2016.pdf>

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Health Inequalities

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Epidemiology of Addictions

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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.

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Primary Care Research

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Main Lines of Research

- ▶ Cardiovascular prevention in primary care settings.
- ▶ Health promotion in primary care settings.
- ▶ Ageing.
- ▶ Hypertension.
- ▶ Diabetes.
- ▶ Paediatric immunization.

Challenges

- ▶ Enlarge the research team by linking up with other primary care centres associated with the ACEBA Family Medicine Teaching Unit.
- ▶ Cooperate with other research teams in IIB Sant Pau.
- ▶ Cooperate with other European institutions in implementing projects on risk prevention and health promotion in primary care settings.
- ▶ Encourage research into medical ethics in family medicine training.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Clinical Epidemiology and Health Care Services.
- ▶ Evaluation of Public Health Policies and Programmes.
- ▶ Ageing Institute.

External Collaborations

- ▶ FATE project (fall detection in the elderly): Universitat Politècnica de Catalunya, Sistema d'Emergències Mèdiques, TicSalut. Project number: 297178, European Commission, ICT-PSP. Duration: 2011-2015.
- ▶ Carles Brotos. Calibratge i discriminació del model SCORE (Systematic Coronary Risk Evaluation) per a països de baix risc i de la nova equació de risc de la US American College of Cardiology (ACC)/American Heart Association. Fundació La Marató de TV3.

Active Grants

- ▶ Carles Brotos 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 €.
- ▶ Carles Brotos 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 Brotos Cuixart. Avaluació del risc cardiovascular en la gent gran. Premi Mutuam Conviure 2015. Fundació Mutuam Conviure. Duration: 2015-2017. 6,000 €.

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

Awards

- ▶ Carles Brotons Cuixart, Irene Moral Peláez, Lluís Cuixart Costa, Mireia Puig Palma. Avaluació del risc cardiovascular en la gent gran. Premis de Recerca de la Fundació Mutuam Conviure 2015.
- ▶ Albert Casasa Plana. Award for professional excellence. Col·legi Oficial de Metges de Barcelona.
- ▶ 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: the VALID study. Award MARATÓ.

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IF: 4.2390

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Primary Care Research

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Scientific Production

st-segment elevation: Task force for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation of the European Society of Cardiology (ESC) (2016) *EUR HEART J*, 37 (3), 267-315.

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Royo-Bordonada M.A., Lobos Bejarano J.M., Villar Alvarez F., Sans S., Perez A., Pedro-Botet J., Moreno Carriles R.M., Maiques A., Lizcano A., Lizarbe V., Gil Nunez A., Fornes Ubeda F., Elosua R., de Santiago Nocito A., de Pablo Zarzosa C., de Alvaro Moreno F., Cortes O., Cordero A., Camafort Babkowski M., Brotons

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IF: 2.1030

AREA T2

Molecular, Genomic Kinetic-Dynamic Bases and their Treatment

242 Genomics of Complex Diseases

246 Molecular Bases of Disease

248 Pharmacokinetic/Pharmacodynamic Modelling and Simulation

250 Generation of Advanced Therapy Medicines

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Genomics of Complex Diseases

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Main Lines of Research

Complex Diseases and Epigenomics

Chronic Obstructive Disease: GEPOC Project

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

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.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Collaborations</p>	<p>Collaborations with other IIB Sant Pau Groups</p> <ul style="list-style-type: none"> ▶ Thrombosis and Haemostasis, Dr. JC. Souto: GAIT, MIRTO, RETROVE Projects. ▶ Internal Medicine, Dr. J. Casademont: GAO Project. ▶ Angiology, Vascular Biology and Inflammation, Dr. JR. Escudero, Dra. M. Camacho: TAGA, GAIT Projects. ▶ Neurology, Dr. J. Martí: MIRTO Project. ▶ Medical Oncology, Dr. Barnadas: MIRTO Project. ▶ Clinical Hematology, Dr. J. Sierra: MIRTO Project. ▶ Neumology, Dr. O. Sibila : SUMMIT, SHERPA Projects <p>External Collaborations</p> <ul style="list-style-type: none"> ▶ Clinical Oncology Department, Hospital Gregorio Marañón, Madrid, Dr. A. Muñoz ONOCOTROMB 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. Dermizakis: GAIT Project. ▶ Department of Cardiology, Karolinska Institut, Sweden, Dra. M. Sabater: GAIT Project. ▶ INSERN UMRS 937, Université Pierre et Marie Curie, Paris, Dr. DA. Tregouet: GAIT, VEREMA Projects. ▶ Haematology Department, Karolinska Hospital, Sweden, Dr. J. Odeberg: Project VEREMA. ▶ Institute of Biological Psychiatry, Sankt Hans Hospital, Roskilde, Denmark, Dr. A. Buil: Bioinformatics of Complex diseases, GAIT Project.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Active Grants</p>	<ul style="list-style-type: none"> ▶ José Manuel Soria Fernández. Identificación de Mecanismos de Regulación de la Expresión Génica (microRNAs) en la Enfermedad Tromboembólica Venosa. PI14/00582. Instituto de Salud Carlos III. Duration: 2015-2017. 111,500 €. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Grants Awarded in 2016</p>	<ul style="list-style-type: none"> ▶ José Manuel Soria Fernández. Modeling the Individual Risk of Thrombosis in Oncology (MIRTO). ESC 2015. European Society of Cardiology. Duration: 2016-2017. 268,253 €. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Awards</p>	<ul style="list-style-type: none"> ▶ Un nuevo score de riesgo genético para predecir eventos de tromboembolismo venoso (TEV) en pacientes con cáncer y tratamiento de quimioterapia (QT). Best communication. Congreso de la Sociedad Española de Oncología Médica (SEOM 2016).
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Theses</p>	<ul style="list-style-type: none"> ▶ Andrés Muñoz Martín, Análisis del score de Khorana y predictores genómicos de riesgo de enfermedad tromboembólica venosa en pacientes tratados con quimioterapia en un medio extrahospitalario. Universidad Complutense de Madrid. Director: José Manuel Soria. Date of defense: 13/01/2016.

Genomics of Complex Diseases

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Scientific Production

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IF: 4.1400

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Hernandez-de Sosa N., Athanasiadis G., Malouf J., Laiz A., Marin A., Herrera S., Farrerons J., Soria J.M., Casademont J., Genetic contribution of femoral neck bone geometry to the risk of developing osteoporosis: A family-based study (2016) *PLOS ONE*, 11 (5).

IF: 2.8060

Hinds D.A., Buil A., Ziemek D., Martinez-Perez Angel, Malik R., Folkersen L., Germain M., Malarstig Anders, Brown A., Soria J.M., Dichgans M., Bing N., Franco-Cereceda Anders, Souto J.C., Dermitzakis E.T., Hamsten A., Worrall B.B., Tung J.Y., Sabater-Lleal M., Genome-wide association analysis of self-reported events in 6135 individuals and 252 827 controls identifies 8 loci associated with thrombosis (2016) *HUM MOL GENET*, 25 (9), 1867-1874.

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Martin-Fernandez L., Ziyatdinov A., Carrasco M., Millon J.A., Martinez-Perez A., Vilalta N., Brunel H., Font M., Hamsten A., Souto J.C., Soria J.M., Genetic determinants of thrombin generation and their relation to venous thrombosis: Results from the GAIT-2 project (2016) *PLOS ONE*, 11 (1).

IF: 2.8060

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Pena G.G., Martinez-Perez A., Dutra M.S., Gazzinelli A., Correa-Oliveira R., Soria J.M.,

Velasquez-Melendez G., Genetic determinants of cardiometabolic risk factors in rural families in Brazil (2016) *AM J HUM BIOL*, 28 (5), 619-626.

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Remacha A.F., Vilalta N., Sarda M.P., Millon J., Pujol-Moix N., Ziyatdinov A., Fontcuberta J., Nomdedeu J., Soria J.M., Souto J.C., Erythrocyte-related phenotypes and genetic susceptibility to thrombosis (2016) *BLOOD CELL MOL DIS*, 59, 44-48.

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Molecular Bases of Disease

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Nadal Rovira, Marta

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Main Lines of Research

Thrombosis and Haemostasis

- ▶ Structural and functional investigations of blood coagulation factors, with emphasis on thrombin generation by the prothrombinase complex and on thrombin interactions with both physiological substrates (factor V, factor VIII and protease-activated receptors) and with exogenous inhibitors from haematophagous animals (e.g. anophelin from *Anopheles* mosquitoes).

Lipid Metabolism and Dyslipidemias

- ▶ Structural and functional analysis of mutant apoA-V proteins identified in individuals with hypertriglyceridaemia.

Neurodegenerative Diseases

- ▶ Analysis of mutations that affect the SMN genes, whose deficiency results in spinal muscular atrophy.
- ▶ Structural and functional investigations of proteins associated with inherited forms of Parkinson disease (PINK1, DJ-1 and Parkin).

Cancer and Innate Immune Responses

- ▶ Structural and functional analysis of innate immune responses mediated by toll-like receptors (TLRs) and, in particular, the role of the major adaptor MyD88.
- ▶ Analysis of mutations and SNPs that affect the TET2 gene and implications for acute myeloid leukaemia.
- ▶ Structural and functional analysis of the microsomal prostaglandin E synthase (mPGES-1) as a target for the generation of novel anti-inflammatory drugs with fewer side effects.

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	External Collaborations
	<ul style="list-style-type: none"> ▶ Metabolic Bases of Cardiovascular Risk ▶ Parkinson Disease and Movement Disorders ▶ Haematological Diagnosis ▶ Genetic Diseases ▶ Angiology, Vascular Biology and Inflammation 	<ul style="list-style-type: none"> ▶ Dr. Pereira. Institute of Molecular and Cellular Biology, Porto, Portugal. ▶ Dr. Paul E. Bock. Vanderbilt University, Nashville, Tennessee, USA. ▶ Dr. Ricardo Gutiérrez-Gallego. IMIM-UPF, Barcelona, Spain.

Active Grants	<ul style="list-style-type: none"> ▶ Pablo Fuentes Prior. Bases Estructurals de Processos Fisiopatològics Fonamentals. 2014 SGR 1214. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017. ▶ Pablo Fuentes Prior. Estudio de las interacciones de la trombina con sustratos e inhibidores y su aplicación al diseño de nuevos 	<p>pro- y anticoagulantes. SAF2014-57994-R. Ministerio de Economía y Competitividad. Duration: 2015-2017. 100,000 €.</p> <p>Note: Total amount granted to PI. It does not include indirect costs.</p>
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Grants Awarded in 2016	<ul style="list-style-type: none"> ▶ Pablo Fuentes Prior. A novel splicing therapeutic approach for Spinal Muscular Atrophy. DANIEL BRAVO 2015. Fundació Privada Daniel Bravo-Andreu. Duration: 2016-2019. 157,717 €. <p>Note: Total amount granted to PI. It does not include indirect costs.</p>	
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Scientific Production	<p>Molins B., Fuentes-Prior P., Adan A., Anton R., Arostegui J.I., Yague J., Dick A.D., Complement factor H binding of monomeric C-reactive protein downregulates proinflammatory activity and is impaired with at risk polymorphic CFH variants (2016) SCI REP-UK, 6.</p> <p>IF: 4.2590</p>

Pharmacokinetic/Pharmacodynamic Modelling and Simulation

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Members

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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

- ▶ Obtain recognition as an emerging group.
- ▶ Maintain existing external cooperation agreements.
- ▶ Establish new cooperation agreements within the HSCSP RI.
- ▶ 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.
- ▶ Pharmacological Research in Humans.
- ▶ Pharmacy.
- ▶ HIV and AIDS.
- ▶ Epidemiology and Traumatology Services.

External Collaborations

- ▶ Lluita Contra la SIDA Foundation, Germans Trias i Pujol Hospital, Badalona, Spain.
- Eficacia y seguridad de la vacuna HIV-consv más romidepsina en la reducción del reservorio y el control viral tras la interrupción del cART. Análisis PK/PD poblacional y estudio de predictores, Hospital Germans Trias i Pujol.

- Ensayo clínico para evaluar la eficacia, la seguridad y el impacto económico de la reducción de la dosis de darunavir en pacientes infectados por el VIH en tratamiento con darunavir/ritonavir una vez al día. Hospital Germans Trias i Pujol.
- ▶ Pharmacy Service, Hospital Quiron, Mallorca, Spain.
- ▶ Department of Pharmacology, Liverpool University, UK.
- ▶ Anaesthesiology Service, Hospital del Mar, Barcelona, Spain.

Active Grants

- ▶ Marta Valle Cano. Grup d'investigació en farmacologia humana. 2014 SGR 828. 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 2016

- ▶ 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 €.

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

Theses

- ▶ María Rosa Ballester. Evaluación del efecto sobre el eeg, sedación y rendimiento psicomotor de diazepam y desmetildiazepam en voluntarios sanos. Aplicación de modelado farmacocinético/farmacodinámico poblacional. Universitat Autònoma de Barcelona. Director: Marta Valle. Date of defense: Feb 2016.
- ▶ Jaume García. Resultados postoperatorios en la cirugía de prótesis total de rodilla utilizando la base de datos pain-out. Factores de riesgo asociados a presentar un dolor postoperatorio moderado-intenso. Universitat Autònoma de Barcelona. Directors: Marta Valle Cano, Margarita Puig Riera de Conías. Date of defense: Feb 2016.
- ▶ Javier Alejandro Estévez Gómez. Efecto de las concentraciones de ritonavir en la farmacocinética de atazanavir: aplicación de técnicas de modelado y simulación farmacocinético poblacional. Universitat Autònoma de Barcelona. Director: Marta Valle Cano. Date of defense: Nov 2016.

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Scientific Production

Maqueda AE, Valle M, Addy PH, Antonijoan RM, Puntos M, Coimbra J, Ballester MR, Garrido M, González M, Claramunt J, Barker S, Lomnicka I, Waguespack M, Johnson MW, Griffiths RR, Riba J. Naltrexone but Not Ketanserin Antagonizes the Subjective, Cardiovascular, and Neuroendocrine Effects of Salvinorin-A in Humans. *Int J Neuropsychopharmacol*. 2016 Jul 5;19(7).
IF: 4.2390

Molto J, Estevez J.A., Miranda C., Cedeno S., Clotet B., Valle M., Population pharmacokinetic modelling of the changes in atazanavir plasma clearance caused by ritonavir plasma concentrations in HIV-1 infected patients (2016) *BRIT J CLIN PHARMACO*, 82 (6), 1528-1538.
IF: 3.4930

Valle M., Maqueda A.E., Rabella M., Rodriguez-Pujadas A., Antonijoan R.M., Romero S., Alonso J.F., Mananas M.A., Barker S., Msc P.F., Feilding A., Riba J., Inhibition of alpha oscillations through serotonin-2A receptor activation underlies the visual effects of ayahuasca in humans (2016) *EUR NEUROPSYCHOPHARM*, 26 (7), 1161-1175.
IF: 4.2390

Generation of Advanced Therapy Medicines

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Reyes Moreno, Blanca BST
Rodríguez Gómez, Luciano BST
Vives Armengol, Joaquim BST



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.

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Scientific Production

Caminal M., Peris D., Fonseca C., Barrachina J., Codina D., Rabanal R.M., Moll X., Morist A., Garcia F., Cairo J.J., Godia F., Pla A., Vives J., Cartilage resurfacing potential of PLGA scaffolds loaded with autologous cells from cartilage, fat, and bone marrow in an ovine model of osteochondral focal defect (2016) CYTO-TECHNOLOGY, 68 (4), 907-919.

IF: 1.8570

Caminal M., Velez R., Rabanal R.M., Vivas D., Batlle-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 (2016) J TISSUE ENG REGEN M.

IF: 3.9890

Codinach M., Blanco M., Ortega I., Lloret M., Reales L., Coca M.I., Torrents S., Doral M., Oliver-Vila I., Requena-Montero M., Vives J., Garcia-Lopez J., Design and validation of a consist-

ent and reproducible manufacture process for the production of clinical-grade bone marrow-derived multipotent mesenchymal stromal cells (2016) CYTOTHERAPY, 18 (9), 1197-1208.

IF: 3.2030

Del Mazo-Barbara A., Mirabel C., Nieto V., Reyes B., Garcia-Lopez J., Oliver-Vila I., Vives J., Qualification of computerized monitoring systems in a cell therapy facility compliant with the good manufacturing practices (2016) REGEN MED, 11 (6), 521-528.

IF: 2.8680

Oliver-Vila I., Coca M.I., Grau-Vorster M., Pujals-Fonts N., Caminal M., Casamayor-Genesca A., Ortega I., Reales L., Pla A., Blanco M., Garcia J., Vives J., Evaluation of a cell-banking strategy for the production of clinical grade mesenchymal stromal cells from Wharton's jelly (2016) CYTOTHERAPY, 18 (1), 25-35.

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*Total Impact Factor **Mean Impact Factor

Associated Groups

254 Inflammation and Vascular Remodelling

258 Emerging Processes in Prevalent Diseases

262 Radiophysics and Radioprotection

264 Paediatrics

266 Ophthalmology

268 Nuclear Medicine

270 Intensive Medicine

272 Pharmacy

274 Dermatology

278 Anaesthesiology

280 Plastic Surgery



282 Palliative Care

284 Andrology

286 Urology

290 Radiation Oncology

292 Locomotor System Research

294 Multiple Sclerosis and Epilepsy Research

296 Pain and Neurosciences

298 Nursing Care Research

300 Reproductive Health

302 Translational Molecular Oncology

304 Cardiac Surgery

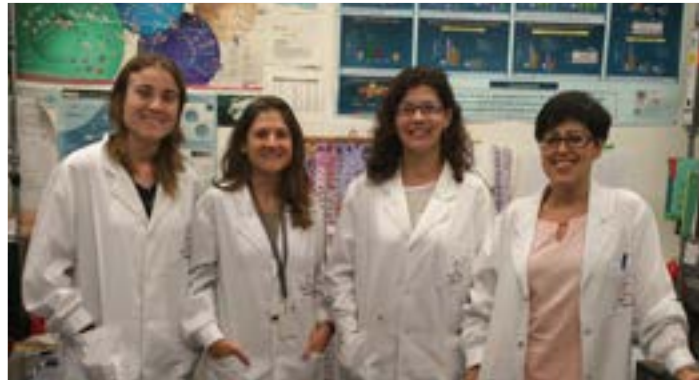
Inflammation and Vascular Remodelling

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Cañes Esteve, Laia IR
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

- ▶ Simon Méndez Ferrer (Cambridge Stem Cell Institute)
- ▶ Nadia Mercader. Universidad de Berna (Switzerland).
- ▶ Vicente Andrés. Centro Nacional de Investigaciones Cardiovasculares (Spain).
- ▶ E. Rodríguez-Boulan (Cornell University).
- ▶ José Luis Martín-Ventura. Fundación Jiménez Díaz (Madrid, Spain).

- ▶ Roxana Carare (University of Southampton).
- ▶ Mercedes Salaces. 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. Hospital de la Princesa (Madrid, Spain).
- ▶ Anna Planas (IIBB-CSIC).

Awards

- ▶ Rodríguez C, Varona S, Martí-Pàmies I, Galan M, Orriols M, Escudero JR, Martín-Ventura JL, Camacho M, Martínez-González J. La inhibición de la Fibulina-5 promueve el desarrollo de aneurisma de aorta abdominal. Special mention. XIX Congreso Nacional de la Sociedad Española de Arteriosclerosis. Granada, may 2016.

Theses

- ▶ Beatriz Ferrán Pérez. Identificación y caracterización de genes regulados por NOR-1 (Neuron-derived Orphan Receptor-1): implicación en el remodelado vascular y la diferenciación celular. Universitat de Barcelona. Directors: José Martínez González, Cristina Rodríguez Sinovas. Date of defense: 29 April 2016.

Patents

- ▶ José Martínez González, Cristina Rodríguez, Ingrid Martí Pàmies. Title: Modelo animal para aneurisma aórtico y sus usos. Application number: P201631548 (Oficina Española de Patentes y Marcas). Applicant: Consejo Superior de Investigaciones Científicas (CSIC). Country of priority: Spain. Date: 7 December 2016

Grants
Awarded in
2016

- ▶ Cristina Rodríguez Sinovas. Remodelado de la matriz extracelular en el aneurisma de aorta abdominal y enfermedad arterial periférica: impacto sobre parámetros biomecánicos, procesos angiogénicos y biomarcadores. Instituto de Salud Carlos III. PI15/01016. Duration: 2016-2018. €189,365.
- ▶ Cristina Rodríguez Sinovas. Contribución de la lisil oxidasa (LOX) al estrés oxidativo, la rigidez vascular y la hipertensión arterial. Sociedad/Fundación Española de Arteriosclerosis. Duration: 2016-2017. €9,000.

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

Inflammation and Vascular Remodelling

*TIF: 46.8540 **MIF: 5.8568

Scientific Production

Aguado A., Fischer T., Rodriguez C., Manea A., Martinez-Gonzalez J., Touyz R.M., Hernandez R., Alonso M.J., Dixon D.A., Briones A.M., Salaices M., Hu antigen R is required for NOX-1 but not NOX-4 regulation by inflammatory stimuli in vascular smooth muscle cells. (2016) J HYPERTENS, 34 (2), 253-265.

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Alonso J., Galan M., Marti-Pamies I., Romero J.M., Camacho M., Rodriguez C., Martinez-Gonzalez J., NOR-1/NR4A3 regulates the cellular inhibitor of apoptosis 2 (ciAP2) in vascular cells: Role in the survival response to hypoxic stress. (2016) SCI REP-UK, 6.

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Del Toro R., Chevre R., Rodriguez C., Ordonez A., Martinez-Gonzalez J., Andres V., Mendez-Ferrer S., Nestin+ cells direct inflammatory cell migration in atherosclerosis. (2016) NAT COMMUN, 7.

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Ferran B., Marti-Pamies I., Alonso J., Rodriguez-Calvo R., Aguilo S., Vidal F., Rodriguez C., Martinez-Gonzalez J., The nuclear receptor NOR-1 regulates the small muscle protein, X-linked (SMPX) and myotube differentiation. (2016) SCI REP-UK, 6.

IF: 4.2590

Galan M., Varona S., Orriols M., Rodriguez J.A., Aguilo S., Dilme J., Camacho M., Martinez-Gonzalez J., Rodriguez C., Induction of histone deacetylases (HDACs) in human abdominal aortic aneurysm: Therapeutic potential of HDAC inhibitors. (2016) DIS MODEL MECH, 9 (5), 541-552.

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Martinez-Martinez E., Rodriguez C., Galan M., Miana M., Jurado-Lopez R., Bartolome M.V., Luaces M., Islas F., Martinez-Gonzalez J., Lopez-Andres N., Cachofeiro V., The lysyl oxidase inhibitor (β -aminopropionitrile) reduces leptin profibrotic effects and ameliorates

cardiovascular remodeling in diet-induced obesity in rats. (2016) J MOL CELL CARDIOL, 92, 96-104.

IF: 5.6800

Nus M., Martinez-Poveda B., MacGrogan D., Chevre R., D'Amato G., Sbroglio M., Rodriguez C., Martinez-Gonzalez J., Andres V., Hidalgo A., De La Pompa J.L., Endothelial Jag1-RBPJ signalling promotes inflammatory leucocyte recruitment and atherosclerosis. (2016) CARDIOVASC RES, 112 (2), 568-580.

IF: 5.8780

Orriols M., Varona S., Marti-Pamies I., Galan M., Guadall A., Escudero J.R., Martin-Ventura J.L., Camacho M., Vila L., Martinez-Gonzalez J., Rodriguez C., Down-regulation of Fibulin-5 is associated with aortic dilation: Role of inflammation and epigenetics. (2016) CARDIOVASC RES, 110 (3), 431-442.

IF: 5.8780

Other Publications

- ▶ Orriols M., Varona S., Aguilo S., Galan M., Martinez Gonzalez J., Rodriguez C., Inflammation inhibits vascular fibulin-5 expression: Involvement of transcription factor SOX9 La inflamación inhibe la expresión vascular de la fibulina-5: implicación del factor de transcripción SOX9. (2016) Clinica e Investigacion en Arteriosclerosis, 28 (6), 271-280.

Emerging Processes in Prevalent Diseases

Coordinator

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Members

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 Lozano Polo, Laura FGS
 Mateo Roca, Miriam FGS
 Mauri Plana, Albert FGS
 Montiel Dacosta, Josep Antoni FGS
 Moreno Pinillos, Rosa FGS
 Puig Campmany, Mireia FGS
 Ris Romeu, Josep FGS
 Santaló Bel, Miquel FGS
 Serradell Arranz, Sonia FGS
 Trejo Gutierrez, Olga María FGS
 Turbau Valls, Miquel FGS
 Vendrell Torra, Esther FGS



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. Guargiola.
- ▶ 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: Míriam 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: Miquel 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.

Collaborations

External Collaborations

- ▶ Programa ACCORD (Achieving Comprehensive Coordination on Organ Donation throughout the European Union). Prácticas clínicas al final de la vida en pacientes fallecidos con daño cerebral catastrófico y donación de órganos – Accord España. Organización Nacional de Trasplantes and Comisión de Trasplantes del Consejo Interterritorial de Salud.

Theses

- ▶ Miguel Alberto Rizzi. Delirium en pacientes atendidos por insuficiencia cardíaca descompensa en urgencias: Características clínicas y evolución. Director: Olga H. Torres Bonafonte. Date of defense: 16-11-2016.
- ▶ Irene Fernández Castaño. Efecte de l'administració d'àcid docosahexanoic sobre les alteracions metabòliques i sobre la distribució del greix corporal en pacients amb infecció per vih-1 sotmesos a tractament antiretroviral. Director: Pere Domingo Pedrol. Date of defense: 13/10/16.

Awards

- ▶ J Guardiola Tey , M Roca Costa , M Sans Segura , B Pares Bofill , L Sanchez García , M Hernandez Stahl , M Miserachs Sala. Estudio comparativo entre la población con patología infecciosa vs la población sin patología infecciosa que ingresa en una unidad de estancia corta (UEC). Best communication. Burgos, 9 June 2016.

Active Grants

- ▶ JM Guardiola. Erradicación del VHC en pacientes coinfectados por VIH/VHC: efectos sobre la inflamación, el daño endotelial, la activación inmune y la aterosclerosis preclínica. FIS EC11-241. Duration: 2012-2016. €160,000.

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

Other Publications

- ▶ Alquezar Arbe A., Mateo Roca M., De Diego Bustillos E., Agra Montava I., Bullet points of emergency attendances for cocaine-users in Spain. (2015) MED CLIN-BARCELONA, 145 (5), 228-229.
- ▶ Alquezar Arbe A., Rizzi M., Martin-Marcuello J., De Diego-Bustillos E., Comments about the status of oral anticoagulant treatment in patients with nonvalvular atrial fibrillation in Spain. (2015) REV CLIN ESP, 215 (9), 542-.
- ▶ Alquezar Arbe A., Trejo Gutierrez O., Turbau Valls M., Barcons Pujol M., Comments on predictors of the use of the early invasive strategy in women with non-ST-elevation acute coronary syndrome. (2015) MED INTENSIVA, 39 (3), 196-197.
- ▶ Mireia Puig, Josep Ris, Salvador Benito. Nuevas herramientas frente a la saturación en los servicios de urgencias hospitalarios: gestión de la estancia, toma de decisiones y flexibilidad operativa. New Tools for coping with hospital emergency department overcrowding: managing throughput, decision making, and operational flexibility. Emergencias 2015;27:425-426.

Emerging Processes in Prevalent Diseases

*TIF: 37.9610 **MIF: 3.1634

Scientific Production

Carbajosa V, Martin-Sanchez F.J., Llorens P, Herrero P, Jacob J., Alquezar A., Perez-Dura M.J., Alonso H., Garrido J.M., Torres-Murillo J., Lopez-Grima M.I., Pinera P, Fernandez C., Miro O., Gil C., Fuentes M., et al. Factors associated with short stays for patients admitted with acute heart failure Factores asociados a estancias cortas en los pacientes ingresados por insuficiencia cardiaca aguda (2016) EMERGENCIAS, 28 (6), 366-374.

IF: 3.0280

Duran-Cambra A., Rossello X., Sans-Rosello J., Vila M., Hidalgo A., Diaz-Rodriguez I., Leta R., Pons-Llado G., Ordonez-Llanos J., Sionis A., High-sensitivity troponin T testing and coronary computed tomography angiography for rapid diagnosis of chest pain in the emergency department Troponina T de alta sensibilidad y angiotomografía computarizada coronaria para el diagnóstico rápido del dolor torácico en el servicio de urgencia (2016) EMERGENCIAS, 28 (1), 9-15.

IF: 3.0280

Galvez San Roman J.L., Jimenez Hidalgo C., Portillo Cano M.M., Garcia Sanchez M.O., Navarro Bustos C., Julian-Jimenez A., Martinez Ortiz de Zarate M., Gonzalez del Castillo J., Soriano T., de Castro C.H., et al. Characteristics and epidemiological changes for patients with urinary tract infection in the emergency department (2016) AN SIST SANIT NAVAR, 39 (1), 35-46.

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Jacob J., Miro O., Herrero P, Martin-Sanchez F.J., Gil V., Tost J., Aguirre A., Escoda R., Alquezar A., Andueza J.A., Llorens P, Predicting short-term mortality in patients with acute exacerbation of chronic heart failure: The EAHFE-3D scale Predicción de la mortal-

idad a muy corto plazo de los pacientes con insuficiencia cardiaca crónica agudizada: escala EAHFE-3D (2016) MED INTENSIVA, 40 (6), 348-355.

IF: 1.2310

Laguno M., Von Wichmann M.A., Van den Eynde E., Navarro J., Cifuentes C., Murillas J., Veloso S., Martinez-Rebollar M., Guardiola J.M., Jou A., Gomez-Sirvent J.L., Cervantes M., Pineda J.A., Lopez-Calvo S., Carrero A., Montes M.L., Deig E., Tapiz A., Ruiz-Mesa J.D., Cruceta A., de Lazzari E., Mallolas J., Boceprevir plus pegylated interferon/ribavirin to retreat hepatitis C virus genotype 1 in HIV-HCV co-infected patients: final results of the Spanish BOC HIV-HCV Study (2016) INT J INFECT DIS, 53, 46-51.

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Llao J., Naves J.E., Ruiz-Cerulla A., Gordillo J., Manosa M., Maisterra S., Cabre E., Garcia-Planella E., Guardiola J., Domenech E., Improved outcome of acute severe ulcerative colitis while using early predictors of corticosteroid failure and rescue therapies (2016) DIGEST LIVER DIS, 48 (6), 608-612.

IF: 3.0610

Martin-Sanchez F.J., Carbajosa V., Llorens P, Herrero P, Jacob J., Miro O., Fernandez C., Bueno H., Calvo E., Ribera Casado J.M., Adrada E.R., Lage M.C., Munoz M., Coloma E., Gil V., Escoda R., Perez-Dura M.J., et al. Length of stay in patients admitted for acute heart failure Tiempo de estancia prolongado en los pacientes ingresados por insuficiencia cardiaca aguda (2016) GAC SANIT, 30 (3), 191-200.

IF: 1.7680

Mueller-Hennesen M., Lindahl B., Giannitsis E., Biener M., Vafaie M., DeFilippi C.R., Christ

M., Santalo-Bel M., Panteghini M., Plebani M., Verschuren F., Jernberg T., French J.K., Christenson R.H., Body R., McCord J., Dilba P., Katus H.A., Mueller C., Diagnostic and prognostic implications using age- and gender-specific cut-offs for high-sensitivity cardiac troponin T - Sub-analysis from the TRAPID-AMI study (2016) INT J CARDIOL, 209, 26-33.

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Prim N., Rivera A., Rodriguez-Navarro J., Espanol M., Turbau M., Coll P., Mirelis B., Detection of mcr-1 colistin resistance gene in polyclonal escherichia coli isolates in Barcelona, Spain, 2012 to 2015 (2016) EUROSURVEILLANCE, 21 (13).

IF: 7.2020

Serna L.Y., Mananas M.A., Marin J., Hernandez A.M., Benito S., Optimization techniques in respiratory control system models (2016) APPL SOFT COMPUT, 48, 431-443.

IF: 3.5410

Serna Higueta L.Y., Mananas M.A., Mauricio Hernandez A., Marina J., Benito S., Novel Modeling of Work of Breathing for Its Optimization during Increased Respiratory Efforts (2016) IEEE SYST J, 10 (3), 1003-1013.

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Trullas J.C., Miro O., Formiga F., Martin-Sanchez F.J., Montero-Perez-Barquero M., Jacob J., Quiros-Lopez R., Puente P.H., Manzano L., Llorens P., Anarte L., Aramburu O., Arevalo-Lorido J.C., Bas F., Carrera M., et al. The utility of heart failure registries: A descriptive and comparative study of two heart failure registries (2016) POSTGRAD MED J, 92 (1087), 260-266.

IF: 1.8740

Radiophysics and Radioprotection

Coordinator

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Members

Carrasco de Fez, Pablo FGS
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Jornet Sala, Nuria FGS
Latorre Musoll, Arthur FGS
Lizondo Gisbert, Maria FGS
Pallerol Pinzano, Rosa M. FGS
Ruiz Martínez, Agustín FGS



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.

- ▶ Evaluation of the best external radiotherapy technique for breast cancer treatment and its implementation in clinical practice.

Digital 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. 2014 SGR 534. Montserrat Ribas, Pablo Carrasco, Teresa Eudaldo, Núria Jornet, Artur Latorre, Agustín Ruiz. Duration: 2014-2016.
- ▶ 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 ionitzants i del càncer. 2014 SGR 534-2 C. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2014-2017.
- ▶ Pablo Carrasco de Fez. Dosimetría en piel en técnicas de IMRT y SBRT. PROYECTOS SINGULARES 2015. Asociación Española Contra el Cáncer. Duration: 2015-2017. 25,500 €.

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

Grants Awarded in 2016

- ▶ 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 €.
- ▶ Nuria Jornet Sala, Montserrat Ribas Morales. Accuracy and security in SBRT techniques: evaluation of the effect of the respiratory movement and "in vivo" dosimetry by means of portal dosimetry. PI15/00788. €98,615.

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

Other
Publications

- ▶ Terrón JA, Arranz L, Colmenares R, Guerrero R, Mancha PJ, Muñoz C, Núñez L, Núñez C, Ribas M, Salgado M. Recursos humanos en los Servicios de Radiofísica y Protección Radiológica. Informe del grupo de trabajo de la SEFM. Rev Fis Med 2016; 17(2):107-53.

Awards

- ▶ Montserrat Ribas Morales. Diploma of recognition of “physicist of excellence” to Montserrat Ribas Morales for her professional career. Awarded by the Colegio Oficial de Físicos. Madrid, 1 Dec 2016.

Paediatrics

Coordinator

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Febles González, Patricia FGS
Ferres Mataro, Jerónimo FGS
Fraga Rodríguez,
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Ginovart Galiana, Gemma FGS
López Bernal, Ester FGS
Moliner Calderón, Elisenda FGS
Pardo García, Nuria FGS
Scheibl, Alexandra FGS
Sisinni, Luisa FGS
Tobajas Torrubiano, Eva FGS
Torrent Español,
Montserrat FGS
Turón Viñas, Eulàlia FGS
Verd Vallespir, Sergi 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

External Collaborations

- ▶ Clinical research group linked to Centro de Investigación Biomédica en la Red de Enfermedades Raras (CIBERER).
- ▶ G. Fraga (collaborator). Estudio multicéntrico europeo (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).
- ▶ 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.

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Scientific Production

Castillo N., Garcia-Cadenas I., Diaz-Heredia C., Martino R., Barba P., Ferra C., Canals C., Elorza I., Olive T., Badell I., Sierra J., Valcarcel D., Querol S., Cord Blood Units with High CD3+ Cell Counts Predict Early Lymphocyte Recovery After In Vivo T Cell-Depleted Single Cord Blood Transplantation (2016) BIOL BLOOD MARROW TR, 22 (6), 1073-1079.

IF: 4.7040

Garcia-Gamez A., Bermudez Bencerrey P., Brio-Sanagustin S., Guerrero Vara R., Sisinni L., Stuart S., Roebuck D., Gomez Munoz F., Vesical Artery Embolization in Haemorrhagic Cystitis in Children (2016) CARDIOVASC INTER RAD, 39 (7), 1066-1069.

IF: 2.1910

Ginovart G., Gich I., Verd S., Human milk feeding protects very low-birth-weight infants from retinopathy of prematurity: a pre-post cohort analysis (2016) J MATERN-FETAL NEO M, 29 (23), 3790-3795.

IF: 1.8260

Ginovart G., Gich I., Verd S., Formula Feeding Is Independently Associated with Acute Kidney Injury in Very Low Birth Weight Infants: A Pre-Post Cohort Analysis (2016) J HUM LACT, 32 (4), NP111-NP115.

IF: 2.0070

Guerrero P., Corripio R., Soriano-Guillen L., Herrero F.-J., Canete R., Castro-Feijoo L., Escribano A., Espino R., Labarta J.-I., Argente J., Saez J.J.A., Diez F.J.A., Sanjulian C.A., Conde

J.B., Gonzalez L.B., Alcaina M.B., et al. Changes in body mass index in girls with idiopathic central precocious puberty under gonadotropin-releasing hormone analogue therapy: The Spanish registry (2016) HORM RES PAEDIAT, 86 (3), 154-160.

IF: 1.8440

Ramos A., Caimari F., Pujol I.M., Garcia-Patterson A., Ginovart G., Adelantado J.M., Corcoy R., In women with gestational diabetes mellitus factors influencing growth have a larger effect on placental weight than on birth weight (2016) EUR J OBSTET GYN R B, 202, 60-65.

IF: 1.6660

Ophthalmology

Coordinator

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Members

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Del Campo Carrasco,
Zoraida FGS
Díaz Cascajosa, Jesús FGS
García Parés, Eva FGS
Gil Arnal,
Julián Miguel Ángel FGS
Luna Marine, María Sabina FGS
Marieges Jubany,
María Teresa FGS
Mingorance Moya, Ester IR
Rodríguez Álvarez,
Fernando FGS
Sánchez Espallargas,
Fernando FGS
Solans Barri, Teresa FGS
Téllez Vázquez, Jesús María FGS
Vela Segarra, José Ignacio FGS



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.

Awards

- ▶ Jaume Crespí. Tortuosidad arterial retiniana. Estudio Genético. Best oral communication Congreso SERV.
- ▶ Jaume Crespí. New genes involved in rare diseases in ophthalmology. Extraordinary thesis award.

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Scientific Production

Gras-Cabrero J.R., Martel-Martin M., Garcia-Lorenzo J., Rodríguez-Alvarez F., Montserrat-Gili J.R., Mirapeix-Lucas R., Massegur-Solench H., Surgical Anatomy of the Medial Wall of the Orbit in 14 Human Cadavers (2016) J NEUROL SURG PART B, 77 (6), 439-444.
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*Total Impact Factor **Mean Impact Factor

Nuclear Medicine

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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).

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Scientific Production

Cabrera M.E., Rey P.M., Carrio I., Montes A., Lopez D.A., Response to 223Ra-dichloride in castration-resistant prostate cancer with bone metastasis: A case report (2016) ONCOL LETT, 12 (2), 1323-1328.

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Other Publications

- ▶ Carrio I., Chiti A., Why New Journals? The Growth of the EJNMMI Family. (2015) EUR J NUCL MED MOL I, 42 (11), 1625-1626.
- ▶ Zhang H., Tian M., Carrio I., Civelek A.C., Fujibayashi Y., Molecular image-guided theranostic and personalized medicine 2014. (2015) BIOMED RES INT, 2015.

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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Scientific Production

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Gonzalez de Molina F.J., Galindo M., Gonzalez C., Broch M.J., del Bano L., Roglan A., Vascular access and extracorporeal circuit

patency in continuous renal replacement therapy Acceso vascular y permeabilidad de los circuitos extracorpóreos en las técnicas de depuración renal continua (2016) MED INTENSIVA, 40 (9), 572-585.

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Martin, Mancebo J, Curley G.Update in Critical Care 2015. Am J Respir Crit Care Med 2016; 194:19-25

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setting: meaning, usefulness and perspectives (2016) INTENS CARE MED, 42 (9), 1360-1373.

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Other Publications

- ▶ Guerin C., Mancebo J., Prone positioning and neuromuscular blocking agents are part of standard care in severe ARDS patients: yes. (2015) INTENS CARE MED, 41 (12), 2195-2197.

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 Tuneu Valls, Laura FGS



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

- ▶ OncOncogenesis 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

Theses

- ▶ Isabel Castro Cels. Resultados negativos asociados a la medicación como causa de consulta en los usuarios del Servicio de Urgencias del Hospital de la Santa Creu y Sant Pau de Barcelona. Universidad de Granada. Directors: M. Antonia Mangués Bafalluy, Laura Tuneu Valls, M. José Faus Dáder. Date of defense: 15.01.16.
- ▶ Montserrat Masip Torné. Efectos adversos neuropsiquiátricos en pacientes con hepatitis C crónica en tratamiento con peginterferon alfa-2 y ribavirina. Universidad de Granada. Directors: M. Antònia Mangués Bafalluy, Laura Tuneu Valls, M. José Faus Dader. Date of defense: 15.01.16.
- ▶ Ana Clopés Estela. Optimización mediante análisis farmacocinético del tratamiento de busulfan en dos poblaciones específicas de pacientes onco-hematológicos. Universidad Autónoma de Barcelona. Directors: M. Antonia Mangués, Jordi Sierra Gil, Dolors Soy Muner. Date of defense: 5.2.16.
- ▶ César Velásco Muñoz. El VIH desde una perspectiva de Salud Global. Universidad de Barcelona. Directors: Noé Garin Escrivà, Antoni Trilla García, Date of defense: 12.12.16. (international mention)

Awards

- ▶ MA Mangués. (Scientific Committee). 10 Temas candentes de Farmacia Hospitalaria. XIVth edition. Mejores Iniciativas de la Farmacia (Profesión y Deontología). Correo Farmacéutico. Madrid, 4 April 2016.
- ▶ Impact of the incorporation of m-health in the clinical practice of the transplanted cardiac patient I. 07/2015. Grants from the College of Pharmacists of Barcelona. 2015-2016.
- ▶ 2nd prize for Projects aiming to improve medication adherence in patients with immune-mediated inflammatory diseases. Spanish Society of Hospital Pharmacy. Project: 2015-2016.
- ▶ Proyecto intramural INT-2-CARE, Intelligent platform for the integral care of complex patients. 2016. CIIBER Bioingeniería biomateriales y nanomedicina (CIBER-BBN).
- ▶ ESPEN 2016 Communication Grants (Travel Fellowship). Physicochemical compatibility of amiodarone with parenteral nutrition. 2016. 35th ESPEN Congress in Copenhagen.

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Scientific Production

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- Céspedes M.V., Unzueta U., Alamo P., Gallardo A., Sala R., Casanova I., Pavon M.A., Mangués M.A., Trias M., López-Pousa A., Villaverde A., Vázquez E., Mangués R., Cancer-specific uptake of a liganded protein nanocarrier targeting aggressive CXCR4+ colorectal cancer models (2016) NANOMED-NANOTECHNOL, 12 (7), 1987-1996.
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- Fondevilla E., Grau S., Mojal S., Palomar M., Matas L., Gudiol F., Balet A., Pons M., Barrera M.T., Calafell M., Enrique-Tarancon G., Gayola G., Carrascosa M., Valls C., Fuster M., Ibanez L., Cuquet J., Sagales M., et al. Consumption of systemic antifungal agents among acute care hospitals in Catalonia (Spain), 2008-2013 (2016) EXPERT REV ANTI-INFE, 14 (1), 137-144.
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- Garin N., Koyanagi A., Chatterji S., Tyrovolas S., Olaya B., Leonardi M., Lara E., Koskinen S., Tobiasz-Adamczyk B., Ayuso-Mateos J.L., Haro J.M., Global Multimorbidity Patterns: A Cross-Sectional, Population-Based, Multi-Country Study (2016) J GERONTOL A-BIOL, 71 (2), 205-214.
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Other Publications

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- ▶ Concepción-Martín M, Gómez-Oliva C, Juanes A, Mora J, Vidal S, Diez X, Torras X, Sáinz S, Villanueva C, Farré A, Guarnier-Argente C, Guarnier C. IL-6, IL-10 and TNF α do not improve early detection of post-endoscopic retrograde cholangiopancreatography acute pancreatitis: a prospective cohort study. Sci Rep. 2016 Sep 19; 6 33492. doi: 10.1038/srep33492.

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.

Theses

- ▶ Verònica Ruiz Salas. Estudi de bases moleculars addicionals que defineixin l'eficàcia de vismodegib i fenòmens de resistència en pacients amb carcinoma basocel·lular localment avançat i / o metastàtic mitjançant la recollida de biòpsies cutànies seriades durant el tractament amb aquest fàrmac. Directors: Lluís Puig Sanz, Joan Ramón Garcés Gatnau, Marta Alegre Fernández. Date of defense: 14 June 2016.

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Dermatology

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Scientific Production

Evers A.W.M., Garcovich S., Goncalo M., Lambert J., Legat F.J., Leslie T., Misery L., Raap U., Reich A., Savk E., Streit M., Serra-Baldrich E., Szepietowski J., Wallengren J., Weisshaar E., Dugas M., European EADV network on assessment of severity and burden of Pruritus (PruNet): first meeting on outcome tools. (2016) *J EUR ACAD DERMATOL*, 30 (7), 1144-1147.

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Other Publications

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▶ Barnadas M.A., Diaz Encarnacion M.M., Refractory cutaneous IgA vasculitis treated with omega-3 fatty acids. (2016) *Case Reports in Dermatology*, 8 (3), 333-340.

▶ Claudepierre P., Mcinnes I., Puig L., Gottlieb A.B., Ritchlin C., You Y., Song M., Kafka S., Tang K., Morgan G., Rahman P., Kavanaugh A., Association entre amélioration de l'enthésopathie et qualité de vie sous ustekinumab chez les patients atteints de rhumatisme psoriasique et naïfs d'anti-TNFs : données de 2 études de phase 3. (2016) *Revue du Rhumatisme (Edition Française)*, 83 (1), A181-A182.

▶ Esplugues J.V., Flamion B., Puig L., Putting the "bio" in "biotherapeutics"/checkpoints for biosimilars/application of biosimilars. (2016) *New Horizons in Translational Medicine*, 3 (3-4), 161.

▶ Gonzalez-de Paz L., Ribera M., Gratacos-Masmitja J., Ros S., Blanch Mur C., Alfonso-Zamora S., The Spanish Psoriasis Patients' Association According to Its Members: Cross-Sectional Descriptive Study of Members' Opinions of the Association's Functions Función y re-

spaldo a la asociación de pacientes con psoriasis en España según sus miembros: estudio descriptivo transversal. (2016) *Actas Dermo-Sifiliograficas*, 107 (9), 751-757.

▶ Puig L., Cytokine pathways and the role of dysbiosis in psoriasis, psoriatic arthritis, and Crohn disease Psoriasis, artritis psoriásica y enfermedad de Crohn: circuitos de citocinas y papel de la disbiosis. (2016) *Actas Dermo-Sifiliograficas*, 107 (2), 95-97.

▶ Puig L., Lopez-Ferrer A., Vilarrasa E., Garcia I., Fernandez-Del Olmo R., Model for assessing the efficiency of biologic drugs in the treatment of moderate to severe psoriasis for one year in clinical practice in Spain Modelo de eficiencia de los fármacos biológicos en el tratamiento de la psoriasis moderada-grave durante un año en las condiciones de uso en España. (2016) *Actas Dermo-Sifiliograficas*, 107 (1), 34-43.

▶ Roe Crespo E., Baselga Torres E., Objectives and usefulness of atopy schools Objetivos y utilidad de las escuelas de atopia. (2016) *Piel*, 31 (1), 1-3.

Anaesthesiology

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Villamor Vázquez,
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Main Lines of Research

Critical analysis of new clinical technologies

- ▶ Anaconda-inhaled sedation in patients undergoing postoperative mechanical ventilation.
- ▶ New monitoring systems for anaesthesia depth and cerebral oxygen status.

Perioperative medicine

- ▶ Epidemiological study of perioperative morbidity and mortality in collaboration with the epidemiology department of the HSCSP (Iberoamerican Cochrane Centre) and the European Society of Anesthesiology.

Rationalization of perioperative fluid therapy and blood products

- ▶ Institutional protocolization of massive 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

- ▶ Professional team preoperative evaluations.
- ▶ Zero preoperative stay.

Physiology, pharmacology and anaesthetic techniques

- ▶ Intraoperative respiratory physiology.
- ▶ Peripheral nerve blocking for postoperative analgesia in CMA.
- ▶ Lipid Rescue due systemic complications after ALR.

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.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ MANAGE (Management of myocardial injury alter non cardiac surgery): Randomized clinical trial. Centro Cochrane. ClinicalTrials.gov: NCT01661101.

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. Beca Heimburger.

Active Grants

- ▶ Maria 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, aleator-

izado y controlado. PI14/00829 C. Instituto de Salud Carlos III. Duration: 2015-2017.

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

*TIF: 36.8570 **MIF: 5.2653

Scientific Production

Jose Martinez-Zapata M., Orozco L., Balius R., Soler R., Bosch A., Rodas G., Til L., Peirau X., Urrutia G., Gich I., Bonfill X., Efficacy of autologous platelet-rich plasma for the treatment of muscle rupture with haematoma: A multicentre, randomised, double-blind, placebo-controlled clinical trial (2016) BLOOD TRANSFUS-ITALY, 14 (3), 245-254.

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Madrid E., Urrutia G., Roque i Figuls M., Pardo-Hernandez H., Campos J.M., Paniagua P., Maestre L., Alonso-Coello P., Active body surface warming systems for preventing complications caused by inadvertent perioperative hypothermia in adults (2016) COCHRANE DB SYST REV, 2016 (4).

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Meier J., Filipescu D., Kozek-Langenecker S., Llau Pitarch J., Mallett S., Martus P., Matot I., Accurso G., Ahrens N., Akan M., Akeroy K., Aksoy O., Alanoglu Z., Alfredo M., Alkis N.,

Almeida V., Alousi M., Alves C., Amaral J., et al. Intraoperative transfusion practices in Europe (2016) BRIT J ANAESTH, 116 (2), 255-261viii.

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Mendez A.B., Ordóñez-Llanos J., Mirabet S., Galan J., Maestre M.L., Brossa V., Rivilla M.T., Lopez L., Koller T., Sionis A., Roig E., Prognostic Value of High-Sensitivity Troponin-T to Identify Patients at Risk of Left Ventricular Graft Dysfunction After Heart Transplantation (2016) TRANSPL P, 48 (9), 3021-3023.

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Neto A.S., Hemmes S.N.T., Barbas C.S.V., Beiderlinden M., Fernandez-Bustamante A., Futier E., Gajic O., El-Tahan M.R., Ghamdi A.A.A., Gunay E., Jaber S., Kokulu S., Kozian A., Licker M., Lin W.-Q., Maslow A.D., et al. Association between driving pressure and development of postoperative pulmonary complications in patients undergoing mechanical ventila-

tion for general anaesthesia: A meta-analysis of individual patient data (2016) LANCET RESP MED, 4 (4), 272-280.

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Robleda G., Roche-Campo F., Membrilla-Martinez L., Fernandez-Lucio A., Villamor-Vazquez M., Merten A., Gich I., Mancebo J., Catala-Puigbo E., Banos J.E., Evaluation of pain during mobilization and endotracheal aspiration in critical patients (2016) MED INTENSIVA, 40 (2), 96-104.

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IF: 1.4620

Plastic Surgery

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Elena María FGS
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Main Lines of Research

- ▶ Linfanophiogenesis research in comparative animal models between fat transplant stem cells/vone marrow, lymphatic-venous anastomosis and transplant of vascularised lymph node.
- ▶ Research in experimental animal models of the linfanophiogenesis and lymphatic system regeneration after a model of obstructive lymphedema.
- ▶ Imaging studies using lymphography and indocyanine green as well as lympho-MRI techniques.

Challenges

- ▶ Optimization of the planning of perforator flaps with the help of advances in imaging techniques and anatomy knowledge.
- ▶ Minimize intra- and postoperative complications in perforator flaps using new imaging techniques to visualize intraoperatively patterns of vascularisation of the flaps and vascular dominance.
- ▶ Lymphedema prevention in those patients with mastectomy in which we perform searching procedures of sentinel node and/or axillary lymph node dissections using new techniques of surgical treatment for this disease (lymphatic venous anastomosis, transfer of vascularised nodes).
- ▶ Identification by indocyanine green angiography for those patients affected with breast cancer with a major risk of developing secondary lymphedema.

Active Grants

- ▶ Jose Jaume Masia Ayala. Modelo experimental comparativo entre trasplante de células madre de tejido adiposo/médula ósea, anastomosis linfático-venosas, trasplante de ganglios vascularizados en el linfedema. PI13/02793. Instituto de Salud Carlos III. Duration: 2014-2017. 29,000 €.

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

Theses

- ▶ Gemma Pons Playá. Planificación preoperatoria de anastomosis linfático-venosas mediante ICG y linfoRMN. Universitat Autònoma de Barcelona. Directors: Jaume Masià, Xavier Rius i Cornadó, Xavier León i Vintró. Date of defense: 5 Feb 2016.
- ▶ Carmen Vega Garcia. El papel de la microcirugía reconstructiva tras la cirugía oncológica de cabeza y cuello. Indicaciones en la cirugía de rescate y en la glosectomía total. Universitat Autònoma de Barcelona Directors: Xavier León Vintró, Jaume Masià Ayala. Date of defense: 5 Feb 2016.

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Scientific
Production

Chang D.W., Masia J., Garza R., Skoracki R., Neligan P.C., Lymphedema: Surgical and medical therapy (2016) PLAST RECONSTR SURG, 138 (3), 2095-2185.
IF: 3.7840

Masia J., Pons G., Rodriguez-Bauza E., Barcelona Lymphedema Algorithm for Surgical Treatment in Breast Cancer-Related Lymphedema (2016) J RECONSTR MICROSURG, 32 (5), 329-335.
IF: 2.2160

Miranda Garces M., Mirapeix R., Pons G., Sadrí A., Masia J., A comprehensive review of the natural lymphaticovenous communications and their role in lymphedema surgery (2016) J SURG ONCOL, 113 (4), 374-380.
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Other
Publications

- ▶ Cheng MH, Masia J, et al. The 5th World Symposium for Lymphedema Surgery.. J Surg Oncol. 2016
- ▶ Loh CY, Masia J, et al. The 5th World Symposium for lymphedema surgery- Recent updates in lymphedema surgery and setting up of a global knowledge exchange platform. Loh CY, Masia J, et al. J Surg Oncol. 2016

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.

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 azoospermia secretora: desarrollo de nuevas herramientas diagnósticas y pronósticas. PI14/01250. Instituto de Salud Carlos III. Duration: 2015-2017. 86,500 €.

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.

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Scientific Production

Cosentino M., Kanashiro A., Vives A., Sanchez J., Peraza M.F., Moreno D., Perona J., de Marco V., Ruiz-Castane E., Sarquella J., Surgical treatment of Peyronie's disease with small intestinal submucosa graft patch (2016) INT J IMPOT RES, 28 (3), 106-109.

IF: 1.2930

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 (2016) PLOS ONE, 11 (10).

IF: 2.8060

Vives A., Vázquez A., Rajmil O., Cosentino M. Urethral condylomas in men: experience in 123 patients without previous treatment. (2016) INT J STD & AIDS 2016, Vol. 27 1 39-43.

IF: 1.35

Urology

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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.

Awards

- ▶ Juárez del Dago, P; Villavicencio, H; Breda, A; Bakavicius, A; Castellón, P; Moncada, E; Salas, D; Schwartzmann, I; Palou, J. Focal Cryo-Ablation in Localized Radiation Failure Prostate Cancer. Best poster Rising Stars Award in Urology. VII Rising Stars in Urology. Granada (Spain), 25-26 February 2016.
- ▶ 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 award in section "Last news in future treatments in erectil dysfunction". 31th EAU Annual Congress. Munich (Germany), 11-15 March 2016.
- ▶ Gaya, JM; Rodríguez, O; Maroto, P; Carrió, I; Parada, R; Kanashiro, A; Gómez de Liaño, A; Palou, J. FDG PET-CT vs CT Scan in the staging of urothelial neoplasms. Best poster award. AUA Annual Meeting. San Diego (California (USA)), 6-10 May 2016.
- ▶ Villavicencio, H. Juan Frías y Herrán Medal. Universidad San Francisco Xavier de Chuquisaca. Sucre (Bolivia), August 2016.

Grants Awarded in 2016

- ▶ Ana Bujons. Injerto de grasa autóloga rica con células madre como tratamiento a los defectos de pared abdominal en pacientes con complejo extrofia-epispadias. FIU Pedro Cifuentes Díaz Research Grant. Duration: 2016-2018. 15,000 €.

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

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Scientific Production

Albers P, Albrecht W, Algaba F, Bokemeyer C, Cohn-Cedermark G, Fizazi K, Horwich A, Laguna M.P, Nicolai N, Oldenburg J, Guidelines on Testicular Cancer: 2015 Update (2016) EUR UROL, 68 (6), 1054-1068.

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Angerri O, Lopez J.M., Sanchez-Martin F, Millan-Rodriguez F, Rosales A., Villavicencio H., Simple Laparoscopic Nephrectomy in Stone Disease: Not Always Simple (2016) J ENDOUROL, 30 (10), 1095-1098.

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Urology

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IF: 2.2700

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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IF: 3.5220

Locomotor System Research

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Lamas Gómez, Claudia María FGS
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Nadal Castells, Maria Josefa FGS
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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 pertrochanteric hip fractures.

Cartilage

- ▶ Regeneration of cartilage defects using tissue engineering and a matrix seeded with characterized allogeneic chondrocytes.

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.

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.

Theses

- ▶ Arantxa González Aránzazu. Antifibrinolíticos tópicos en artroplastia total de rodilla.

Awards

- ▶ Ramírez-Bermejo E, Millán Billi A, Gómez-Masdeu M, Ibañez M, Gelber PE. ¿Qué clasificación es más reproducible para valorar las fracturas de la meseta tibial en cortes de tomografía computada? Best oral communication. 53º Congreso de la Sociedad Española de Cirugía Ortopédica y Traumatología. La Coruña. 09-2016.

Grants Awarded in 2016

- ▶ Aguilera Roig, FJ. HESTAT "Estudio fase II/III, aleatorizado, controlado, simple ciego para evaluar la eficacia hemostática y la seguridad de TT-173 en aplicación tópica a pacientes sometidos a artroplastia de rodilla" June 2016 - Jan 2017.

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

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Scientific Production

Abat F, Sánchez JL, Martín-Nogueras AM, Calvo-Arenillas JI, Yajeya J, Méndez-Sánchez R, Monllau JC, Gelber PE. Randomized controlled trial comparing the effectiveness of the ultrasound-guided galvanic electrolysis technique (USGET) versus conventional electro-physiotherapeutic treatment on patellar tendinopathy. *Journal of Experimental Orthopaedic*. 2016 3:34.

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Carrera I, Gelber PE, Chary G, Gonzalez-Bal-lester M.A., Monllau J.C., Noailly J., Fixation of a split fracture of the lateral tibial plateau with a locking screw plate instead of cannulated screws would allow early weight bearing: a computational exploration (2016) *INT ORTHOP*, 40 (10), 2163-2169.

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García-Jimenez A., Prim N., Crusi X., Benito N., Septic arthritis due to *Clostridium ramosum* (2016) *SEMIN ARTHRITIS RHEU*, 45 (5), 617-620.

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Gelber PE., Petrica A.M., Isart A., Mari-Molina R., Monllau J.C., Corrigendum to "The magnetic resonance aspect of a polyurethane meniscal scaffold is worse in advanced cartilage defects without deterioration of clinical outcomes after a minimum two-years follow-up" [*Knee* (2015) 389-394] (2016) *KNEE*.

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Gines-Cespedosa A., Perez-Prieto D., Mune-ton D., Gonzalez-Lucena G., Millan A., De Zabala S., Busquets R., Influence of Hindfoot Malalignment on Hallux Valgus Operative Outcomes (2016) *FOOT ANKLE INT*, 37 (8), 842-847.

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Nasto LA, Perez-Romera AB, Shalabi ST, Quraishi NA, Mehdian H. Correlation between preoperative spinopelvic alignment and risk of proximal junctional kyphosis after posterior-only surgical correction of Scheuermann's kyphosis. *Spine J*. 2016 Apr; 16 (4 Suppl): S26-33.

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Perez-Prieto D., Torres-Claramunt R., Gelber PE., Shehata T.M.A., Pelfort X., Monllau J.C., Autograft soaking in vancomycin reduces

the risk of infection after anterior cruciate ligament reconstruction (2016) *KNEE SURG SPORT TR A*, 24 (9), 2724-2728.

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Roman E., Garcia-Galceran C., Torrades T., Herrera S., Marin A., Donate M., Alvarado-Tapias E., Malouf J., Nacher L., Serra-Grima R., Guarner C., Cordoba J., Soriano G., Effects of an exercise programme on functional capacity, body composition and risk of falls in patients with cirrhosis: A randomized clinical trial (2016) *PLOS ONE*, 11 (3).

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Torres-Claramunt R., Gelber P., Pelfort X., Hinarejos P., Leal-Blanquet J., Perez-Prieto D., Monllau J.C., Managing septic arthritis after knee ligament reconstruction (2016) *INT ORTHOP*, 40 (3), 607-614.

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Valera M., Ibanez N., Sancho R., Tey M., Reliability of Tönnis classification in early hip arthritis: a useless reference for hip-preserving surgery (2016) *ARCH ORTHOP TRAUM SU*, 136 (1), 27-33.

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Other Publications

- ▶ Becker R, Kerkhoffs G, Gelber PE, Denti M, Seil R. Editor of ESKA Instructional Course Lecture Book. Ed. Springer-Verlag London, 2016.
- ▶ Gelber PE, Aagard H. Organization: Type of grafts, conservation, regulation. In: Hulet C, Pereira H, Peretti G, Denti M. *Surgery of the meniscus*. Ed Springer-Verlag London, 2016.
- ▶ João Espregueira-Mendes, Moisés Cohen, Stefano Della Villa, Niek Van Dijk, Philippe Neyret, Joaquim Miguel Oliveira and Hélder Pereira, Tendon injuries to the lower limbs. Non-surgical treatment. Gelber PE, Abat F, Tzoanos G, Karlsson J. In: *The most frequent problems and injuries in football: What everyone should know*. Ed. Springer-Verlag London, 2016.

- ▶ Pereira H, Cengiz I, Silva-Cprreia J, Cucciarini M, Gelber PE, Espregueira-Mendes J, Oliveira JM, Reis RL. *Histology-Ultrastructure-Biology*. In: Hulet C, Pereira H, Peretti G, Denti M. *Surgery of the meniscus*, ed Springer-Verlag London, 2016.
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Multiple Sclerosis and Epilepsy Research

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Main Lines of Research

- ▶ Neuropsychological impairment in patients with multiple sclerosis.
- ▶ Pharmacogenetics in epilepsy.
- ▶ Neuropsychological impairment in juvenile myoclonic epilepsy.
- ▶ Basic research line.

Challenges

- ▶ Study cognitive evoked potentials in early detection of cognitive impairment in patients with radiologically isolated syndrome, clinically isolated syndrome and newly diagnosed multiple sclerosis.
- ▶ Study the effects of immunomodulatory and immunosuppressive treatments on the cognitive functions of patients with multiple sclerosis.
- ▶ Determine pharmacogenetic variations involving different responses to antiepileptic treatment.
- ▶ Study neuropsychological alterations in patients diagnosed with juvenile myoclonic epilepsy.

*TIF: 26.5330 **MIF: 4.4222

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cess to Endovascular Treatment in Remote Areas: Analysis of the Reperfusion Treatment Registry of Catalonia (2016) STROKE, 47 (5), 1381-1384.

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IF: 2.1030

Pain and Neurosciences

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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

TIF: 1.2310 **MIF: 1.2310*Scientific
Production**

Robleda G., Roche-Campo F., Membrilla-Martinez L., Fernandez-Lucio A., Villamor-Vazquez M., Merten A., Gich I., Mancebo J., Catala-Puigbo E., Banos J.E., Evaluation of pain during mobilization and endotracheal aspiration in critical patients (2016) MED INTENSIVA, 40 (2), 96-104.

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Publications**

- ▶ Melo M.C., Revuelta M.E., Santeularia T., Genové M., Català E. Management of transient radicular pain after receiving an epidural blood patch for headaches due to spontaneous intracranial hypotension. (2015) REV ESP ANESTESIOLOG REANIM, 62, 533-5.
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Nursing Care Research

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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

External Collaborations

- ▶ Gemma Robleda. Estudio multicéntrico de validez y fiabilidad de la Escala de Conductas Indicadoras de Dolor (ESCID) para medir el dolor en pacientes críticos, no comunicativos y sometidos a ventilación mecánica. Instituto de Investigación Clínica, Hospital Universitario Puerta de Hierro Majadahonda. Madrid. PI11-00766. Duration: 2012-15.

Active Grants

- ▶ Gemma Robleda Font. Evaluación del dolor en personas adultas sin capacidad de comunicación, un análisis bioético en las unidades de hospitalización de pacientes críticos. GRI-FOLS 2015. Fundació Víctor Grífols i Lucas. Duration: 2015-2016. 4,545.46 €.

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

Awards

- ▶ Gemma Robleda Font, Josep Eladi Baños Díez. Premio de Investigación Fundación Grifols. 2014-2016.
- ▶ Gemma Berga Congost. Factores clínicos predictores de retraso en la actuación del Código Infarto. Best oral communication. 37º Congreso Nacional de la Asociación Española de Enfermería en Cardiología. Valencia. Mayo 2016.

*TIF:18.8220 **MIF: 3.7644

Scientific
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Martinez-Momblan M.A., Gomez C., Santos A., Porta N., Esteve J., Ubeda I., Halperin I., Campillo B., Guillaumet M., Webb S.M., Resmini E., A specific nursing educational program in patients with Cushing's syndrome. (2016) ENDOCRINE, 53 (1), 199-209.

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Robleda G., Roche-Campo F., Sendra M.-A., Navarro M., Castillo A., Rodriguez-Arias A., Juanes-Borrego E., Gich I., Urrutia G., Nicolas-Arfelis J.M., Puntillo K., Mancebo J., Banos J.E., Fentanyl as pre-emptive treatment of pain associated with turning mechanically ventilated patients: a randomized controlled feasibility study. (2016) INTENS CARE MED, 42 (2), 183-191.

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Other
Publications

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Reproductive Health

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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.

Collaborations

Collaborations with other IIB Sant Pau Groups

- ▶ Genetic Diseases.

Active Grants

- ▶ Juan José Espinós Gómez. Impacto de la dieta hipocalórica y ejercicio en mujeres con obesidad que se sometan a un ciclo de FIV. PI11/02816. Instituto de Salud Carlos III. Duration: 2012-2016. 42,909 €.

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

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R., In women with gestational diabetes mellitus factors influencing growth have a larger effect on placental weight than on birth weight (2016) *EUR J OBSTET GYN R B*, 202, 60-65.

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Simo Gonzalez M., Calaf Alsina J., Terribas Sala N., Luqui Scarcelli N., Plana Borrás J., Polo Ramos A., Pregnancy beyond 65: report of a unique case and discussion of a controversial issue (2016) *EUR J CONTRACEP REPR*, 21 (6), 496-498.

IF: 1.6270

Translational Molecular Oncology

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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 and as potential therapeutic targets.
- ▶ Preclinical cancer models to study alternative strategy of treatments in leukemia.

Challenges

- ▶ Evaluate survival pathways 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 vivo" model of leukomogenesis.
 - Ajuts de suport als Grups de Recerca de Catalunya. Grup de Diagnòstic Hematològic. AGAUR 2014. 2014-SGR-383. Duration: 2014- 2016. 30,000 €.
- ▶ Ear, Nose and Throat Cancers (Xavier Leon): studies of HNSCC.

- ▶ Angiology, Vascular Biology and Inflammation (Luis Vila, Mercedes Camacho): studies of HNSCC.

External Collaborations

- ▶ Translational Research Laboratory, Institut Català d'Oncologia (ICO) - IDIBELL (Alberto Villanueva): studies of orthotopic tumor models.
- ▶ Cell signalling and checkpoints, Faculty of Medicine, IDIBAPS (Neus Agell and Montserrat Jaumot).

*TIF: 3.3760 **MIF: 3.3760

Scientific Production

Pavon M.A., Parreno M., Tellez-Gabriel M., Leon X., Arroyo-Solera I., Lopez M., Cespedes M.V., Casanova I., Gallardo A., Lopez-Pousa A., Mangues M.A., Quer M., Barnadas A., Mangues R., CKMT1 and NCOA1 expression as a predictor of clinical outcome in patients with advanced-stage head and neck squamous cell carcinoma (2016) HEAD NECK-J SCI SPEC, 38, E1392-E1403.
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*Total Impact Factor **Mean Impact Factor

Cardiac Surgery

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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.
- ▶ Elena Roselló Díez. Follow-up of sutureless aortic valve prosthesis Perceval S. Palex Medical, June 2014-September 2015.

*TIF: 10.6120 **MIF: 5.3060

Scientific
Production

Molina C.E., Llach A., Herraiz-Martinez A., Tarifa C., Barriga M., Wiegerinck R.F., Fernandes J., Cabello N., Vallmitjana A., Benitez R., Montiel J., Cinca J., Hove-Madsen L., Prevention of adenosine A2A receptor activation diminishes beat-to-beat alternation in human atrial myocytes (2016) BASIC RES CARDIOL, 111 (1), 1-15.
IF: 5.3060

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IF: 5.3060

Other
Publications

- ▶ Vilades Medel D., Munoz Guijosa C., Carreras Costa F., Padro Fernandez J.M., Pons Llado G., Leta Petracca R., Assessment of Radial Artery Graft Patency Through 256-slice Cardiac Computed Tomography, and the Mid-term Prognostic Impact of Graft Occlusion. (2015) REV ESP CARDIOL, 68 (9), 812-813.



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