



# 2010

## Scientific Report

Sant Pau Biomedical Research Institute



© Sant Pau Biomedical Research Institute (IIB Sant Pau), 2010  
Hospital de la Santa Creu i Sant Pau  
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# 2010

## Scientific Report

Sant Pau Biomedical Research Institute



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## Foreword



Jaume Kulisevsky  
IIB Sant Pau Manager

Having heralded the creation of the Sant Pau Biomedical Research Institute (IIB Sant Pau) in 2009, in reviewing 2010 we can say that this was the year when the research centre laid solid foundations. According to the Scimago Institutions Rankings (SIR) World Report 2010, the scientific activities of IIB Sant Pau place it among the top ten research centres in Spain, with strong prospects for growth and international projection in the coming years.

The evaluation process, which was implemented by the Carlos III Health Institute over 2010, culminated in IIB Sant Pau's formal accreditation, at the beginning of 2011, as a Ministry of Science and Innovation-approved healthcare research body. Accreditation in itself is an achievement, but more significantly, it marks the beginnings of IIB Sant Pau's commitment to research excellence.

The challenges we face are daunting, given the current financial crisis and the reduction in official budgets and in the number of research projects. However, serious efforts to foster research are crucial, not just as an investment in the future and in social wellbeing, but also as a driver for the Spanish economy.

Current difficulties should serve to encourage us to be even more competitive in obtaining funding, as the funding model for IIB Sant Pau

is not one of indefinite growth. Our research groups need to ensure excellence and it is of vital importance that our principal investigators encourage their teams to develop quality work on a day-to-day basis.

We should not overlook the fact that 2010 was also a key year in terms of consolidating the scientific-technical platforms that IIB Sant Pau places at the disposal of both its own researchers and external bodies. Particularly noteworthy in 2010 was the creation of an image analysis laboratory, which will shortly be launched as a platform.

The future of IIB Sant Pau as a research centre is intimately linked with the project to build new Hospital de la Santa Creu i Sant Pau Research Institute premises. In 2010, the Council of Europe Development Bank, the European Investment Bank and the Spanish Ministry of Health provided funding in the form of credits. In 2011, this construction project will involve the holding of a tender for architects and the award of the winning project.

In conclusion, I would like to thank all those forming part of IIB Sant Pau, first, for their commitment to the accreditation process of the past year, and second, for their day-to-day efforts to ensure that IIB Sant Pau continues to advance in the area of top-level research.

# 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 Care Centre
- > Public Health Agency of Barcelona

IIB Sant Pau was founded on 27 May 2009 as an association of healthcare entities carrying out their own research. Throughout 2010, IIB Sant Pau has become 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. Our success as a research centre ultimately translates to patient health.



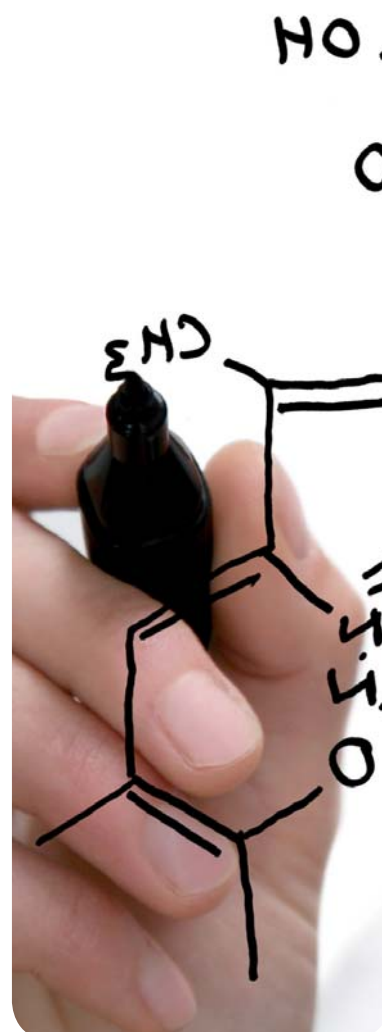


# Strategic Objectives

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

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

- > To promote and consolidate relationships and knowledge exchanges between and among Sant Pau researchers and 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.
- > To 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.
- > To organize and participate in continuous professional development, whether by developing teaching activities or arranging grant-aided stays abroad for researchers.
- > To 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.
- > To 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 and specialist care hospital performing patient care, teaching and research activities in the clinical, epidemiological and healthcare services fields. It offers accredited specialist and undergraduate health science training courses.



## Hospital de la Santa Creu i Sant Pau Research Institute

The Hospital de la Santa Creu i Sant Pau Research Institute (HSCSP Research Institute) promotes, manages and communicates biomedical research conducted in the Hospital de la Santa Creu i Sant Pau. 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 Hospital de la Santa Creu i Sant Pau, 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 the Autonomous University of Barcelona, is a non-profit foundation governed by a board of trustees formed by the UAB, the UAB Foundation and the Trade and Industry Mutual Society (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 the society and people to the challenges of the demographic change.

### Catalan Institute of Cardiovascular Sciences

The Catalan Institute of Cardiovascular Sciences 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.



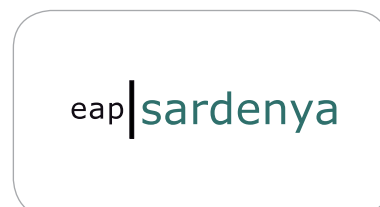
### Iberoamerican Cochrane Centre

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.



# IIB Sant Pau Scientific Structure

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

## The vertical line has five main areas of research:

- > 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.





# 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.

Diseases of this type include nutrition-related disorders, such as diabetes and obesity, and a large number of hereditary diseases, infectious diseases such as AIDS and tuberculosis and rare diseases that, while not well known, may have a devastating impact on those affected.



## Haematological and Oncological Diseases

A broad range of research is conducted in this area, particularly head-and-neck, breast, ovary, colorectal and haematological cancers, among others. Research covers a wide range of fields, with disciplines that include nanomedicine, new anticancer agents and predictive molecular markers, to name but a few.

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.





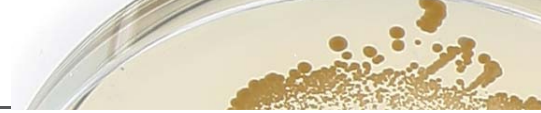
### Neurological and Mental Disorders

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



### Urology and Experimental Surgery

IIB Sant Pau promotes experimental surgery in the knowledge that this area has a promising future both as an independent research line and as a complement to general surgery. This interdisciplinary approach ensures valuable new insights, 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. The Puigvert Foundation is a leading centre in Spain for research of this type in the fields of andrology, urology and nephrology.



# Transversal Areas of Research

## Epidemiology, Public Health and Healthcare Services

Research into epidemiology and public health aims both 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.

The outcome of such research is the development and dissemination of systematic reviews and the search for evidence in clinical trials that study the effects of interventions. Healthcare data are collected systematically and analysed to gain an overview of current and emerging trends and to help identify priority actions.

One specific branch of research in epidemiology and public health is that which explicitly investigates social determinants of population health, disease and wellbeing, which requires attention to theories, concepts and methods that illuminate the intimate links between individual-level measures and social properties.



## 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. The development of new simulation models enables maximum data use during the conduct of clinical trials.





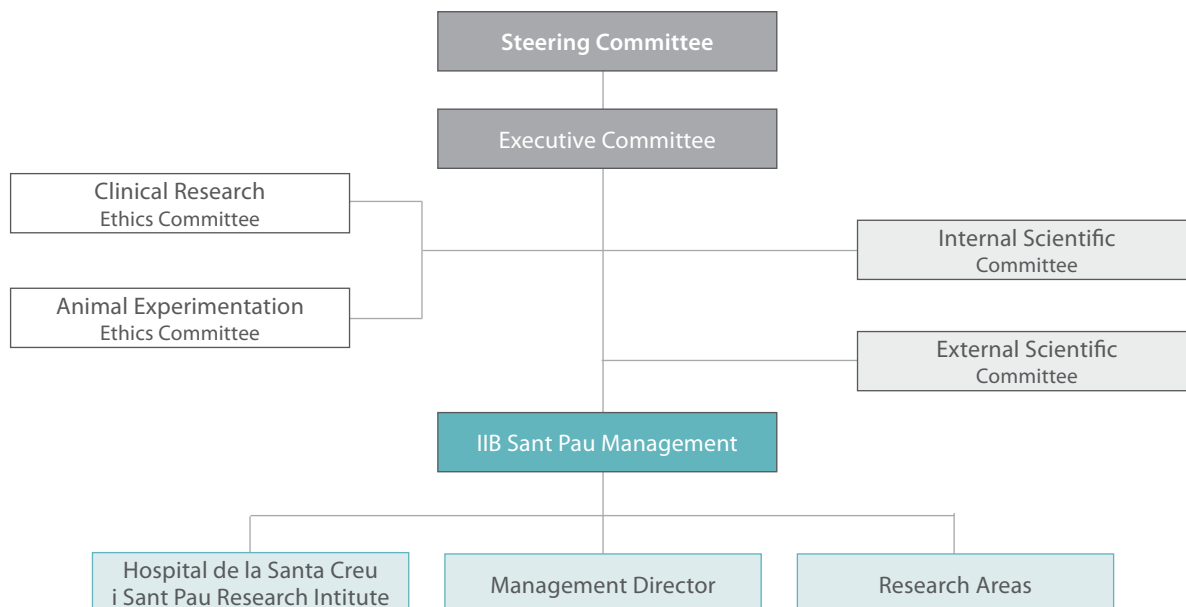
## Associated Groups



This line includes HSCSP Research Institute groups that do not form part of the IIB Sant Pau because they have not, as yet, been accredited by the External Scientific Committee. Nonetheless, their activities are listed in this report and their scientific production is taken into account in annual official calculations for the IIB Sant Pau.



# Organization Chart



## Steering Committee

### Chair

Dr. Jordi Varela  
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. Manuel Antonio López  
Autonomous University of Barcelona
- Dr. Lina Badimon  
Catalan Institute of Cardiovascular Sciences
- Mr. Martí Masferrer  
Puigvert Foundation
- Dr. Ramon Pla  
Blood and Tissue Bank
- Dr. Xavier Bonfill  
Iberoamerican Cochrane Centre
- Mr. Conrad Casas  
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. Jordi Sierra  
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 Sant Pau i la Santa Creu Healthcare Management Foundation
- Dr. Salvador Benito  
Hospital de la Santa Creu i Sant Pau Private Foundation
- Dr. Lina Badimon  
Catalan Institute of Cardiovascular Sciences
- Dr. Helena Isabal  
Puigvert Foundation
- Dr. Ricard Pujol  
Blood and Tissue Bank
- Dr. Carme Borrell  
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  
Manager of IIB Sant Pau**

Dr. Antoni Salvà  
Autonomous University of  
Barcelona - Ageing Institute

Dr. Carlos Brotons  
Barcelona-Sardenya Primary Care  
Centre

Dr. Lina Badimon  
Catalan Institute of Cardiovascular  
Sciences

Dr. Sílvia Mateu  
Puigvert Foundation

**2 members each representing  
IIB Sant Pau thematic areas****Cardiovascular Diseases**

Dr. Jordi Ordóñez  
Hospital de la Santa Creu i Sant Pau:  
Cardiovascular biochemistry

Dr. Luis Vila  
Hospital de la Santa Creu i Sant Pau  
Research Institute: Vascular  
biology and inflammation

**Genetic, Metabolic, Inflammatory  
and Infectious Diseases**

Dr. Cándido Juárez  
Hospital de la Santa Creu i Sant Pau:  
Inflammatory diseases

Dr. Carlos Guarner  
Hospital de la Santa Creu i Sant  
Pau: Cirrhosis complications

**Haematological and  
Oncological Diseases**

Dr. Josep Nomdedéu  
Hospital de la Santa Creu i Sant Pau:  
Haematological diagnosis

Dr. Jaime Prat  
Hospital de la Santa Creu i Sant Pau:  
Molecular cancer pathology

**Neurological and Mental  
Disorders**

Dr. Víctor Pérez  
Hospital de la Santa Creu i Sant Pau:  
Clinical psychiatry

Dr. Alberto Lleó  
Hospital de la Santa Creu i Sant Pau  
Research Institute: Neurobiology of  
dementia

**Uronephrology and Experimental  
Surgery**

Dr. José Ballarín  
Puigvert Foundation: Nephrology  
research

Dr. Manel Trias  
Hospital de la Santa Creu i Sant Pau:  
General and digestive surgery

**Epidemiology, Public Health  
and Healthcare Services**

Dr. Gerard Urrutia  
Hospital de la Santa Creu i Sant Pau:  
Clinical epidemiology and  
healthcare services

Dr. Manel Nebot  
Public Health Agency of Barcelona:  
Evaluation of public health policies  
and programmes

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

Dr. Joan García  
Blood and Tissue Bank: Generation  
of advanced treatments

Dr. José Manuel Soria  
Hospital de la Santa Creu i Sant  
Pau Research Institute: Genomics  
and bioinformatics for genetically  
complex disease

**External Scientific Committee**

Dr. José López-Barneo MD, PhD  
Physiology professor  
Institute of Biomedicine of Seville

Dr. Ángel María Carracedo MD, PhD  
Genomic medicine group  
researcher  
Institute of Legal Medicine  
Faculty of Medicine and Dentistry  
Santiago de Compostela  
University

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Haematology Group Researcher  
Faculty of Internal Medicine  
Murcia General University Hospital

Dr. José Palacios MD, PhD  
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Virgen del Rocío University  
Hospital (Seville)

Dr. Agustín Gómez de la Cámara  
MD, PhD  
Clinical Epidemiology Group  
Researcher  
Doce de Octubre Teaching  
Hospital (Madrid)

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

Dr. Jordi Alonso MD, PhD  
Health Services Research Unit  
Hospital del Mar Municipal  
Institute for Medical Research

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

# Financial Data

## Public/Private Income Summary 2003-2010



*In millions of euros*

*IIB Sant Pau management figures: HSCSP Research Institute*

## Balance sheet year ending 31 December 2010

<i>Income from activities</i>	11,294,391.05
<i>Services</i>	3,410,099.26
<i>Collaborations with partners and sponsors</i>	787,701.36
<i>Government grants</i>	6,222,798.88
<i>Other grants, donations and legacies</i>	1,052,037.09
<i>Repayment of grants, donations, etc.</i>	-178,245.54
<i>Stocks and supplies</i>	-1,346,631.65
<i>Material and equipment for activities</i>	-1,346,631.65
<i>Other income</i>	47,000.13
<i>Accessory income and management</i>	47,000.13
<i>Personnel expenditure</i>	-7,457,600.82
<i>Salaries</i>	-5,913,466.64
<i>Social security</i>	-1,544,134.18
<i>Other operating expenses</i>	-2,535,807.10
<i>External services</i>	-2,495,249.54
<i>Leases and rates</i>	0.00
<i>Repairs and maintenance</i>	-111,030.17
<i>Freelance services</i>	-419,811.29
<i>Insurance</i>	-58,606.99
<i>Banking</i>	-46,805.40
<i>Sundry</i>	-246.65
<i>Other services</i>	-1,858,749.04
<i>Taxes</i>	-25,635.87
<i>Loss, deterioration and variation in provisions for operations</i>	-4,998.87
<i>Other operating expenses</i>	-9,922.82
<i>Depreciation of fixed assets</i>	-1,015,362.86
<i>Grants, donations and bequests transferred to results</i>	807,418.48
<i>Other results</i>	-36,996.09
<i>Incidental expenses</i>	-128,926.20
<i>Incidental income</i>	91,930.11
<b>Total</b>	<b>-243,588.86</b>
<i>Financial income</i>	365,347.52
<i>Negotiable costs</i>	365,347.52
<i>Third parties</i>	365,347.52
<i>Financial expenditure</i>	-123,554.88
<i>For debts with third parties</i>	-123,554.88
<i>Exchange differences</i>	1,796.22
<b>Total</b>	<b>243,588.86</b>
<b>INCOME BEFORE TAX</b>	<b>0.00</b>
<b>INCOME FOR THE YEAR</b>	<b>0.00</b>

# Scientific Outcomes

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

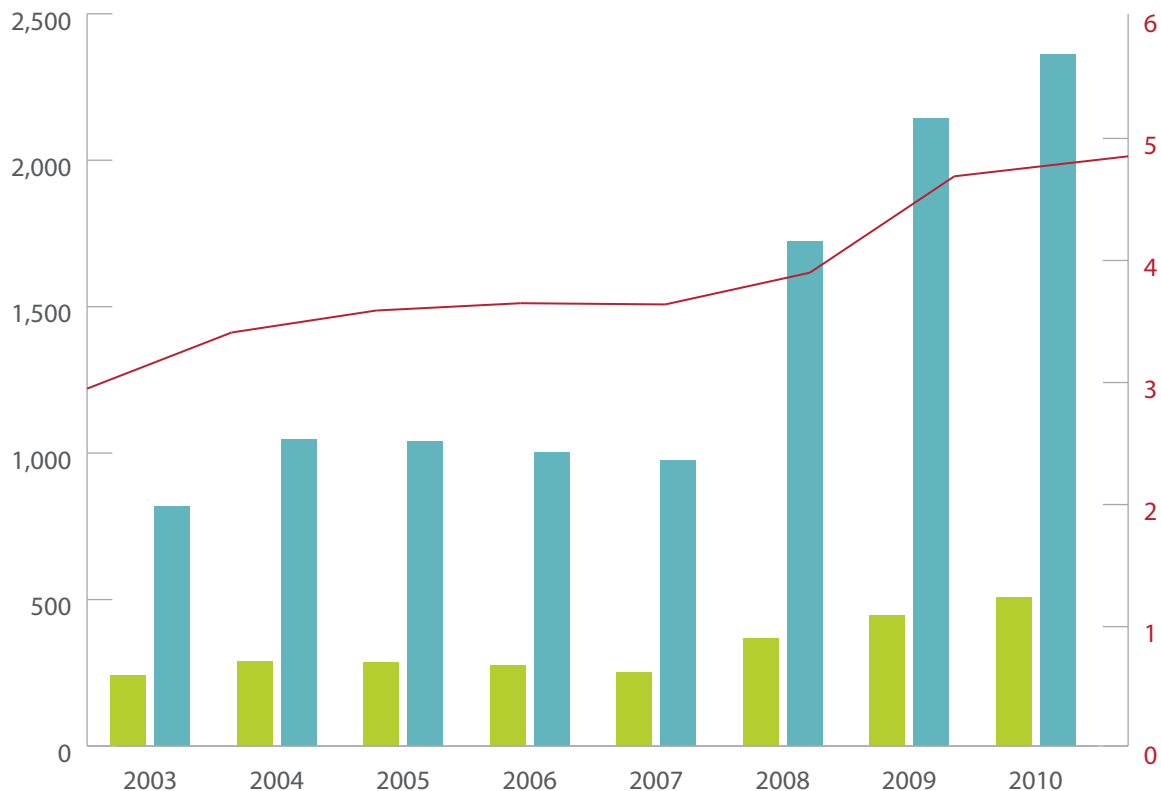
- > **Publications with an Impact Factor:** This figure shows IIB Sant Pau publications with an impact factor, one of the most important indicators used to identify the relevance of a science journal in its field and to give an approximate idea of the quality of the publications of researchers.
- > **Publications 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.





# Publications with an Impact Factor

## Production status

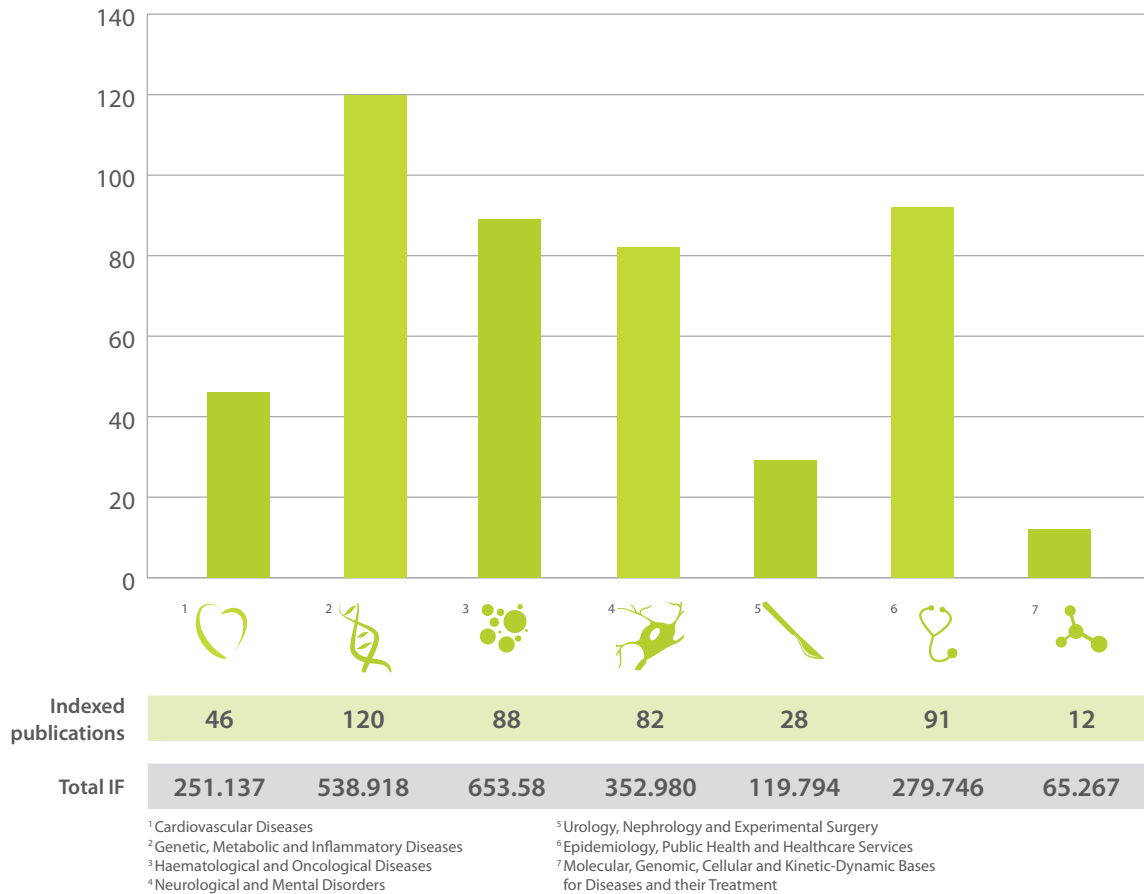


Publications	240	289	285	275	250	367	461	514
Total IF	819.35	1,046.16	1,040.62	1,001.03	975.36	1,722.76	2,158.532	2,448.877
Mean IF	3.41	3.59	3.65	3.64	3.9	4.69	4.68	4.78

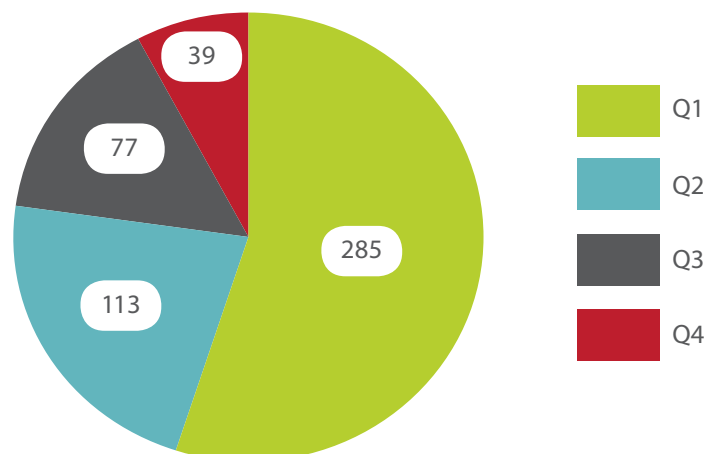


# Publications by Thematic Area

## Indexed publications



# Publications by Quartile



# Research Resources

Centre	Active		Granted	
	2009	2010	2009	2010
AGAUR (Catalan Agency for University and Research Support Management)	0	11	11	0
European grants	10	7	1	2
American grants	1	1	0	0
CIDEM (Innovation and Business Development Centre) Catalan Government	1	0	0	0
Caixa Tarragona	0	0	0	1
CNIC (National Cardiovascular Research Centre)	1	1	0	0
COIB (Official College of Nurses of Barcelona)	2	4	2	4
FEA (Spanish Arteriosclerosis Society)	2	2	0	0
FIPSE (Foundation for AIDS Research and Prevention in Spain)	3	2	0	0
Genoma España (Spanish Genome Foundation)	1	1	0	0
Caixa Navarra	0	0	0	1
TV3 Marathon Foundation	16	13	2	3
Mutua Madrileña Foundation	6	5	0	0
Farmaindustria	0	0	0	1
MAPFRE Foundation	0	1	0	2
Spanish Ministry of Science and Innovation Carlos III Health Institute	112	109	26	15
Spanish Ministry of Science and Innovation	8	7	1	4
Government Delegation for the National Drugs Plan	1	1	1	0
Spanish Ministry of Health and Social Policy	0	4	5	5
Spanish Ministry of Industry, Tourism and Commerce (Plan Avanza)	0	2	2	0
SCFC (Catalan Clinical Pharmacy Society)	1	0	0	0
SEOM (Spanish Medical Oncology Society)	0	1	1	0
SEPAR (Spanish Society of Pneumology and Thoracic Surgery Society)	2	1	0	0
SERAM (Spanish Medical Radiology Society)	2	1	0	1
GEIS (Spanish Sarcoma Research Group)	0	1	1	0
Preparados Alimenticios SA (GALLINA BLANCA) Henufood Project	0	0	0	1
	<b>169</b>	<b>175</b>	<b>53</b>	<b>40</b>

Source: Sant Pau Research Institute

# Research Training

Centre	Type of grant	Active		Granted	
		2009	2010	2009	2010
AGAUR (Catalan Agency for University and Research Support Management)	Renewals of the grants programme for researcher training	5	4	2	2
	Study grants for outside Catalonia	1	0	0	1
	Support for doctoral theses in Catalan	1	0	0	0
	Study grants	1	0	0	0
Catalan Department of Health	Stabilization agreement	5	5	0	0
	Stabilization agreement for support technicians	1	1	0	0
Catalan General Directorate for Research	Programme i3 agreement	2	2	0	0
Spanish Ministry of Science and Innovation	Juan de la Cierva	1	1	0	2
	Research staff training (FPI)	0	0	0	1
	University teacher training (FPU)	0	0	0	1
Spanish Ministry of Science and Innovation – ISCIII (Carlos III Health Institute)	Predocctoral grants for research training	4	6	2	2
	Miguel Servet contracts for national health service researchers	4	5	1	1
	Sara Borrell postdoctoral research training contracts	3	4	1	1
	Río Hortega post-training contracts for specialist healthcare personnel	7	6	1	1
	Contracts for support technicians for national health service research	3	3	1	0
HSCSP Management Foundation	Contracts related to the historical HSCSP premises (MIA 2010)	0	0	0	4
		<b>38</b>	<b>37</b>	<b>8</b>	<b>16</b>

# Doctoral Theses

Institution	Candidate	Thesis title	Director(s)	Defended at
HSCSP Research Institute	Anna Llach	Role of the sarcoplasmic reticulum in the regulation of contraction in isolated cardiac myocytes from the teleost fish rainbow trout ( <i>Oncorhynchus mykiss</i> )	Leif Hove-Madsen, Lluís Tort	Department of Cell Biology, Physiology and Immunology. Faculty of Medicine. Autonomous University of Barcelona (UAB)
CIBERER	Juliana Salazar	Study of <i>crabp2</i> gene variability in lipid metabolism and the influence of retinoic acid in the vascular endothelium	Josep Ribalta	Lipids and Arteriosclerosis Research Unit. Department of Medicine and Surgery. Faculty of Medicine and Health Sciences. Rovira i Virgili University (URV)
HSCSP Research Institute	Laia Paré	Pharmacogenetics in the treatment of colorectal cancer	Montserrat Baiget	HSCSP Genetics Department, Autonomous University of Barcelona (UAB)
HSCSP Research Institute	Karol Diestra	Characterization of genetic environment of the <i>bla</i> ESBL genes and associated plasmids in circulating strains of <i>Escherichia coli</i> and <i>Klebsiella pneumoniae</i> in Spain	Ferran Navarro	Microbiology Service, Department of Genetics and Microbiology. Autonomous University of Barcelona (UAB)
CIBERNED	Cristina Guardia	Genetic and pharmacological manipulation of the gamma-secretase complex: implications for Alzheimer disease	Alberto Lleó, Isabel Illa	Autonomous University of Barcelona (UAB)

Institution	Candidate	Thesis title	Director(s)	Defended at
UPC	Sergio Romero	Reduction of artefacts in EEG signals using new automatic filtering techniques based on blind source separation	Miguel A. Mañanas, Manel Barbanoj	Technical University of Catalonia (UPC)
HSCSP	Joaquim Soler	Application of group dialectical behaviour therapy to the borderline personality disorder	Víctor Pérez, Enric Álvarez	Autonomous University of Barcelona (UAB)
Puigvert Foundation	Lluís Guirado	Justification for the use of suboptimal kidney transplant donors based on our experience. Long-term results	Ricard Solà	Autonomous University of Barcelona (UAB)
Puigvert Foundation	Sheila Santín	Molecular study of corticoreistant nephrotic syndrome	Elisabet Ars, Roser Torra	Autonomous University of Barcelona (UAB)
CIBER	Mariona Pons	Breast cancer screening: social inequalities by country of origin and social class and impact on mortality	Carme Borrell	Pompeu Fabra University (UPF)
ASPB	Ana M. Novoa	Effectiveness of road safety interventions in Spain	Catherine Pérez, Carme Borrell	Pompeu Fabra University (UPF)
HSCSP Research Institute	Alfonso Buil	Variance component linkage analysis applied to thrombotic disease	José Manuel Soria	Faculty of Informatics. Technical University of Catalonia (UPC)
ICCC	Francesc Xavier Duran	Effects of two control strategies for vascular wall cardiovascular risk	Lina Badimon	Faculty of Biology, University of Barcelona (UB)

# Research Support Services

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

**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 the IIB Sant Pau.

**The IIB Sant Pau has 12 services that support of research:**

- > Clinical Trial Documentation Management
- > Research Institute Management
- > Tumour Bank
- > 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 Department
- > Transfer and Innovation Unit
- > Author Editing
- > Communications Coordination Team
- > Clinical Research Ethics Committee Secretariat

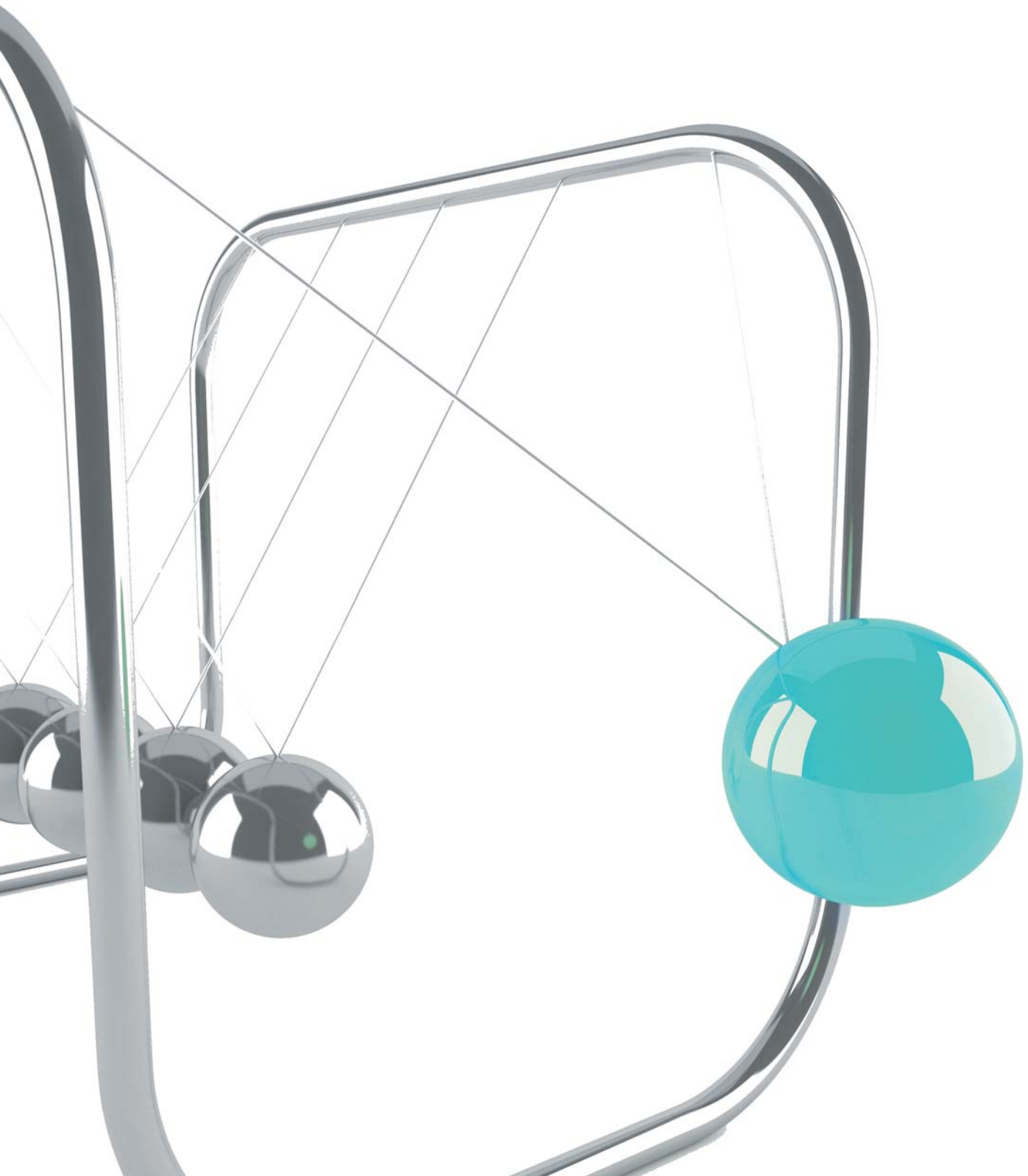
**Scientific and Technical Service Platforms:** The main aim of these support services is to manage, allocate and optimize the top-level research resources available to IIB Sant Pau. They provide researchers with support and scientific/technical assessment and advise on the most appropriate methods to prepare samples and to plan optimal work flows for each objective. They also promote experimental development with equipment, infrastructure and specialist staff.

**IIB Sant Pau has six platforms:**

- > Genomics and Transcriptomics Platform
- > Proteomics Platform
- > Functional and Cellular Analysis Platform
- > Microscopy and Immunohistochemistry Platform
- > Innovation Platform
- > Biobank

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





# Research Support Services



**Coordinator:**  
M. Teresa Mas  
mmas@santpau.cat

**Staff:**  
Pilar Matamoros  
M. Àngels Piera

## 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.
- > Supervise data processing and management.
- > Coordinate researchers and monitors and 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.
- > Shipment of biological samples to Central Laboratory Services.

**Facilities:**

- Several areas have been designated to conduct these functions:
- > Head office and administration.
  - > Data processing and management.
  - > Clinical trial monitoring meeting rooms.
  - > Documentation filing.
  - > Cold room.



**Coordinator:**  
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**Staff:**  
Management Control Unit  
Soraya González, Sandra Parera  
Laura San Martín

Administrative-Financial Unit  
Declan de la Fuente, Núria García  
Juana Granero, Cristina Requena

Human Resources Unit  
Rafael Fernández

Projects Unit  
Fabiola Fernández, Eva José,  
Eva Rodríguez

General Secretariat  
Amanda García, Rosa M. García,  
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 fulfilled entered into with government bodies 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.





**Manager:**  
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**Coordinators:**  
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Íñigo Espinosa  
iespinosa@santpau.cat

**Staff:**  
María Jesús Nagel  
Jorge Pena

## Tumour Bank

### 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 meets current regulations and is scientifically, technically and ethically viable).

### Equipment:

- > 3 fast-freeze Histobaths® (isopentane bath, stored at -50°C).
- > 1 cryostat.
- > Storage and cryopreservation systems: 2 freezers -80°C and 1 deposit for liquid nitrogen.
- > 1 manual tissue arrayer.



**Coordinator:**  
Jordi Virgili  
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**Staff:**  
Susana Daniel  
Catalina Pérez

## Quality and Information Systems Unit

### Functions:

- > General:
  - Coordinate the contingency plan for the HSCSP Research Institute premises.
  - Provide support in drawing up the functional plan for the Hospital de la Santa Creu i Sant Pau Research Institute's new building.
- > Quality:
  - Draw up the quality plan.
  - Coordinate accreditation processes involving IIB Sant Pau.
  - Implement ISO 9001/2008 and Good Clinical Practice and Good Laboratory Practice quality standards.
  - Provide support in drawing up, updating and distributing standard operating procedures (SOPs) associated with the Quality Assurance Programme.
  - Establish evaluation mechanisms for quality, ethics, and good scientific practice at IIB Sant Pau.
- > Information systems:
  - Provide support to IIB Sant Pau management in applications for public and private funding.
  - Monitor IIB Sant Pau indicators.
  - Coordinate the implementation of Spanish personal data protection legislation with respect to records containing personal data held by IIB Sant Pau and participate in the Security Regulations Committee.
  - Manage the general insurances for the HSCSP Research Institute: researchers, equipment, civil liability and operations.
  - Coordinate the preparation of statistical reports for different bodies.

# Research Support Services



## Coordinator:

Montserrat Ribas  
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## Supervisor in charge:

Josep Julve  
jjulve@santpau.cat

## 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. The staff in charge supervise the compliance of laws, guidelines and regulations established by regulatory body.
- > It provides the necessary services for studies in the following:
  - In vitro labelling of proteins, lipoproteins and liposomes.
  - Cellular proliferation and toxicity.
  - Nucleic acid labelling.
  - Immunoassay techniques.
  - Determination of enzymatic activities using radiolabeled 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 cabinet for gas extraction.
- > 1 vertical laminar air flow cabinet for cell cultures.
- > 1 CO<sub>2</sub> incubator for cell cultures.



**Coordinator:**  
Manel Barbanoj † (December 2010)

## 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 Good Clinical Practice 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.
- > Filing.

#### Management, administration and data processing:

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

# Research Support Services



## Central Clinical Research and Clinical Trials Unit (UCICEC Sant Pau)

### Functions:

Comprehensive methodological, regulatory, administrative, financial and practical support to researchers developing independent research projects (not supported by the pharmaceutical industry).

### Coordinator:

Rosa M. Antonijoan  
rantonijoana@santpau.cat

### Staff:

3 advanced research technicians  
4 research technicians  
1 administrative officer

### Knowledge Management:

- > Single input window for independent studies.
- > Liaison between researchers and technical units.
- > Support and supervision.
- > Adverse events notification.
- > Knowledge Management:
  - Project feasibility studies.
  - Project needs identification.
  - Dimensionality studies for new projects.
  - Documentation: protocols, final reports.
- > Activities arising from research:
  - Spin-off project identification.
  - Strategic partnerships with other entities.
  - Publication plans.
- > Training needs identification.

### Methodological and Statistical Support:

- > Advice on study design.
- > Data entry.
- > Data processing.
- > Statistical report preparation.
- > Electronic CRF validation and management.
- > Documentation and reports.

### Documentation, Archives, Monitoring and Follow-up:

- > Document preparation support: EUDRA / applications / monitoring.
- > Monitoring.
- > Support with applications: Spanish Medicines and Health Products Agency, clinical research ethics committees, healthcare authorities.
- > Master file custody for sponsors.
- > Insurance policy management.
- > Communications with clinical research ethics committees, the Generalitat de Catalunya and the Spanish Medicines and Health Products Agency.

### Pharmacy:

- > Drug reception, distribution and return.
- > Drug preparation, masking and labelling.
- > Liaison for external preparation of clinical trial drugs.

### Management and financial management:

- > Financial management.
- > Budgeting and financial monitoring.
- > Contract management.
- > Personnel management.



**Coordinator:**  
M. Antònia Rubio  
arubioc@santpau.cat

**Staff:**  
Margarita Domingo  
Luis Garcia

## Animal Housing Department

### Functions:

- > Produce different small rodent strains in-house for research and teaching purposes.
- > Monitor mating, mating plugs, pregnant females and weaning.
- > Provide healthcare.
- > Manage the purchase and transportation of animals from domestic and international breeding and supply centres.
- > Advise the animal welfare expert.
- > Receive and house incoming animals and subsequently deliver them to users once the quarantine period is over and health requirements are met.
- > Perform periodic health checks with sentinel screening in all rooms.
- > House and maintain experimental animals while ensuring their welfare.
- > Maintain monitoring protocols.
- > Feed animals according to experimental protocols.
- > Ensure the hygiene and safety of facilities and equipment.
- > Provide support in animal surgery, anaesthesia and euthanasia.
- > Manage waste disposal.
- > Supply laboratory material and collect samples.
- > 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:

- > Mice rooms (2), total capacity 2400.
- > Surgery.
- > Rat room, capacity 200.
- > CO<sub>2</sub> euthanasia equipment.
- > Quarantine room.
- > Treatment room.
- > Wash room.
- > Office.
- > Clean-storage room.
- > Shower.
- > Standard storeroom.
- > WC.

# Research Support Services



innovacio@iibsantpau.cat

**Coordinator:**  
Ildefonso Hervás  
ihervas@santpau.cat

**Staff:**  
Carlos López  
Carlos Enrique

## Transfer and Innovation Unit

**Functions:**

- > Promote training and an innovative spirit.
- > Develop a framework for innovation management.
- > Evaluate technological opportunities originating with hospital staff, detect inventions and assess their protection, transfer and commercialization.
- > Manage the intellectual property of the institution.
- > Establish links with the business sector.
- > Assist researchers in developing projects with companies.
- > Develop technology platforms.



**Coordinator:**  
Carolyn Newey  
cnewey@santpau.cat

## Author Editing

**Functions:**

- > Review and edit research papers, abstracts, posters, presentations and other scientific documents written in English.
- > Assist in the preparation and delivery of presentations, lectures, speeches, etc in English for meetings, conferences and similar events.



**Coordinators:**  
Pablo Ayesta  
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Sara Garcia  
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**Staff:**  
Abraham del Moral  
Santi Porta

## Communications Coordination Team

**Functions:**

- > Coordinate IIB Sant Pau communications.
- > Prepare IIB Sant Pau annual reports and other communication materials.
- > Provide an effective news distributes 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.

**Coordinators:**

Milagros Alonso  
malonsoma@santpau.cat

**Administrative Staff:**

Vanesa Mansilla  
Marisol Mogollón  
Albert Querol

## Clinical Research Ethics Committee Secretariat

The HSCSP Research Ethics Committee is an independent agency whose mission is to protect the rights, safety and wellbeing of persons participating in the 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 Standard Operating Procedures of the Committee.

# Scientific and Technical Service Platforms



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**Coordinator:**  
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**Technical Staff:**  
Genomics Laboratory:  
Eva Companys  
ecompanysa@santpau.cat

Transcriptomics Laboratory:  
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eserrano@santpau.cat

## Genomics and Transcriptomics Platform

### > GENOMICS LABORATORY

**Functions:**

- > Sequencing:
  - Mutation analysis.
  - Identification of microorganisms.
- > Fragment analysis:
  - Instability of microsatellites.
  - Loss of heterozygosity in pathological processes.
- Detection and genotyping of mutations.
- Gene copy number quantification.
- Methylation.
- Polymorphism and disease associations.

**Equipment:**

- > Ion Torrent Personal Genome Machine.
- > Ion OneTouch(TM) System.

### > TRANSCRIPTOMICS LABORATORY

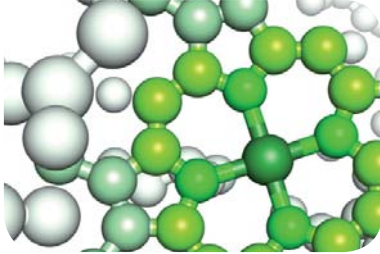
**Functions:**

- > 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.
- > Real time quantitative PCR ABI 7900HT.
- > Bioanalyzer 2100.
- > Nanodrop 2000.





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**Coordinator:**  
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**Technical Staff:**  
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ranton@santpau.cat

**Staff:**  
Silvia Pérez-Pujol

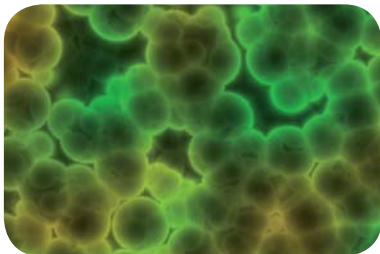
## Proteomics Platform

### Functions:

- > Analysis of mass spectrometry proteomics.
- > Identification of differentially expressed proteins in pathological conditions, treatments, etc.
- > Post-translational modifications.
- > Relative quantification of proteins in pathological conditions.

### Equipment:

- > MALDI-TOF-TOF (Bruker).
- > Nano-HPLC (Agilent) for offline coupling with MALDI-TOF-TOF.
- > Nano-HPLC-ESI ion trap.
- > Freedom Evo (Tecan) robot for sample preparation.
- > Isoelectric focusing (Agilent 3100 OFFGEL).



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**Coordinator:**  
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**Technical Staff:**  
Flow Cytometry Laboratory:  
Marta Soler  
msolerC@santpau.cat

## 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. Relative and absolute presence.
- Production of mediators.
- Detection of minority populations.

- > Cell separator:  
In sub-populations of separated cells:
  - Microarrays.
  - Western blot.
  - Cell cultures.
  - RT PCR.

#### Equipment:

- > FACSCalibur conventional flow cytometry.
- > Cytomics FC500 conventional flow cytometer (Beckman Coulter).
- > Flow cytometry FACSAria cell sorter.



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**Coordinator:**  
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**Technical Staff:**  
Immunohistochemistry Laboratory:  
María Madero

Microscopy Laboratory:  
Cristina Guardia

Carme Casal  
ccasal@santpau.cat

## Microscopy and Immunohistochemistry Platform

### > IMMUNOHISTOCHEMISTRY LABORATORY

**Functions:**

- > Tissue processing.
- > Microtome paraffin-block cutting.
- > Automatic immunostaining.
- > Staining (Giemsa, haematoxylin-eosin).
- > Image acquisition and analysis using high-resolution colour microscopy and specialist software.

**Equipment:**

- > Tissue processor (Sakura).
- > Paraffin bath (Sakura).
- > Microtome (Microm).
- > Immune autostainer AS48 (Dako).
- > Autostainer (Sakura).

### > 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).

**Equipment:**

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



**Coordinator:**  
Ildefonso Hervás  
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## Innovation Platform i2Health Sant Pau

**Functions:**

- > Promote the development of information and communication technologies in the health system (e-health).
- > Support investigators undertaking research and innovation projects in e-health.
- > Provide a dedicated space within the hospital and create a living lab by bringing together medical staff, engineers, technologists and industry.





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**Coordinator:**  
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**Technical Staff:**  
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**Coordinator:**  
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**Technical Staff:**  
Image Analysis Laboratory:  
Rosa Anton  
ranton@santpau.cat

Other Equipment:  
Elena Serrano  
eserrano@santpau.cat

## Biobank

### Functions:

- > Sample collection and processing for the biobank.

### Grants:

- > HSCSP Research Institute. Biobank Network 2009. RD09/0076/00081. Amount: €138,000.00.

## 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).
- > IVIS Spectrum (Caliper) in vivo imaging system (2D and 3D fluorescence and bioluminescence).
- > Nanodrop 2000 (Thermo).
- > Infinite 200 (Tecan) microplate reader: spectrophotometer, fluorometer, luminometer.

#### Grants:

- > HSCSP Research Institute. In vivo optical image equipment: IVIS Spectrum and add-ins for the new laboratory. IF09/3651. Amount: €300,129.
- > HSCSP Research Institute. Innovation Network 2009. RD09/0077/00075. Amount: €123,414.
- > Kulisevsky, J. Expert system integrating tele-assistance and -medicine to prevent dependence and promote autonomy of the elderly in the home environment. e-Health Platform for Healthy Ageing. Plan Avanza. TSI 020110-2009-444. Amount: €60,848.55.



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## AREA 1

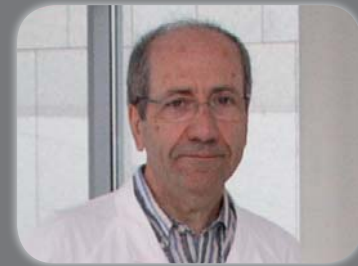
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# Clinical and Translational Cardiology

TEAM



**Coordinator**  
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Esther Jorge	IR-HSCSP	Antoni Serra	HSCSP	Laia Anglí	IR-HSCSP

Main lines of research

- Cardiac electrophysiology and arrhythmias.
- Heart failure.
- Ischaemic heart disease.
- New diagnostic techniques.

Challenges

- Describe cardiac repolarization (T wave genesis) in the isolated perfused human heart (Langendorff).
- Develop new drugs to treat atrial fibrillation based on involvement of atrial receptors for adenosine.
- Set up basic research lines related to cardiac physiology in experimental models.
- Develop new diagnostic techniques for myocardial involvement based on myocardial electrical impedance measurements.

Active grants

- Carreras, F. Advanced computer technologies for the healthcare sector. Period: January 2010-February 2011. Expedient: TSI-020400-2009-83.
- Cinca, J. Electrophysiological and molecular characterization of cardiac repolarization in the isolated human heart. Period: March 2009-March 2012. Expedient: 08/0630.
- Cinca, J. Remodelling of adenosine receptors in human atrial fibrillation: A novel mechanism for atrial arrhythmogenesis. Period: January 2008-December 2011. Expedient: 08/CNIC-12.
- Cinca, J. Remodelling of adenosine receptors in human atrial fibrillation: A novel mechanism for atrial arrhythmogenesis. January 2008-January 2011. 08/CNIC-12 COOR.
- Cinca, J. REDINSCOR. Coordinated project. Period: January 2007-December 2011. Expedient: RD06/0003.
- Madsen, L. Role of adenosine receptors as intracellular calcium modulators in human atrial myocytes: a new physiopathological mechanism in atrial fibrillation. Period: October 2007-December 2010. Expedient: SAF07/60174.





\*TIF: 45.069 \*\*MIF: 2.503

## INDEXED PUBLICATIONS

- 01** Wiegerinck R.F., Gálvez-Monton C., Jorge E., Martnez R., Ricart E., Cinca J. Changes in QRS duration and R-wave amplitude in electrocardiogram leads with ST segment elevation differentiate epicardial and transmural myocardial injury. *Heart Rhythm*; 7(11):1667-1673  
**IF: 4.246**
- 02** Nikus K., Pahlm O., Wagner G., Birnbaum Y., Cinca J., Clemmensen P., Eskola M., Fiol M., Goldwasser D., Gorgels A., Sclarovsky S., Stern S., Wellens H., Zareba W., de Luna A.B. Electrocardiographic classification of acute coronary syndromes: a review by a committee of the International Society for Holter and Non-Invasive Electrocardiology. *J. Electrocardiol.*; 43(2):91-103  
**IF: 1.109**
- 03** Cabello B., Borrás X., Carreras F., Thomas B., Leta R., Pons-Llado G. Improvement in the measurement technique of pulmonary artery pressure by Doppler echocardiography with contrast in chronic obstructive pulmonary disease. *Med. Intensiv.*; 34(8):506-512  
**IF: 1.496**
- 04** Borrás X., Murga N., Fiol M., Pe-dreira M. Progress in clinical cardiology: Surface electrocardiography, cardiovascular disease in women, and novel therapies. *Rev. Esp. Cardiol.*; 63(SUPPL.1):3-16  
**IF: 2.157**
- 05** Claver E., Leta R., Pujadas S., Hidalgo A., Carreras F., Pons-Llado G. Evaluation of the left ventricle with three-dimensional echocardiography: Comparison with cardiac magnetic resonance. *Radiographics*; 52(6):534-540  
**IF: 2.76**
- 06** Li C.H., Carreras F., Leta R., Carbal-leira L., Pujadas S., Pons-Llado G. Mechanical left ventricular dys-synchrony detection by endocardium displacement analysis with 3D speckle tracking technology. *Int. J. Cardiovasc. Imaging*; 26(8):867-870  
**IF: 2.539**
- 07** Pujadas S., Vidal-Perez R., Hidalgo A., Leta R., Carreras F., Barros A., Bayes-Genis A., Subirana M.T., Pons-Llado G. Correlation between myocardial fibrosis and the occurrence of atrial fibrillation in hypertrophic cardiomyopathy: A cardiac magnetic resonance imaging study. *Eur. J. Radiol.*; 75(2):e88-e91  
**IF: 2.941**
- 08** Garcia-Barnes J., Gil D., Badiella L., Hernandez-Sabate A., Carreras F., Pujades S., Marti E. A normalized framework for the design of feature spaces assessing the left ventricular function. *IEEE Trans. Med. Imaging*; 29(3):733-745  
**IF: 3.545**
- 09** Kaski J.C., Fernandez-Berges D.J., Consuegra-Sanchez L., Fernandez J.M.C., Garcia-Moll X., Mostaza J.M., Cebada R.T., Juanatey J.R.G., Martinez G.G., Marrugat J. A comparative study of biomarkers for risk prediction in acute coronary syndrome-Results of the SIESTA (Systemic Inflammation Evaluation in non-ST-elevation Acute coronary syndrome) study. *Atherosclerosis*; 212(2):636-643  
**IF: 4.086**
- 10** Hove-Madsen L., Baudet S., Bers D.M. Making and using calcium-selective mini- and microelectrodes. *Method. Cell Biol.*; 99(C):67-89  
**IF: 1.877**
- 11** Roura S., Farre J., Hove-Madsen L., Prat-Vidal C., Soler-Botija C., Galvez-Monton C., Vilalta M., Bayes-Genis A. Exposure to cardiomyogenic stimuli fails to transdifferentiate human umbilical cord blood-derived mesenchymal stem cells. *Basic Res. Cardiol.*; 105(3):419-430  
**IF: 6.128**
- 12** Marti V., Vila M., Ginel A., de Rozas J.M.D. Purulent pericarditis complicated by cardiac tamponade due to *Streptococcus agalactiae*. *Rev. Medica Chile*; 138(4):519-520  
**IF: 0.366**
- 13** Gonzalez-Vilchez F., Almenar L., Arizon J.M., Mirabet S., Delgado J.F., Diez De Molina B., Gomez M., Paniagua M.J., Perez-Villa F., Roig E., Vazquez De Prada J.A. Temporal trends in the use of proliferation signal inhibitors in maintenance heart transplantation: A Spanish multicenter study. *Transplant. Proc.*; 42(8):2997-3000  
**IF: 0.993**
- 14** Molina B.D., Leiro M.G.C., Pulpon L.A., Mirabet S., Yanez J.F., Bonet L.A., Vilchez F.G., Delgado J.F., Manito N., Rabago G., Arizon J.M., Romero N., Roig E., Blasco T., Pascual D., De La Fuente L., Muniz J. Incidence and risk factors for non-melanoma skin cancer after heart transplantation. *Transplant. Proc.*; 42(8):3001-3005  
**IF: 0.993**
- 15** Crespo-Leiro M.G., Delgado J.F., Paniagua M.J., Vazquez de Prada J.A., Fernandez-Yanez J., Almenar L., Diaz-Molina B., Roig E., Arizon J.M., Alonso-Pulpon L., Garrido I.P., Sanz M.L., de la Fuente L., Mirabet S., Manito N., Muniz J. Prevalence and severity of renal dysfunction among 1062 heart transplant patients according to criteria based on serum creatinine and estimated glomerular filtration rate: Results from the CAPRI study. *Clin. Transplant.*; 24(4):E88-E93  
**IF: 1.751**
- 16** Guerra J.M., Rodriguez-Font E., Alonso-Martin C., Vinolas X. Integration of late-enhanced MRI and electroanatomical mapping for substrate ablation of poorly tolerated ventricular tachycardia. *Eur.pace*; 12(12):1793-1795  
**IF: 1.839**
- 17** Bazan V., Rodriguez-Font E., Vinolas X., Guerra J.M., Bruguera-Cortada J., Marti-Almor J. Atrial Tachycardia Originating From the Pulmonary Vein: Clinical, Electrocardiographic, and Differential Electrophysiologic Characteristics. *Rev. Esp. Cardiol.*; 63(2):149-155  
**IF: 2.157**
- 18** Taglieri N., Fernandez-Berges D.J., Koenig W., Consuegra-Sanchez L., Fernandez J.M.C., Robles N.R., Sanchez P.L., Beiras A.C., Orbe P.M.M., Kaski J.C., SIESTA Investigators (col. Garcia-Moll X.). Plasma cystatin C for prediction of 1-year cardiac events in Mediterranean patients with non-ST elevation acute coronary syndrome. *Atherosclerosis*; 209(1):300-305  
**IF: 4.086**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Thrombosis and Haemostasis

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Main lines of research

- Investigation of new genes and functional polymorphisms involved in venous and arterial thrombosis. GAIT-1 and GAIT-2 projects.
- Investigation of new anti-thrombotic drugs: thrombin inhibitors, 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.
- Introduction of the self-control/self-management model of oral anticoagulant treatment.

Challenges

- Complete recruitment of large families with thrombosis for the GAIT-2 project. The aim is to group 1,000 people who have developed thrombosis and with a negative thrombophilia workup.
- In new polymorphisms, study QTL detected in GAIT-1 families in relation to phenotypes of haemostasia with thrombosis risk (resistance to activated C protein, factor VIII, homocysteine, factor XII and others).
- Replicate the QTL related to thrombosis in GAIT-1 families with those detected in GAIT-2 families.
- Study new regions of the genome related to the variability of homocysteine levels, fibrinogen, Fc VIII, Fc XII and others, and apply results (functional polymorphisms) in cohorts of patients with venous and arterial thrombosis.
- Increase the present cohorts of patients with venous and arterial thrombosis.
- Continue collaboration with the RECAVA network of cardiovascular patients and with other European groups so as to apply GAIT project findings to cohorts of patients with venous and arterial thrombosis in Spain and other European countries.

Active grants

- Fontcuberta, J. Funds in support of Catalan research groups. Thrombosis and Haemostasis Group. Period: September 2009-December 2013. Expedient: 2009SGR 1147.
- Fontcuberta, J. RECAVA. Period: January 2007-December 2010. Expedient: RD06/0014/0016.
- Souto, J. Genetic bases for primary haemostasis phenotypes and the link with thrombosis. Period: January 2009-December 2011. Expedient: SAF08-01859.



## Awards

Best Oral Presentation Award on Congenital Coagulopathies presented at the 12th National Conference of the Spanish Thrombosis and Haemostasis Society, for Contribution of FXIII Val34Leu polymorphism as a risk factor for haematoma growth in patients with acute intracerebral haemorrhage. Award of the Spanish Thrombosis and Haemostasis Foundation in collaboration with the Real Victoria Eugenia Foundation.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Gretarsdottir S., Baas A.F., Thorleifsson G., Holm H., Den Heijer M., De Vries J.-P.P.M., Kranendonk S.E., Zeebregts C.J.A.M., Van Sterkenburg S.M., Geelkerken R.H., Van Rij A.M., Williams M.J.A., Boll A.P.M., Kostic J.P., Jonasdottir A., Jonasdottir A., Walters G.B., Masson G., Sulem P., Saemundsdottir J., Mouy M., Magnusson K.P., Tromp G., Elmore J.R., Sakalihasan N., Limet R., Defraigne J.-O., Ferrell R.E., Ronkainen A., Ruigrok Y.M., Wijmenga C., Grobbee D.E., Shah S.H., Granger C.B., Quyyumi A.A., Vaccarino V., Patel R.S., Zafari A.M., Levey A.I., Austin H., Girelli D., Pignatti P.F., Olivieri O., Martinelli N., Malerba G., Trabetti E., Becker L.C., Becker D.M., Reilly M.P., Rader D.J., Mueller T., Dieplinger B., Haltmayer M., Urbonavicius S., Lindblad B., Gottsater A., Gaetani E., Pola R., Wells P., Rodger M., Forgie M., Langlois N., Corral J., Vicente V., Fontcuberta J., Espana F., Grarup N., Jorgensen T., Witte D.R., Hansen T., Pedersen O., Aben K.K., De Graaf J., Holewijn S., Folkersen L., Franco-Cereceda A., Eriksson P., Collier D.A., Stefansson H., Steinthorsdottir V., Rafnar T., Valdimarsson E.M., Magnadottir H.B., Sveinbjornsdottir S., Olafsson I., Magnusson M.K., Palmason R., Haraldsdottir V., Andersen K., Onundarson P.T., Thorgeirsson G., Kiemeny L.A., Powell J.T., Carey D.J., Kuivaniemi H., Lindholt J.S., Jones G.T., Kong A., Blankensteijn J.D., Matthiasson S.E., Thorsteinsdottir U., Stefansson K. Genome-wide association study identifies a sequence variant within the DAB2IP gene conferring susceptibility to abdominal aortic aneurysm. *Nature Genet.*; 42(8):692-697  
**IF: 36.377**
- 02** Buil A., Tregouet D.-A., Souto J.C., Saut N., Germain M., Rotival M., Tiret L., Cambien F., Lathrop M., Zeller T., Alessi M.-C., De Cordoba S.R., Munzel T., Wild P., Fontcuberta J., Gagnon F., Emmerich J., Almasly L., Blankenberg S., Soria J.-M., Morange P.-E. C4BPB/C4BPA is a new susceptibility locus for venous thrombosis with unknown protein S-independent mechanism: Results from genome-wide association and gene expression analyses followed by case-control studies. *Blood*; 115(23):4644-4650  
**IF: 10.558**
- 03** Sabater-Lleal M., Chillon M., Mordillo C., Martinez A., Gil E., Mateo J., Blangero J., Almasly L., Fontcuberta J., Soria J.M. Combined cis-regulator elements as important mechanism affecting FXII plasma levels. *Thromb. Res.*; 125(2):e55-e60  
**IF: 2.372**
- 04** Vila L., Martinez-Perez A., Camacho M., Buil A., Alcolea S., Pujolmoix N., Soler M., Anton R., Souto J.-C., Fontcuberta J., Soria J.-M. Heritability of thromboxane A2 and prostaglandin E2 biosynthetic machinery in a Spanish population. *Arterioscler. Thromb. Vasc. Biol.*; 30(1):128-134  
**IF: 7.215**
- 05** Marti-Fabregas J., Borrell M., Silva Y., Delgado-Mederos R., Martinez-Ramirez S., De Juan-Delago M., Tirado I., Alejaldre A., Marin R., Marti-Vilalta J.-L., Fontcuberta J. Hemostatic proteins and their association with hematoma growth in patients with acute intracerebral hemorrhage. *Stroke*; 41(12):2976-2978  
**IF: 5.756**
- 06** Torres O.H., Hernandez N., Francia E., Barcelo M., Mateo J., Ruiz D. Effect of prophylactic treatment with low-molecular-weight heparin bemparin sodium on serum potassium levels: A prospective observational study. *Drugs Aging*; 27(5):399-406  
**IF: 2.656**
- 07** Bauersachs R., Berkowitz S.D., Brenner B., Buller H.R., Decousus H., Gallus A.S., Lensing A.W., Misselwitz F., Prins M.H., Raskob G.E., Segers A., Verhamme P., Wells P., Agnelli G., Bounameaux H., Cohen A., Davidson B.L., Piovello F., Schellong S., EINSTEIN Investigators (col. Fontcuberta J.). Oral rivaroxaban for symptomatic venous thromboembolism. *N. Engl. J. Med.*; 363(26):2499-2510  
**IF: 53.484**
- 08** Calafell F., Almasly L., Sabater-Lleal M., Buil A., Mordillo C., Ramirez-Soriano A., Sikora M., Souto J.C., Blangero J., Fontcuberta J., Soria J.M. Sequence variation and genetic evolution at the human F12 locus: mapping quantitative trait nucleotides that influence FXII plasma levels. *Hum. Mol. Genet.*; 19(3):517-525  
**IF: 8.058**

\*TIF: 126.476 \*\*MIF: 15.809

\* Total Impact Factor  
\*\* Mean Impact Factor



# Cardiovascular Biochemistry

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Main lines of research

- Mechanisms of atherogenicity in low density lipoproteins (LDL).
- Electronegative LDL, interaction with cells from atheromatous lesions.
- Vulnerability markers in atheromatous plaque: electronegative LDL, myeloperoxidase, phospholipase.
- New markers of acute cardiovascular disease: cardiac troponins, natriuretic peptides, [ST]-2.

Awards

NACB Distinguished Abstract Award of the Annual Meeting of the American Association of Clinical Chemistry, for High-sensitivity troponin T will modify the clinical classification of acute coronary syndromes.

Challenges

- Demonstrate that electro-negative LDL is a marker of vulnerable atheromatous plaque.
- Determine the intracellular mechanisms involved in the inflammatory response induced by LDL(-) and the components of the particle that entail atherogenicity.

Active grants

- Benítez, S. Study of the mechanisms involved in the inflammatory effects of LDL(-) in monocytes and the inhibitory role of HDL. Period: January 2010-December 2012. Expedient: PI09/0160.
- Benítez, S. Induction of genes and proteins due to electronegative LDL in leukocytes. Period: February 2005-February 2011. Expedient: CP04/00110.
- Benítez, S. Receptors involved in the electronegative LDL entry pathway in mononuclear cells responsible for the inflammatory effect. Period: January 2008-December 2010. Expedient: 08/FEA.
- Ordóñez, J. Funds in support of Catalan research groups. Cardiovascular Biochemistry Group. Period: August 2009-December 2013. Expedient: 2009SGR 1205.
- Sánchez-Quesada, J. SNS research contracts. FIS. Period: February 2007-January 2013. Expedient: CP06/00220.



\*TIF: 30.633 \*\*MIF: 3.829

## INDEXED PUBLICATIONS

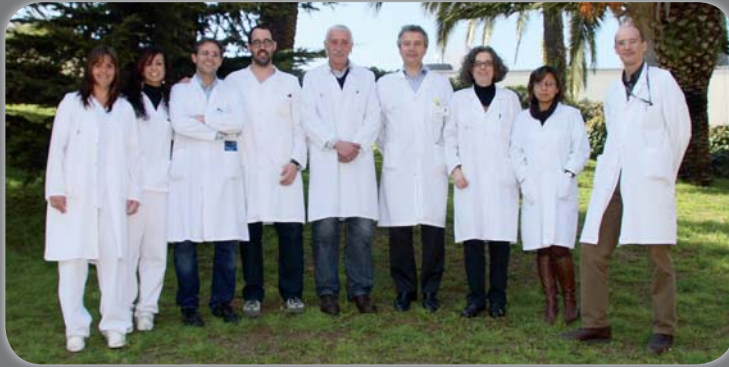
- 01** Blanco F.J., Villegas S., Benitez S., Bancells C., Diercks T., Ordonez-Llanos J., Sanchez-Quesada J.L. 2D-NMR reveals different populations of exposed lysine residues in the apoB-100 protein of electronegative and electropositive fractions of LDL particles. *J. Lipid Res.*; 51(6):1560-1565  
**IF: 6.115**
- 02** Baggish A.L., Van Kimmenade R.R.J., Pinto Y., Richards A.M., Lainchbury J., Bayes-Genis A., Santalo M., Ordonez-Llanos J., Januzzi J.L. New york heart association class versus amino-terminal pro-B type natriuretic peptide for acute heart failure prognosis. *Biomarkers*; 15(4):307-314  
**IF: 2.09**
- 03** Jaffe A.S., Ordonez-Llanos J. Ultra-sensitive troponin in chest pain and acute coronary syndromes. A step ahead? *Rev. Esp. Cardiol.* 63(7):763-769  
**IF: 2.157**
- 04** Bancells C., Sanchez-Quesada J.L., Birkelund R., Ordonez-Llanos J., Benitez S. HDL and electronegative LDL exchange anti- and pro-inflammatory properties. *J. Lipid Res.*; 51(10):2947-2956  
**IF: 6.115**
- 05** Bancells C., Villegas S., Blanco F.J., Benitez S., Gallego I., Beloki L., Perez-Cuellar M., Ordonez-Llanos J., Sanchez-Quesada J.L. Aggregated electronegative low density lipoprotein in human plasma shows a high tendency toward phospholipolysis and particle fusion. *J. Biol. Chem.*; 285(42):32425-32435  
**IF: 5.328**
- 06** Bancells C., Canals F., Benitez S., Colome N., Julve J., Ordonez-Llanos J., Sanchez-Quesada J.L. Proteomic analysis of electronegative low-density lipoprotein. *J. Lipid Res.*; 51(12):3508-3515  
**IF: 6.115**
- 07** Bayes-Genis A., Pascual-Figal D., Januzzi J.L., Maisel A., Casas T., Chavarri M.V., Ordonez-Llanos J. Soluble ST2 monitoring provides additional risk stratification for outpatients with decompensated heart failure. *Rev. Esp. Cardiol.*; 63(10):1171-1178  
**IF: 2.157**
- 08** Sanchez-Quesada J.L., Benitez S., Bancells C., Ordonez-Llanos J. Atherogenesis and aggregated electronegative LDL. *Clin. Lipidol.*; 5(6):769-773  
**IF: 0.556**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Angiology, Vascular Biology and Inflammation

TEAM



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Main lines of research

### Cardiovascular research:

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

### Cancer research:

- Intense peritumoural inflammatory response as a therapeutic strategy in solid tumours.
- Role of PGE-synthase isoenzymes in head and neck squamous carcinoma, and in regulating gene expression in tumour relapse.

Challenges

Our main challenge is to consolidate the group and strengthen our collaboration with other groups. To do so we need to incorporate more predoctoral researchers, establish collaborations with the industrial sector in order to develop new anti-

inflammatory drugs based on the inhibition of mPGES-1, and set up training programmes for clinical physicians with a strong interest in research.

Active grants

- Bellmunt, S. Study for the development of a scale to prioritize waiting lists for varicose veins. Phase III and conclusions. Period: September 2008-December 2010. Expedient: PI07/0652.
- Camacho, M. Modulation by hypoxia of PGE2 biosynthesis in vascular cells and leukocytes: role of the PGE Synthases. Period: January 2009-December 2011. Expedient: SAF08-01777.
- Vila, L. RECAVA. Period: January 2008-December 2011. Expedient: RD06/0014/1005.
- Vila, L. Microsomal PGE-synthase-1 as new therapeutic target for abdominal aortic aneurysm. Period: January-December 2010. Expedient: SAF2009/09598.
- Vila, L. Identification of new therapeutic targets for the abdominal aortic aneurysm. Caixa Tarragona 2010. Period: June 2010-May 2011. Expedient: TU AYUDAS.

\*TIF: 7.215 \*\*MIF: 7.215

Scientific production

### INDEXED PUBLICATIONS

- 01 Vila L., Martinez-Perez A., Camacho M., Buil A., Alcolea S., Pujol-Moix N., Soler M., Anton R., Souto J.-C., Fontcuberta J., Soria J.-M. Heritability of thromboxane A2 and prostaglandin E2 biosynthetic machinery in a spanish population. *Arterioscler. Thromb. Vasc. Biol.*; 30(1):128-134  
IF: 7.215

\* Total Impact Factor  
\*\* Mean Impact Factor



# Inflammation and Vascular Remodelling

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## Main lines of research

- Inflammation and vascular remodelling. Regulation of vascular homeostasis by lysyl oxidase (LOX).
- Molecular and cellular mechanisms in atherosclerosis.
- Molecular basis of abdominal aortic aneurysm (AAA).

## Challenges

- Identify and characterize the components of MEX involved in the appearance, progression and complication of atherosclerosis and AAA.
- Characterize new cellular and molecular mechanisms in the modulation of ECM stability.
- Determine the role of LOX and other enzymes that modify MEX in the development of cardiovascular diseases such as atherosclerosis and AAA.
- Characterize the role of LOX in the control of vascular homeostasis and identify genes modulated by this enzyme in vascular cells.
- Identify new therapeutic targets, progression markers and biomarkers in atherosclerosis and AAA.

## Active grants

- Rodríguez, C. Mechanisms involved in the control of vascular homeostasis by lysyl oxidase (LOX): LOX as a new marker of the evolution of abdominal aorta aneurysms. Period: 2009-2012. Expedient: PS09/01797.
- Rodríguez, C. Mechanisms involved in the control of vascular homeostasis by lysyl oxidase. Period: 2009-2010. Expedient: FEA/SEA 2010.



# Molecular and Therapeutic Pathologies of Ischaemic and Atherothrombotic Diseases

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Blanca Oñate BFI  
Norma Rovira CIBEROBN

Main lines of research

- Physiopathological role of LRP family proteins in chronic diseases.
- Identification and characterization of transcription factors and genetic targets. Role of HDL and LDL.
- Vascular impact of ischaemia and angiogenesis in heart disease. Cellular therapy.

Challenges

- Set up and maintain an NMR/PET platform, essential for the strategic development of this programme and requiring the use of imaging techniques to evaluate the function of new targets for later therapeutic development.
- Use nuclear magnetic resonance is needed to answer questions arising from myocardial perfusion.
- 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.
- Maintain present relationships with collaborators and establish new multidisciplinary collaborations.
- Strengthen international funding for new platform development apply to international bodies for financing once we have the platforms necessary to carry out the proposed activities.

Awards

- Albert Struyvenberg Medal Winner 2010, Dr. Badimon Awarded by the European Society for Clinical Investigation.
- Best Communication Award at the 23rd National Conference of the Spanish Arteriosclerosis Society (Cordoba 2010). Special Mention 2010. Apolipoprotein J in newly presenting patients with acute myocardial infarction. Arteriosclerosis clinics and research (Cubedo J., Padró T., Pintó X., Badimon L.).
- Best Article in Thrombosis and Haemostasis Award 2010, presented by the Spanish Thrombosis and Haemostasis Foundation.




**Active grants**

- Badimon, L. Programme of annual activities of the Science Culture Unit of the ICCC: Bringing cardiovascular research to the public. Period: July 2010-May 2011. Expedient: FCT-10-1185.
- Badimon, L. Development of new methodologies and emerging technologies to provide evidence of foods with health properties for the reduction of the risk of chronic pathologies from middle age. HENUFOOD. Period: May 2010-December 2013. Expedient: CEN20101016.
- Badimon, L. Angiogenic cell therapy of cardiovascular ischaemic diseases. Period: January 2010-December 2011. Expedient: 2009 CTP 00028.
- Badimon, L. Consolidated research group. Period: January 2009-December 2013. Expedient: 2009 SGR 826.
- Badimon, L. From hypercholesterolemia to atherosclerosis in hFH patients: Characterization and functional effects on resident vascular cells of plasma lipoproteins (HDL, LDL) and circulating microparticles. Period: January 2009-December 2011. Expedient: CNIC2008-08.
- Badimon, L. Safer And Faster Evidence-Based Translation. Period: September 2009-December 2013. Expedient: SAFE-T.
- Badimon, L. European Network for Cell Imaging and Tracking Expertise. Period: June 2009-May 2012. Expedient: ENCITE.
- Badimon, L. Cellular and molecular mechanisms in coronary arteriosclerosis and myocardial ischaemia. Therapeutic implications. Period: October 2006-September 2011. Expedient: SAF 2006-10091.
- Badimon, L. Cell Therapy. TERCEL. December 2006-December 2011. RD06/0010/0017.
- Badimon, L. Thematic Physio-pathology Network for Obesity and Nutrition. Period: December 2006-December 2011. Expedient: CB2006/03.

**\*TIF: 48.959 \*\*MIF: 4.080**
**Scientific production**
**INDEXED PUBLICATIONS**

- 01 Costales P., Aledo R., Vernia S., Das A., Shah V.H., Casado M., Badimon L., Llorente-Cortes V. Selective role of sterol regulatory element binding protein isoforms in aggregated LDL-induced vascular low density lipoprotein receptor-related protein-1 expression. *Atherosclerosis*; 213(2):458-468  
**IF: 4.086**
- 02 Xavier F.E., Blanco-Rivero J., Sastre E., Badimon L., Balfagon G. Simultaneous inhibition of TXA2 and PGI2 synthesis increases NO release in mesenteric resistance arteries from cirrhotic rats. *Clin. Sci.*; 119(7):283-292  
**IF: 4.613**
- 03 Badimon L., Vilahur G., Padro T. Nutraceuticals and atherosclerosis: Human trials. *Cardiovasc. Ther.*; 28(4):202-215  
**IF: 2.183**
- 04 Badimon J.J., Santos-Gallego C.G., Badimon L. Importance of HDL cholesterol in atherothrombosis: How did we get here? Where are we going? *Rev. Esp. Cardiol.*; 63(SUPPL. 2):20-35  
**IF: 2.157**
- 05 Molins B., Pena E., Padro T., Casani L., Mendieta C., Badimon L. Glucose-regulated protein 78 and platelet deposition: Effect of rosuvastatin. *Arterioscler. Thromb. Vasc. Biol.*; 30(6):1246-1252  
**IF: 7.215**
- 06 Garcia-Arguinzonis M., Padro T., Lugano R., Llorente-Cortes V., Badimon L. Low-density lipoproteins induce heat shock protein 27 dephosphorylation, oligomerization, and subcellular relocalization in human vascular smooth muscle cells. *Arterioscler. Thromb. Vasc. Biol.*; 30(6):1212-1219  
**IF: 7.215**
- 07 Slevin M., Turu M.M., Rovira N., Luque A., Baldellou M., Krupinski J., Badimon L. Identification of a 'snapshot' of co-expressed angiogenic markers in laser-dissected vessels from unstable carotid plaques with targeted arrays. *J. Vasc. Res.*; 47(4):323-335  
**IF: 2.752**
- 08 Bernal-Lopez M.R., Llorente-Cortes V., Gomez-Huelgas R., Badimon L., Tinahones F.J. Intimate relation between genic expression of scavenger receptor CD36 and transcription factor SREBP2. *Process Biochem.*; 45(6):1002-1006  
**IF: 2.648**
- 09 Lopez-Miranda J., Perez-Jimenez F., Ros E., De Caterina R., Badimon L., Covas M.I., Escrich E., Ordovas J.M., Soriguer F., Abia R., Alarcon de la Lastra C., Battino M., Corella D., Chamorro-Quiros J., Delgado-Lista J., Giugliano D., Esposito K., Estruch R., Fernandez-Real J.M., Gaforio J.J., La Vecchia C., Lairon D., Lopez-Segura F., Mata P., Menendez J.A., Muriana F.J., Osada J., Panagiotakos D.B., Paniagua J.A., Perez-Martinez P., Perona J., Peinado M.A., Pineda Priego M., Poulsen H.E., Quiles J.L., Ramirez-Tortosa M.C., Ruano J., Serra-Majem L., Sola R., Solanas M., Solfrizzi V., de la Torre-Fornell R., Trichopoulos A., Uceda M., Villalba-Montoro J.M., Villar-Ortiz J.R., Visioli F., Yiannakouris N. Olive oil and health: Summary of the II international conference on olive oil and health consensus report, Jaén and Córdoba (Spain) 2008. *Nutr. Metab. Cardiovasc. Dis.*; 20(4):284-294  
**IF: 3.438**
- 10 Slevin M., Badimon L., Grau-Olivares M., Ramis M., Sendra J., Morrison M., Krupinski J. Combining nanotechnology with current biomedical knowledge for the vascular imaging and treatment of atherosclerosis. *Mol. Biosyst.*; 6(3):444-450  
**IF: 3.825**
- 11 Llorente-Cortes V., Estruch R., Mena M.P., Ros E., Gonzalez M.A.M., Fito M., Lamuela-Raventos R.M., Badimon L. Effect of Mediterranean diet on the expression of pro-atherogenic genes in a population at high cardiovascular risk. *Atherosclerosis*; 208(2):442-450  
**IF: 4.086**
- 12 Slevin M., Matou-Nasri S., Turu M., Luque A., Rovira N., Badimon L., Boluda S., Potempa L., Sanfeliu C., De Vera N., Krupinski J. Modified c-reactive protein is expressed by stroke neovessels and is a potent activator of angiogenesis in vitro. *Brain Pathol.*; 20(1):151-165  
**IF: 4.741**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Biomarkers for Disease Status

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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, performing studies in cell cultures, animal models of cardiovascular disease and human samples of patients with coronary heart disease risk factors.

Active grants

- Padró, T. Safer And Faster Evidence-Based Translation. Period: September 2009-December 2013. Expedient: SAFE-T.
- Padró, T. Low-density lipoproteins and stability of arteriosclerotic plaques. Period: December 2010-December 2013. Expedient: PI10/01115.
- Padró, T. Vascular remodelling and arteriosclerosis. Regulatory effect of the interaction between the UPA/UPAR system and low-density lipoproteins in the migration and proliferation of human vascular smooth muscle cells. Expedient: FIS PI071070.

Challenges

- Advance research aiming to identify and characterize new biomarkers of vascular injury, atherothrombotic disease and/or ischaemic, coronary and cerebrovascular syndromes using post-genomic 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, using proteomic techniques based on liquid chromatography and bidimensional electrophoresis, antibody array systems and mass spectrometry (MALDI-ToF/lineal 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 which the selected biomarkers in cardiovascular pathology (biology of systems).
- Consolidate the Proteomic Platform.
- Lead and launch the BIOBANK for the SAFE-T European project.

Awards

- Best Communication Award at the 23rd National Conference of the Spanish Arteriosclerosis Society (Cordoba 2010). Special Mention 2010. Apolipoprotein J in newly presenting patients with acute myocardial infarction. Arteriosclerosis clinics and research (Cubedo J., Padró T., Pintó X., Badimon L.).
- Best Article in Thrombosis and Haemostasis Award 2010 of the Spanish Thrombosis and Haemostasis Foundation (SETH) ARTERIOSCLEROSIS, THROMBOSIS AND VASCULAR BIOLOGY 2010; 30(6):1246-1252.

**\*TIF: 16.613 \*\*MIF: 5.538**

Scientific production

**INDEXED PUBLICATIONS**

- 01** Badimon L., Vilahur G., Padro T. Nutraceuticals and atherosclerosis: Human trials. *Cardiovasc. Ther.*; 28(4):202-215  
**IF: 2.183**
- 02** Molins B., Pena E., Padro T., Casani L., Mendieta C., Badimon L. Glucose-regulated protein 78 and platelet deposition: Effect of rosuvastatin. *Arterioscler. Thromb. Vasc. Biol.*; 30(6):1246-1252  
**IF: 7.215**
- 03** Garcia-Arguinzonis M., Padro T., Lugano R., Llorente-Cortes V., Badimon L. Low-density lipoproteins induce heat shock protein 27 dephosphorylation, oligomerization, and subcellular relocalization in human vascular smooth muscle cells. *Arterioscler. Thromb. Vasc. Biol.*; 30(6):1212-1219  
**IF: 7.215**

\* Total Impact Factor  
\*\* Mean Impact Factor



**AREA 2**

# *Genetic, Metabolic and Inflammatory Diseases*

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# Metabolic Bases of Cardiovascular Risk

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---------------	-------

Main lines of research

- HDL and susceptibility to arteriosclerosis: modification of the relationship by metabolic disorders, genetic modification and 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.

Challenges

- Analyse the effects of diabetes mellitus and hyperhomocysteinemia in reverse cholesterol transport in vivo.
- Determine the pathogenic relevance of alterations in cholesterol metabolism in diabetic retinopathy.
- Compare the effects of niacin and fenofibrate in the HDL of patients with type 2 diabetes.
- Evaluate the importance of liver lipase and endothelial lipase on macrophage-specific reverse cholesterol transport in vivo.
- Study anti-cancer mechanisms of phytosterol action in depth.
- Define the genes/polymorphisms in chromosome 3p related to type 2 diabetes.
- Demonstrate the relationship of the four SNPs identified in the NNMT gene with homocysteine and thrombosis in a case-control study.
- Develop new molecular techniques to diagnose metabolic inherited diseases to be used clinical laboratory.



## Active grants

- Blanco, F. Identification of genes involved in susceptibility to hyperhomocysteinaemia, a risk factor for stroke and Alzheimer disease. Period: February 2007-January 2010. Expedient: 06/0410.
- Blanco, F. Role of the lipases involved in lipoprotein metabolism in modulating the anti-atherogenic properties of HDL (reverse cholesterol transport specific to macrophage and antioxidant capacity). Period: January 2009-December 2011. Expedient: PI08/1147.
- Escolà, J. Effect of apolipoprotein A-II on the metabolism of triglycerides in transgenic mice and in normolipidaemic subjects. Period: April 2009-April 2011. Expedient: 08/FEA SEA.
- Escolà, J. Functional analysis of antiatherogenic properties of HDL (reverse cholesterol transport specific to in vivo macrophages and antioxidant capacity) in animal models of type 2 diabetes mellitus and atherosclerosis. Period: January 2010-December 2012. Expedient: PI09/0178.
- Escolà, J. Programa i3. General Research Directorate. Period: December 2007-December 2012. Expedient: 07/I3
- Julve, J. Effect of nicotinamide N-methyltransferase (NNMT) expression on concentrations of plasma homocysteine (HCY) and the relationship with atherogenesis in animal models. Period: October 2007-December 2010. Expedient: PI07/1067.
- Llaverias, G. Postdoctoral research contracts. Period: January 2007-January 2011. Expedient: 06/CD-00044.
- Rotllán, N. Predoctoral research training contracts. Period: March 2006-February 2010. Expedient: 05/P-00221.

\*TIF: 41.926 \*\*MIF: 5.240

## Scientific production

## INDEXED PUBLICATIONS

- 01 Mendez-Gonzalez J., Rodriguez-Millan E., Julve J., Blanco-Vaca F. Vitamin treatments that lower homocysteine concentration: Can they decrease cerebrovascular disease in primary prevention? *Rev. Neurologia*; 50(4):235-244  
IF: 1.218
- 02 Julve J., Escola-Gil J.C., Rotllán N., Fievet C., Vallez E., De La Torre C., Ribas V., Sloan J.H., Blanco-Vaca F. Human apolipoprotein A-II determines plasma triglycerides by regulating lipoprotein lipase activity and high-density lipoprotein proteome. *Arterioscler. Thromb. Vasc. Biol.*; 30(2):232-238  
IF: 7.215
- 03 Coll T., Palomer X., Blanco-Vaca F., Escola-Gil J.C., Sanchez R.M., Laguna J.C., Vazquez-Carrera M. Cyclooxygenase 2 inhibition exacerbates palmitate-induced inflammation and insulin resistance in skeletal muscle cells. *Endocrinology*; 151(2):537-548  
IF: 4.993
- 04 Mendez-Gonzalez J., Suren-Castillo S., Calpe-Berdiel L., Rotllán N., Vazquez-Carrera M., Escola-Gil J.C., Blanco-Vaca F. Disodium ascorbyl phytostanol phosphate (FM-VP4), a modified phytostanol, is a highly active hypocholesterolaemic agent that affects the enterohepatic circulation of both cholesterol and bile acids in mice. *Br. J. Nutr.*; 103(2):153-160  
IF: 3.072
- 05 Bancells C., Canals F., Benitez S., Colome N., Julve J., Ordóñez-Llanos J., Sanchez-Quesada J.L. Proteomic analysis of electronegative low-density lipoprotein. *J. Lipid Res.*; 51(12):3508-3515  
IF: 6.115
- 06 Varela-Rey M., Martínez-López N., Fernández-Ramos D., Embade N., Calvisi D.F., Woodhoo A., Rodríguez J., Fraga M.F., Julve J., Rodríguez-Millán E., Frades I., Torres L., Luka Z., Wagner C., Esteller M., Lu S.C., Martínez-Chantar M.L., Mato J.M. Fatty liver and fibrosis in glycine N-methyltransferase knock-out mice is prevented by nicotinamide. *Hepatology*; 52(1):105-114  
IF: 10.885
- 07 Hervera A., Negrete R., Leanez S., Martín-Campos J.M., Pol O. The spinal cord expression of neuronal and inducible nitric oxide synthases and their contribution in the maintenance of neuropathic pain in mice. *PLoS One*; 5(12): e14321  
IF: 4.411
- 08 Hervera A., Negrete R., Leanez S., Martín-Campos J., Pol O. The role of nitric oxide in the local antiallo-dynamic and antihyperalgesic effects and expression of  $\delta$ -opioid and cannabinoid-2 receptors during neuropathic pain in mice. *J. Pharmacol. Exp. Ther.*; 334(3):887-896  
IF: 4.017

\* Total Impact Factor  
\*\* Mean Impact Factor



# Inflammatory Diseases

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M<sup>a</sup> Ángeles Ortiz IR-HSCSP  
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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**

- Research into the role of innate immunity molecules in the development and control of inflammatory processes, in the appearance of autoimmune phenomena, immunodeficiencies, infections, cardiovascular diseases and development of tumours.
- Analysis of the evolution of immunological parameters and their correlation with clinical response to treatment with immunomodulators.
- Role of TLR and STAT signalling in inflammatory diseases.
- Involvement of STAT family of transcription factors in response to superantigens.
- Study of mechanisms implicated in immunodeficiency caused by alterations of the CD8a molecule.
- Effects of rituximab in immunological variables and their correlation with the clinical response in patients with inflammatory diseases.
- Role of perivascular adipocytes and TRL signalling pathways in the development of atherosclerosis.
- Inflammation and rejection in heart transplantation.
- Effects of immunobiological treatments on immunological variables.





## Active grants

- De la calle, O. Redirecting T cell specificity against WT1 tumour antigen peptides restricted by HLA-A2. Translational preclinical study. Period: January 2010-December 2012. Expedient: PI09/0310.
- Juárez, C. Marató TV3. Period: February 2009-February 2012. Expedient: 08/0210.
- Juárez, C. Role of the Stat family transcription factors in modulating the response to superantigens. Period: October 2007-June 2011. Expedient: PI07/0964.
- Vidal, S. Agreement with the Health Department: Researcher stability Period: January 2006-December 2010. Expedient: 06/DPT SALUT.
- Vidal, S. Involvement of TLRs in intestinal tumourigenesis: a study of the inflammation mechanisms mediated by TLRs involved in intestinal tumourigenesis. Period: January 2010-December 2012. Expedient: PI09/0132.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Martínez-Martínez L., González-Santesteban C., Agustí-Martí M., Pérez-Ranz E., De La Calle-Martín O. A novel HLA-B\*35 variant, HLA-B\*35:02:03, identified by sequence-based typing in a bone marrow donor. *Tissue Antigens*; 76(2):152-153  
**IF: 3.024**
- 02** Barnadas M.A., Gelpi C., Martínez L., Curell R., Martino R., Alomar A. Acquired bullous dermatosis associated with IgA multiple myeloma: A case report. *J. Cutan. Pathol.*; 37(11):1174-1177  
**IF: 1.744**
- 03** Alvarez E., Moga E., Barquinero J., Sierra J., Briones J. Dendritic and tumor cell fusions transduced with adenovirus encoding CD40L eradicate B-cell lymphoma and induce a Th17-type response. *Gene Ther.*; 17(4):469-477  
**IF: 4.538**
- 04** Nieves Calatrava D., Calle-Martín O.D.L., Iribarren-Loyarte J.A., Rivero-Roman A., García-Bujalance L., Pérez-Escolano I., Brosa-Riestra M. Cost-effectiveness analysis of HLA-B\*5701 typing in the prevention of hypersensitivity to abacavir in HIV patients in Spain. *Enferm. Infec. Microbiol. Clin.*; 28(9):590-595  
**IF: 1.656**
- 05** Guarner-Argente C., Sánchez E., Vidal S., Roman E., Concepción M., Poca M., Sánchez D., Juárez C., Soriano G., Guarner C. Toll-like receptor 4 D299G polymorphism and the incidence of infections in cirrhotic patients. *Aliment. Pharmacol. Ther.*; 31(11):1192-1199  
**IF: 3.861**
- 06** Rojas-García R., Gallardo E., De Luna N., Juárez C., Martínez-Hernández E., Carvajal A., Casasnovas C., Fages E., Davila-González P., Illa I. Bulbar involvement in patients with antiganglioside antibodies against NeuNAc(α2-3) Gal. *J. Neurol. Neurosurg. Psychiatry*; 81(6):623-628  
**IF: 4.791**

\*TIF: 19.614 \*\*MIF: 3.269

\* Total Impact Factor  
\*\* Mean Impact Factor



# Endocrinology, Diabetes and Nutrition

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--------------	----------

Main lines of research

- Endocrine gland neoplasms (endocrine oncology).
- Immunogenetics of diabetes mellitus.
- Therapeutic optimization in diabetes mellitus.
- Telemedical artificial pancreas.
- Prevention of obesity, diabetes, hyperlipidaemia, complications of diabetes and cardiovascular risk.
- Primary and secondary hyperlipidaemias.
- Endocrine disorders and pregnancy.
- Telemedicine and other new technologies applied to endocrine, metabolic and nutritional disorders.

Challenges

**Endocrine cancer:**

- Study human thyrocyte cultures, developing and maintaining cell lines in cultures of healthy thyroid tissue, benign processes (adenoma), and differentiated, poorly differentiated and anaplastic epithelial carcinomas. Functional studies.
- Investigate whether the molecular mechanisms involved in the prognostic prediction (thyroid cytology) will help define new therapeutic targets for thyroid carcinoma of epithelial origin.

**Immunogenetics of diabetes mellitus (DM):**

- Research efficient prevention of DM in women with antecedents of gestational diabetes based on assessment of their pathogenic heterogeneity, characterizing the different types (autoimmune, LADA, type 2 prediabetes), through appropriate interventions (immunoregulation, behaviour modification and insulin sensitizers).

- Optimize DB therapy.
- Continue development of telemedicine and other new technologies applied to endocrine, metabolic and nutrition disorders.
- Fully develop the telemedical artificial pancreas developed by EDUAB-HSP and GBT-UPM, CIBERBBN groups. Perform clinical trials in different groups (DM-1, DM-2, gestational diabetes, preconception diabetes, adults and children).
- Prevention of obesity, diabetes, hyperlipidaemia, complications of diabetes and cardiovascular risk.
- Research into primary and secondary hyperlipidaemias.
- Exploration and evaluation of the benefits of the PREDIRCAM platform for the prevention and optimal treatment of DM-2 and cardiometabolic risk, as well as the metabolic syndrome and hyperlipidemia secondary to DM.



## Active grants

- De Leiva, Alberto. Grants to support research groups in Catalonia. Diabetes and other endocrine diseases. Period: September 2009-December 2013. Expedient: 2009SGR 806.
- De Leiva, Alberto. Investigation of the predictive and diagnostic value of molecular markers that make up a genetic signature of poor prognosis for thyroid samples and involvement in the process of tumour differentiation. Period: January 2010-December 2012. Expedient: PI09/2286.
- Chico, A. Idosing: helping tool for optimal insulin dosage for diabetic patients based on interactive learning control techniques integrated in a telemedicine platform. Period: January 2009-December 2011. Expedient: PI08/0669.
- Corcoy, R. UE. Period: March 2010-August 2014. Expedient: HEALTH-F2-2009-242187.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Chico A., Saigi I., Garcia-Patterson A., Santos M.D., Adelantado J.M., Ginovart G., De Leiva A., Corcoy R. Glycemic control and perinatal outcomes of pregnancies complicated by type 1 diabetes: Influence of continuous subcutaneous insulin infusion and lispro insulin. *Diabetes Technol. Ther.*; 12(12):937-945  
**IF: 2.146**
- 02** Sojo L., Garcia-Patterson A., Maria M.-A., Martin E., Ubeda J., Adelantado J.-M., De Leiva A., Corcoy R. Are birth weight predictors in diabetic pregnancy the same in boys and girls? *Eur. J. Obstet. Gynecol. Reprod. Biol.*; 153(1):32-37  
**IF: 1.764**
- 03** Garcia-Patterson A., Gich I., Amini S.B., Catalano P.M., De Leiva A., Corcoy R. Insulin requirements throughout pregnancy in women with type 1 diabetes mellitus: Three changes of direction. *Diabetologia*; 53(3):446-451  
**IF: 6.973**
- 04** Rodriguez-Herrero A., Perez-Gandia C., Rigla M., De Leiva A., Gomez E.J., Hernando M.E. A simulation study of an inverse controller for closed- and semiclosed-loop control in type 1 diabetes. *Diabetes Technol. Ther.*; 12(2):95-104  
**IF: 2.146**
- 05** Perez-Gandia C., Facchinetti A., Sparacino G., Cobelli C., Gomez E.J., Rigla M., De Leiva A., Hernando M.E. Artificial neural network algorithm for online glucose prediction from continuous glucose monitoring. *Diabetes Technol. Ther.*; 12(1):81-88  
**IF: 2.146**
- 06** Saig I., Prez A. Management of glucocorticoid induced hyperglycemia [Manejo de la hiperglucemia inducida por corticoides]. *Rev. Clin. Esp.*; 210(8):397-403  
**IF: 0.762**
- 07** Ybarra J., Pou J.M., Romeo J.H., Merce J., Jurado J. Transforming growth factor beta 1 as a biomarker of diabetic peripheral neuropathy: Cross-sectional study. *J. Diabetes Complications*; 24(5):306-312  
**IF: 2.147**
- 08** International Association of Diabetes and Pregnancy Study Groups Consensus Panel, Metzger B.E., Gabbe S.G., Persson B., Buchanan T.A., Catalano P.A., Damm P., Dyer A.R., Leiva A., Hod M., Kitzmiller J.L., Lowe L.P., McIntyre H.D., Oats J.J., Omori Y., Schmidt M.I. International Association of Diabetes and Pregnancy Study Groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy. *Diabetes Care*; 33(3):676-682  
**IF: 7.141**
- 09** Colom C., Corcoy R. Maturity onset diabetes of the young and pregnancy. *Best Pract. Res. Clin. Endoc. Metab.*; 24(4):605-615  
**IF: 4.19**
- 10** Corcoy R., Lumbreras B., Luis Bartha J., Ricart W. New diagnostic criteria for gestational diabetes mellitus after the HAPO study. Are they valid in our environment? *Gac. Sanit.*; 24(4):361-363  
**IF: 1.114**

\*TIF: 30.529 \*\*MIF: 3.0529

\* Total Impact Factor  
\*\* Mean Impact Factor



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Nuria Sucunza CIBERER

Main lines of research

- "Morbimortality, low grade inflammation and cardiovascular risk in patients with acromegaly or Cushing's syndrome" FIS PI05/0448.
- ERCUSYN: "European Registry on Cushing's syndrome". SANCO, EU Public Health Programme: PHP A800200 ([www.ercusyn.eu](http://www.ercusyn.eu)).
- "Neuroradiological, neuropsychological and clinical study of endogenous hypercortisolism: comparison of Cushing's syndrome and chronic major depressive disorder" FIS 08/0302.
- Validation of psychological properties of specific questionnaires to evaluate health-related quality of life (HRQoL) in Cushing's syndrome and acromegaly.
- "Study of signal transduction of GH in muscle by gene expression in a C2C12 cell line stimulated with GH".

Challenges

- Investigate the neuropsychological, neuroradiological and clinical correlation of patients with endogenous hypercortisolism (due to Cushing's 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.
- Study gene expression in cultured muscle cells after exposure to GH, by means of microarrays.
- Validate psychological properties of questionnaires specifically developed to evaluate QoL in patients with Cushing's syndrome or acromegaly.
- Evaluate long-term morbidity and mortality in patients who have had Cushing's syndrome or acromegaly in the last 25 years.
- Analyse and update the European database of patients with Cushing's syndrome (ERCUSYN); 200 patients from 20 countries were included by the end of 2009 and over 400 by the end of 2010.
- Conduct in vitro molecular analysis of operated pituitary adenomas in coordination with the Department of Biochemistry and Molecular Biology at the University of Cordoba (Spain).

Awards

- Almirall Award for the Best Published Article on Cardiovascular Risk of the Spanish Endocrinology and Nutrition Society, to M<sup>a</sup> José Barahona. Deleterious effects of glucocorticoid replacement on bone in women after long-term remission of Cushing's syndrome", published in *J Bone & Mineral Research* 2009; 24:1841-6.
- Official College of Nurses of Barcelona Award, to M<sup>a</sup> Antonia Martínez Momblán, member of the Pituitary Diseases Research Group, for Impact of an educational program for patients with Cushing's syndrome: multicentre study.



## Active grants

- Webb, S. European Register on Cushing's Syndrome-ERCUSYN. Period: September 2007-August 2010. Expedient: 06/117 ERCUSYN.
- Webb, S. Neuropsychological, neuroradiological and clinical study in endogenous hypercortisolism: Comparison in Cushing's syndrome and chronic major depressive disorders. Period: January 2009-December 2011. Expedient: PI08/0302.

\*TIF: 21.755 \*\*MIF: 4.351

## Scientific production

## INDEXED PUBLICATIONS

- 01 Puig-Domingo M., Resmini E., Gomez-Anson B., Nicolau J., Mora M., Palomera E., Marti C., Halperin I., Webb S.M. Magnetic resonance imaging as a predictor of response to somatostatin analogs in acromegaly after surgical failure. *J. Clin. Endocrinol. Metab.*; 95(11):4973-4978  
IF: 6.495
- 02 Webb S.M., Mo D., Lamberts S.W.J., Melmed S., Cavagnini F., Giraldi F.P., Strasburger C.J., Zimmermann A.G., Woodmansee W.W. Metabolic, cardiovascular, and cerebrovascular outcomes in growth hormone-deficient subjects with previous Cushing's disease or non-functioning pituitary adenoma. *J. Clin. Endocrinol. Metab.*; 95(2):630-638  
IF: 6.495
- 03 Sardella C., Lombardi M., Rossi G., Cosci C., Brogioni S., Scattina I., Webb S.M., Gasperi M., Martino E., Bogazzi F. Short- and long-term changes of quality of life in patients with acromegaly: Results from a prospective study. *J. Endocrinol. Invest.*; 33(1):20-25  
IF: 1.476
- 04 Barahona M.J., Resmini E., Sucunza N., Webb S.M. Diagnosis of cure in Cushing's syndrome: Lessons from long-term follow-up. *Front.Horm.Res.*; 38:152-157  
IF: 4.875
- 05 Resmini E., Farkas C., Murillo B., Barahona M.J., Santos A., Martinez-Momblan M.A., Roig O., Ybarra J., Geli C., Webb S.M. Body composition after endogenous (Cushing's syndrome) and exogenous (rheumatoid arthritis) exposure to glucocorticoids. *Horm. Metab. Res.*; 42(8):613-618  
IF: 2.414

\* Total Impact Factor  
\*\* Mean Impact Factor



# Digestive Diseases

TEAM



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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.

**Clinical investigation:**

- Physiopathology, diagnosis, treatment and prevention of

bacterial infections, ascites and hepatorenal syndrome in cirrhosis.

- Diagnosis and treatment of hepatic encephalopathy in cirrhosis.
- Physiopathology, diagnosis, treatment and prevention of digestive haemorrhage due to portal hypertension of non-varicose origin.
- Chronic hepatitis B and C: diagnosis and treatment.
- Diagnosis and treatment of hepatocarcinoma.

- Physiopathology, diagnosis and treatment of intestinal inflammatory disease (inflammatory bowel disease).
- Polyps and colorectal cancer: epidemiology and early diagnosis.
- Diagnosis and treatment of acute pancreatitis.
- Prevention of acute pancreatitis post-ERCP.
- Chronic pancreatitis and pancreatic neoplasms: molecular studies, early detection and treatment.

Challenges

- Consolidate the CIBEREHD research group studying complications in cirrhosis.
- Expand the hepatology research lab and develop new research.
- Consolidate the AGAUR research group on portal hypertension.
- Consolidate the line of research on pancreatic illnesses.
- Consolidate the line of research on inflammatory bowel disease.
- Consolidate the line of research on polyps and colon cancer.
- Develop a line of research on digestive endoscopy.

Active grants

- Gómez, C. Double-blind randomized study of the effectiveness of the administration of bolus somatostat in followed by a brief intravenous infusion as prophylaxis for acute pancreatitis after performing an endoscopic retrograde cholangiopancreatography. Period: January 2009-December 2011. Expedient: EC08/00002.
- Guarner, C. Experimental model of induced or spontaneous bacterial peritonitis in rats with cirrhosis and ascites: characterization of humoral, hormonal and haemodynamic and evaluation of a new therapeutic strategy. Period: September 2009-December 2011. Expedient: PI08/0262.
- Soriano, G. Study of the benefits of a physical exercise programme and branched-chain amino acid supplements in the diet of patients with liver cirrhosis. Period: March 2010-March 2011. Expedient: MAPFRE 2009.
- Soriano, G. Study of the presence of bacterial DNA in ascitic liquid in cirrhotic patients with negative-culture spontaneous bacterial peritonitis. Period:



## Active grants

- January 2007-December 2010. Expedient: PI06/0431.
- Soriano, G. Relationship of polymorphisms of toll-like receptors TLR2, TLR4 and TLR9 with infection incidence, disease progression and inflammatory response in cirrhotic patients. Period: January 2010-December 2012. Expedient: PI09/0357.
  - Villanueva, C. Phase IV/I open clinical trial to individualize irinotecan dose as first-and second-line advanced colorectal cancer treatment according to UGT1A1 gene polymorphisms in the patient. Period: January 2009-December 2011. Expedient: EC08/00087.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Mones Xiol J. Patient's information. Extra-gastrointestinal manifestation of the gastroesophageal reflux. *Rev. Esp. Enferm. Dig.*; 102(6):391  
**IF: 1.13**
- 02** Guarner-Argente C., Gomez-Oliva C., Poca M., Sainz S., Marinello F.G., Villanueva C., Guarner C. Cholangitis caused by biliary hydatidosis. *Gastrointest Endosc.*; 72(6):1264-1265  
**IF: 5.608**
- 03** Domenech E., Zabana Y., Garcia-Planella E., Lopez San Román A., Nos P., Ginard D., Gordillo J., Martínez-Silva F., Beltrán B., MaNosa M., Cabré E., Gassull M.A. Clinical outcome of newly diagnosed Crohn's disease: A comparative, retrospective study before and after infliximab availability. *Aliment. Pharmacol. Ther.*; 31(2):233-239  
**IF: 3.861**
- 04** De Cid R., Ramos M.D., Aparisi L., Garcia C., Mora J., Estivill X., Farre A., Casals T. Independent contribution of common CFTR variants to chronic pancreatitis. *Pancreas*; 39(2):209-215  
**IF: 2.607**
- 05** Lucena M.I., Garcia-Martin E., Andrade R.J., Martinez C., Stephens C., Ruiz J.D., Ulzurrun E., Fernandez M.C., Romero-Gomez M., Castiella A., Planas R., Duran J.A., De Dios A.M., Guarner C., Soriano G., Borraz Y., Agundez J.A.G. Mitochondrial superoxide dismutase and glutathione peroxidase in idiosyncratic drug-induced liver injury. *Hepatology*; 52(1):303-312  
**IF: 10.885**
- 06** Guevara M., Baccaro M.E., Rios J., Martín-Llahi M., Uriz J., del Arbol L.R., Planas R., Monescillo A., Guarner C., Crespo J., Banares R.B., Arroyo V., Gines P. Risk factors for hepatic encephalopathy in patients with cirrhosis and refractory ascites: Relevance of serum sodium concentration. *Liver Int*; 30(8):1137-1142  
**IF: 3.84**
- 07** Soriano G., Castellote J., Alvarez C., Girbau A., Gordillo J., Baliellas C., Casas M., Pons C., Roman E.M., Maisterra S., Xiol X., Guarner C. Secondary bacterial peritonitis in cirrhosis: A retrospective study of clinical and analytical characteristics, diagnosis and management. *J. Hepatol.*; 52(1):39-44  
**IF: 9.334**
- 08** Zapico-Muniz E., Farre-Viladrich A., Rico-Santana N., Gonzalez-Sastre F., Mora-Brugues J. Standardized peptide profiling of human serum for the detection of pancreatic cancer. *Pancreas*; 39(8):1293-1298  
**IF: 2.607**
- 09** Guarner-Argente C., Sanchez E., Vidal S., Roman E., Concepcion M., Poca M., Sanchez D., Juarez C., Soriano G., Guarner C. Toll-like receptor 4 D299G polymorphism and the incidence of infections in cirrhotic patients. *Aliment. Pharmacol. Ther.*; 31(11):1192-1199  
**IF: 3.861**
- 10** Romero-Gomez M., Jover M., Del Campo J.A., Royo J.L., Hoyas E., Galan J.J., Montoliu C., Baccaro E., Guevara M., Cordoba J., Soriano G., Navarro J.M., Martinez-Sierra C., Grande L., Galindo A., Mira E., Manes S., Ruiz A. Variations in the promoter region of the glutaminase gene and the development of hepatic encephalopathy in patients with cirrhosis: A cohort study. *Ann. Intern. Med.*; 153(5):281-288  
**IF: 16.729**
- 11** Navarro S., Vaquero E., Maurel J., Bombi J.A., De Juan C., Feliu J., Fernandez Cruz L., Gines A., Girela E., Rodriguez R., Sabater L., representación del Grupo Español de Consenso en Cáncer de Páncreas, Club Español Biliopancreático (CEBP), Grupo Español Multidisciplinar de Cáncer Digestivo (GEMCAD), Sociedad Española de Diagnóstico por Imagen del Abdomen (SEDIA), Sociedad Española de Endoscopia Digestiva (SEED), la Sociedad Española de Anatomía Patológica (SEAP) (col. Farré A.). Recommendations for diagnosis, staging and treatment of pancreatic cancer (Part I). *Med. Clin.*; 134(14):643-655  
**IF: 1.413.**
- 12** Navarro S., Vaquero E., Maurel J., Bombi J.A., De Juan C., Feliu J., Fernandez Cruz L., Gineos A., Girela E., Rodriguez R., Sabater L., representación del Grupo Español de Consenso en Cáncer de Páncreas, Club Español Biliopancreático (CEBP), Grupo Español Multidisciplinar de Cáncer Digestivo (GEMCAD), Sociedad Española de Diagnóstico por Imagen del Abdomen (SEDIA), Sociedad Española de Endoscopia Digestiva (SEED), la Sociedad Española de Anatomía Patológica (SEAP) (col. Farré A.) Recommendations for diagnosis, staging and treatment of pancreatic cancer (Part II). *Med. Clin.*; 134(15):692-702  
**IF: 1.413.**
- 13** Colombel J.F., Sandborn W.J., Reinisch W., Mantzaris G.J., Kornbluth A., Rachmilewitz D., Lichtiger S., D'Haens G., Diamond R.H., Brousard D.L., Tang K.L., van der Woude C.J., Rutgeerts P., SONIC Study Group (col. Garcia Planella E.). Infliximab, azathioprine, or combination therapy for Crohn's disease. *N Engl J Med.*; 362(15):1383-95.  
**IF: 53.486**
- 14** Abuli A., Bessa X., Gonzalez J.R., Ruizponte C., Caceres A., Munoz J., Gonzalo V., Balaguer F., Fernandez C., Gonzalez D., De Castro L., Clofent J., Bujanda L., Cubiella J., Rene J.M., Morillas J.D., Lanas A., Rigau J., Garcia A.M., Latorre M., Salo J., Fernandez Banares F., Arguello L., Pena E., Vilella A., Riestra S., Carreno R., Paya A., Alenda C., Xicola R.M., Doyle B.J., Jover R., Llor X., Carracedo A., Castells A., Castellvbeli S., Andreu M. Susceptibility genetic variants associated with colorectal cancer risk correlate with cancer phenotype. *Gastroenterology*; 139(3): 788-796.  
**IF: 12.032**

\*TIF: 128.804 \*\*MIF: 9.200

\* Total Impact Factor  
\*\* Mean Impact Factor



# Microbiology and Infectious Diseases

TEAM



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Main lines of research

**CLINICAL MICROBIOLOGY UNIT**

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

**HIV AND AIDS UNIT**

- 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.

**INFECTIOUS PATHOLOGY UNIT**

- 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 UNIT**

**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 the 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 3 doctoral theses.





### Tuberculosis, epidemiology and resistance mechanisms:

- Prospective monitoring of primary and acquired Mycobacterium tuberculosis resistance to first- and 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 M. 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 service.

### Medical care projects:

- Continuing with the government health department agreement regarding the development of epidemiological surveillance support functions for nosocomial infections and flaccid paralysis.
- Study of mycoses in depth, especially invasive fusariosis and aspergillosis and respiratory tract viral infections in patients with onco-haematological diseases.
- Continuing with multicentre studies of HIV.
- Monitoring of congenital infection in pregnant patients with Chagas disease.

### HIV AND AIDS UNIT

#### 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 grant-aided research assistants (including a Rio Hortega-funded research assistant) and 2 nurses).
- Continuing with participation in multicentre projects (especially the AIDS network, Gesida, VACH, EuroSIDA and ART collaboration).
- Exploration of possible participation in clinical trials of new antiretroviral drugs.

- Increasing the number of HIV-1 infected patients attended to in our hospital (given current mortality rates, an estimated annual increase of 50 patients is required).
- Continuing with current clinical research and mixed basic research-clinical research lines.

### Pathogenic mechanisms altering body fat distribution:

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

### Metabolic disorders associated with antiretroviral treatment:

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

### Body composition:

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

### New antiretroviral drugs:

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

### Cardiovascular risk associated with antiretroviral treatment:

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

### Comorbid conditions associated with HIV-1 infection:

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

### Pharmacogenetics (toxicogenetics):

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



**AREA 2**

Genetic, Metabolic and Inflammatory Diseases

**Challenges**

**Bacterial meningitis:**

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

**INFECTIOUS PATHOLOGY UNIT**

**Restricted-use antibiotic and antimicrobial agent policies:**

Suitable use of antimicrobial agents:

- To minimize the appearance of resistance.
- To reduce cost.
- To improve compliance with surgical prophylaxis (at the time of administration).

**Epidemic outbreaks and infections caused by multiresistant microorganisms and microorganisms requiring isolation:**

- To study epidemiology for our hospital.
- To reduce incidence.
- To prevent/contain epidemic outbreaks in the hospital and to work with the microbiology department 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 in studies of resistance and in new treatment regimes for tuberculosis.

**Other care 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).

**Active grants**

- Coll, P. Red Spanish Network for Infectious Pathology Research (REIPI). Period: January 2007-December 2010. Expedient: RD06/0008/0013.
- De Benito, N. Comparative study of the effectiveness of 'short' and 'long' doses for the rifampin-levofloxacin combination in the early postoperative staphylococcal infection and haematogenous infection of prosthetic joints. Period: January 2009-December 2011. EC08/00135.
- Diestra, K. Predoctoral researcher contracts. Period: April 2006-April 2010. Expedient: 2006FI-B.
- Domingo, P. Prospective observational study of polymorphisms in pyrimidinemetabolic enzymes in the pathogenesis of lipodystrophy associated with HIV-1 and HAART-

based on thymidine analogues. Period: January 2009-December 2011. Expedient: EC08/00256.

- Domingo, P. AIDS Network. January 2007-December 2010. Expedient: RD06/0006/0022.
- Fernández, I. RIO HORTEGA Contract. February 2009-January 2012. Expedient: CM08/00238.
- Gurguí, M. Spanish Network for Infectious Pathology Research (REIPI). Clinical Group. Period: January 2008-December 2010. Expedient: RD06/0008/0007.
- Gutiérrez, M. Once daily antiretroviral therapy in naive patients with HIV-1 and with CD4lymphocyte counts below 100 cells/mm3. A prospective randomized, multicentre, openstudy. Advanz-3 study. Period: September 2007-Decem-

ber 2010. Expedient: EC07/90800.

- López-Contreras, J. Randomized intervention programme to optimize the use of antibiotics in nosocomial bacteraemia in a tertiary hospital. Period: December 2007-December 2010. Expedient: PI07/90288.
- Navarro, F. Study of the prevalence and epidemiology of betalactam resistance mediated by AmpC-plasmidbetalactamases and by carbapenemases in enterobacteria in Spain. Period: January 2010. December 2012. Expedient: PI09/0125.
- Sánchez, F. Creation of a multilingual web-based device for interactive continuing education for health professionals performing basis haematological test. Period: October 2009-September 2011.



\*TIF: 220.608 \*\*MIF: 4.242

## CLINICAL MICROBIOLOGY UNIT

- 01** Cortes P., Blanc V., Mora A., Dahbi G., Blanco J.E., Blanco M., Lopez C., Andreu A., Navarro F., Alonso M.P., Bou G., Blanco J., Llagostera M. Isolation and Characterization of Potentially Pathogenic Antimicrobial-Resistant *Escherichia coli* Strains from Chicken and Pig Farms in Spain. *Appl. Environ. Microbiol.*; 76(9):2799-2805  
**IF: 3.778**
- 02** Piñana J.L., Martino R., Barba P., Margall N., Roig M.C., Valcarcel D., Sierra J., Rabella N. Cytomegalovirus infection and disease after reduced intensity conditioning allogeneic stem cell transplantation: Single-centre experience. *Bone Marrow Transplant.*; 45(3):534-542  
**IF: 3.66**
- 03** Arias A., Seral C., Navarro F., Miro E., Coll P., Castillo F.J. Plasmid-mediated QnrS2 determinant in an *Aeromonas caviae* isolate recovered from a patient with diarrhoea. *Clin. Microbiol. Infect.*; 16(7):1005-1007  
**IF: 4.784**
- 04** Borrell S., Español M., Orcau T., Tudó G., March F., Cayla J. A., Jansa J. M., Alcaide F., Martín-Casabona N., Salvado M., Martínez J. A., Vidal R., Sánchez F., Altet N., Rey E., Coll P., González-Martín J. Tuberculosis transmission patterns among Spanish-born and foreign-born populations in the city of Barcelona. *Clin. Microbiol. Infect.*; 16(6):568-574  
**IF: 4.784**
- 05** Navarro F., Miro E., Mirelis B. Interpretive reading of enterobacteria antibiograms. *Enferm. Infec. Microbiol. Clin.*; 28(9):638-645  
**IF: 1.656**
- 06** Mata C., Miró E., Mirelis B., Garcilán-Barcia M.P., De La Cruz F., Coll P., Navarro F. In vivo transmission of a plasmid coharbouring blaDHA-1 and qnrB genes between *Escherichia coli* and *Serratia marcescens*. *FEMS Microbiol. Lett.*; 308(1):24-28  
**IF: 2.04**
- 07** Coelho A., González-López J.J., Miró E., Alonso-Tarres C., Mirelis B., Larrosa M.N., Bartolomé R.M., Andreu A., Navarro F., Johnson J.R., Prats G. Characterisation of the CTX-M-15-encoding gene in *Klebsiella pneumoniae* strains from

the Barcelona metropolitan area: Plasmid diversity and chromosomal integration. *Int. J. Antimicrob. Agents*; 36(1):73-78

**IF: 3.787**

- 08** Tudo G., Rey E., Borrell S., Alcaide F., Codina G., Coll P., Martín-Casabona N., Montemayor M., Moure R., Orcau A., Salvado M., Vicente E., González-Martín J. Characterization of mutations in streptomycin-resistant *Mycobacterium tuberculosis* clinical isolates in the area of Barcelona. *J. Antimicrob. Chemother.*; 65(11):2341-2346  
**IF: 4.659**
- 09** Miró E., Segura C., Navarro F., Sorli L., Coll P., Horcajada J.P., Álvarez-Lerma F., Salvado M. Spread of plasmids containing the blaVIM-1 and blaCTX-M genes and the qnr determinant in enterobacter cloacae, *klebsiella pneumoniae* and *klebsiella oxytoca* isolates. *J. Antimicrob. Chemother.*; 65(4):661-665  
**IF: 4.659**
- 10** Trallero G., Avellon A., Otero A., De Miguel T., Perez C., Rabella N., Rubio G., Echevarria J.E., Cabrerizo M. Enteroviruses in Spain over the decade 1998-2007: Virological and epidemiological studies. *J. Clin. Virol.*; 47(2):170-176  
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**IF: 4.262**
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- 51** Nahid P., Bliven E.E., Kim E.Y., Mac Kenzie W.R., Stout J.E., Diem L., Johnson J.L., Gagneux S., Hopewell P.C., Kato-Maeda M., Tuberculosis Trials Consortium (cols. Sambeat MA) Influence of *M. tuberculosis* lineage variability within a clinical trial for pulmonary tuberculosis. *PLoS One*; 5(5)  
**IF: 4.411**
- 52** Moreno A., Sanchez F., Nelson J., Miro J.M., Cayla J.A., Grupo de Trabajo de la UITB-TBTC (site 31) (cols. Sambeat MA) On the way to shortening tuberculosis treatments: clinical trials of the Unitat d' Investigació en Tuberculosis de Barcelona supported by the Centers for Disease Control and Prevention [En el camino para acortar los tratamientos de la tuberculosis: los ens. Gac. Sanit.; 24(2):171.e1-171.e6  
**IF: 1.114**



# Multi-organ Damage

TEAM



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Carme Rius	IR-HSCSP

Main lines of research

**Bone metabolism and osteoporosis:**

- Analysis of the genetic influence on osteoporosis by means of aggregation studies in families of 3 or more generations with a minimum of 15 members. Research on the influence of biological markers and the predictive capacity of whole body composition and bone mineral density of the hip and spine.
- Bone structure study with quantitative CT of hip and spine, analysing the contribution of trabecular and cortical components using HRCT.
- Study of biomechanical hip and spine resistance of hip and spine with HRCT using the QCT PRO software package.
- Study of bone resistance using the hip structural analysis system and DXA in members of different families.

**Hypertension and vascular risk:**

- Comparison of haemodynamic and vascular effects of ARAll + diuretics vs. ARAll + calcium antagonists.

Clinical management, general internal medicine and geriatrics:

- Health care quality indexes (mortality, readmissions, etc). Prospective data have been collected over the last year. Some initial findings have been published and presented at congresses.

**Rheumatology:**

1. Rheumatoid arthritis: Evaluation of lymphocyte (B) subpopulations and reactivation of disease after the depletion of B lymphocytes due to anti-CD20 (rituximab) treatment.
- Evaluation of innate immune and adaptive immune cell responses in rituximab treatment in the depletion and reactivation phases after depletion.
- Evaluation of serologic components in the reactivation of rheumatoid arthritis after reactivation with rituximab.
- Study of the LIRB1 polymorphisms in rheumatoid arthritis with absence of a shared epitope.

- Evaluation in the prognosis of rheumatoid arthritis.
- Pharmacokinetics of methotrexate in collaboration with Héctor Corominas and Montserrat Baiget.
- 2. Psoriasis: Evaluation of enthesitis by ECO-Doppler. In collaboration with Lluís Puig and Carmen Moragues.
- 3. Scleroderma: Patterns of capillaroscopy and correlation with auto-antibodies.
- 4. Gout: The patient's perspective.
- 5. Other studies: Study of biomarkers in biopsies of several joint disorders in collaboration with Frank Pesslerer and Ralf Shumaker. Evaluation of C1q, antibodies anti-C1q, properdin and other auto-antibodies in relation to lupus nephropathy in collaboration with José Ballarín at the Puigvert Foundation.



## Challenges

- The core goal is to develop and coordinate research in several internal medicine areas. More specifically our aims are as follows:
- To merge the hypertension and lipids departments in the HSCSP and create a vascular risk unit. This is currently being considered as a model that would enable us to work jointly with the the Puigvert Foundation hypertension unit.
- To establish stable work relations between the HSCSP bone metabolism and complex disease genomics units and the bone metabolism unit of Hospital del Mar-Municipal Institute for Medical Research (IMIM) and the Faculty of Biology of the University of Barcelona.
- To strengthen the ties between the HSCSP rheumatology and immunology departments regarding the study of immunological diseases.

## Active grants

- Casademont, J. Study of the genetic basis of osteoporosis and risk of hip fracture. Period: July 2008-July 2011. Expedient: 08/FMM.
- Casademont, J. Identification of the genetic factors influencing the risk to develop osteoporosis. Period: January 2009-December 2011. Expedient: PI08/0667.

\*TIF: 29.206 \*\*MIF: 2.655

## Scientific production

## INDEXED PUBLICATIONS

- 01** Naredo E., Batlle-Gualda E., Garcia-Vivar M.L., Garcia-Aparicio A.M., Fernandez-Sueiro J.L., Fernandez-Prada M., Giner E., Rodriguez-Gomez M., Pina M.F., Medina-Luezas J.A., Toyos F.J., Campos C., Gutierrez-Polo R., Ferrer M.A., Martinez O., Diaz-Torne C., Gonzalez T., Campos S., Queiro R., Castano-Sanchez M., Aznar J.J., Bustabad S., Paez-Camino M., Tuneu R., Ruiz T., Mateo L., Pujol M., Ponce A., Ros I., Gallegos A., Moreno J., Gumbau D., Sianes M., Poveda-Elices M.J., Romero-Gomez M., Raya E. Power doppler ultrasonography assessment of entheses in spondyloarthropathies: Response to therapy of enthesal abnormalities. *J. Rheumatol.*; 37(10):2110-2117  
**IF: 3.551**
- 02** Ogdie A., Li J., Dai L., Paessler M.E., Yu X., Diaz-Torne C., Akmatov M., Schumacher H.R., Pessler F. Identification of broadly discriminatory tissue biomarkers of synovitis with binary and multicategory receiver operating characteristic analysis. *Biomarkers*; 15(2):183-190  
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- 03** Smith E.U.R., Diaz-Torne C., Perez-Ruiz F., March L.M. Epidemiology of gout: An update. *Best Pract. Res. Clin. Rheumatol.*; 24(6):811-827  
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- 04** Garcia-Bordes L., Aguilera-Repiso J.A., Serfaty-Soler J.C., Collado-Fabregas F., Martinez-Montauti J., De Llobet-Zubiaga J.M., Gomez-Bonsfills X. An unusual case of spondylo-discitis. *Spine*; 35(5):E167-E171  
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- 06** Resmini E., Farkas C., Murillo B., Barahona M.J., Santos A., Martinez-Momblan M.A., Roig O., Ybarra J., Geli C., Webb S.M. Body composition after endogenous (Cushing's syndrome) and exogenous (rheumatoid arthritis) exposure to glucocorticoids. *Horm. Metab. Res.*; 42(8):613-618  
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- 07** Vinyoles E., Rodriguez-Blanco T., de la Sierra A., Felip A., Banegas J.R., de la Cruz J.J., Gorostidi M., Sobrino J., Segura J., Roca-Cusachs A., Ruilope L.M., Spanish Society of Hypertension ABPM Registry Investigators Isolated clinic hypertension: diagnostic criteria based on 24-h blood pressure definition. *J. Hypertens.*; 28(12):2407-2413  
**IF: 3.98**
- 08** Sans Atxer L., Roca-Cusachs A., Torra R., Calero F., Arias P., Ballarin J., Fernandez-Llama P. Relationship between renal size and blood pressure profile in patients with autosomal dominant polycystic kidney disease without renal failure. *Nefrologia*; 30(5):567-572  
**IF: 0.738**
- 09** Branco J.C., Zachrisson O., Perrot S., Mainguy Y. (col. Rodriguez de la Serna A.) A European multicenter randomized double-blind placebo-controlled monotherapy clinical trial of milnacipran in treatment of fibromyalgia. *J. Rheumatol.*; 37(4):851-859  
**IF: 3.551**
- 10** Jimenez-Navarro M.F., Ramirez-Marrero M.A., Anguita-Sanchez M., Castillo J.C. (col. Ruiz Hidalgo D.) Influence of gender on long-term prognosis of patients with chronic heart failure seen in heart failure clinics. *Clin. Cardiol.*; 33(3):E13-E18  
**IF: 1.807**
- 11** Lyritis G., Marin F., Barker C., Pfeifer M., Farrerons J., Brixen K., Del Pino J., Keen R., Nickelsen T.N. Back pain during different sequential treatment regimens of teriparatide: Results from EURO-FORS. *Curr. Med. Res. Opin.*; 26(8):1799-1807  
**IF: 2.609**

\* Total Impact Factor  
\*\*Mean Impact Factor



# Genetic Diseases

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Main lines of research

- Pharmacogenetics: genetic determinants in drug-response profiles.
- Monogenic muscular disorders: dystrophinopathies, dysferlinopathies, limb girdle dystrophies. Myotonic dystrophy.
- Hereditary breast/ovarian cancer.
- Motor neuron disorders: pathogenic mechanisms during human development and validation of biological markers for therapeutic follow-up.
- Monogenic blood disorders: genetic determinants of haemochromatosis. Genetic and structural analysis of the factor VIII gene.

Challenges

**Pharmacogenetics:**

- Study of VEGF-related genes as pharmacogenetic markers for cancer treatment.
- Analysis of metabolic folate pathway genes in therapeutic protocols.

**Muscular dystrophies:**

Study of post-transcriptional regulation of the dystrophin gene using nonsense-mediated decay analysis in DNA from patients with Duchenne muscular dystrophy.

**Hereditary breast/ovarian cancer:**

- DNA studies to classify DNA variants found in the BRCA1 and BRCA2 genes as pathogenic or neutral.
- Study of CTCs as prognostic markers of response to treatment, overall and disease-free survival in patients with locally advanced and disseminated breast cancer.

**Hereditary motor neurone diseases:**

- Development of organotypic cultures from bone marrow and muscle, and generation of iPS from fibroblasts or keratinocytes from patients.
- Broadening the spectrum of study of motor neuron diseases such as bulbar and spinal muscular atrophy, distal muscular atrophies and amyotrophic lateral sclerosis.

**Monogenic hereditary haematological diseases:**

Study of genetic factors in the appearance of inhibitors to treatment with factor VIII and in the variability of phenotypic expression in haemophilia A.





## Active grants

- Baiget, M. Pharmacogenetic and pharmacogenomic studies of solid tumour treatments (colorectal cancer and advanced rectal cancer). Period: January 2009-December 2011. Expedient: PI08/0199.
- Gallano, P. Study of messenger RNA of the gene for Duchenne muscular dystrophy (DMD): interference of the mRNA degradation mechanism mediated by nonsense mutations (nonsense-mediated decay) in suppression therapy for premature termination codons. Period: January 2009-December 2011. Expedient: PI08/0347.
- Tizzano, E. Study of the involvement of the poliovirus receptor (PVR) and androgen receptor (AR) in infantile spinal muscular atrophy. Period: January 2009-December 2011. Expedient: PI08/0729.
- Tizzano, E. Defining Targets for Therapeutics in Spinal Muscular Atrophy. GENAME Project. Period: March 2007-May 2010. Expedient: 07/GENAME.

## Scientific production

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- \*TIF: 75.479 \*\*MIF: 4.193**
- 01 Aparisi M.J., Garcia-Garcia G., Jaijo T., Rodrigo R., Graziano C., Seri M., Simsek T., Simsek E., Bernal S., Baiget M., Perez-Garrigues H., Aller E., Maria Millan J. Novel mutations in the USH1C gene in Usher syndrome patients. *Mol. Vis.*; 16():2948-2954  
**IF: 2.511**
- 02 Paez D., Pare L., Altes A., Sancho-Poch F.J., Petriz L., Garriga J., Monill J.M., Salazar J., Rio E.D., Barnadas A., Marcuello E., Baiget M. Thymidylate synthase germline polymorphisms in rectal cancer patients treated with neoadjuvant chemoradiotherapy based on 5-fluorouracil. *J. Cancer Res. Clin. Oncol.*; 136(11):1681-1689  
**IF: 2.485**
- 03 Lasa A., Ramon y Cajal T., Llorc G., Suela J., Cigudosa J.C., Cornet M., Alonso C., Barnadas A., Baiget M. Copy number variations are not modifiers of phenotypic expression in a pair of identical twins carrying a BRCA1 mutation. *Breast Cancer Res. Treat.*; 123(3):901-905  
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- 04 Paez D., Pare L., Espinosa I., Salazar J., del Rio E., Barnadas A., Marcuello E., Baiget M. Immunoglobulin G fragment C receptor polymorphisms and KRAS mutations: Are they useful biomarkers of clinical outcome in advanced colorectal cancer treated with anti-EGFR-based therapy? *Cancer Sci.*; 101(9):2048-2053  
**IF: 3.846**
- 05 Gesteira A., Barros F., Martin A., Perez V., Cortes A., Baiget M., Carcedo A. Pharmacogenetic studies on the antipsychotic treatment. Current status and perspectives. *Actas Esp. Psiquiatr.*; 38(5):301-316  
**IF: 0.695**
- 06 Bernal S., Alias L., Barcelo M.J., Also-Rallo E., Martinez-Hernandez R., Gamez J., Guillen-Navarro E., Rosell J., Hernando I., Rodriguez-Alvarez F.J., Borrego S., Millan J.M., Hernandez-Chico C., Baiget M., Fuentes-Prior P., Tizzano E.F. The c.859G>C variant in the SMN2 gene is associated with types II and III SMA and originates from a common ancestor. *J. Med. Genet.*; 47(9):640-642  
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- 07 Pereiro I., Valverde D., Pineiro-Gallego T., Baiget M., Borrego S., Ayuso C., Searby C., Nishimura D. New mutations in BBS genes in small consanguineous families with Bardet-Biedl syndrome: Detection of candidate regions by homozygosity mapping. *Mol. Vis.*; 16():137-143  
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- 08 Pare L., Paez D., Salazar J., Del Rio E., Tizzano E., Marcuello E., Baiget M. Absence of large intragenic rearrangements in the DPYD gene in a large cohort of colorectal cancer patients treated with 5-FU-based chemotherapy. *Br. J. Clin. Pharmacol.*; 70(2):268-272  
**IF: 3.063**
- 09 Domingo P., Cabeza M.C., Pruvost A., Salazar J., Maria D.M.G., Mateo M.G., Domingo J.C., Fernandez I., Villarroya F., Munoz J., Vidal F., Baiget M. Relationship between HIV/highly active antiretroviral therapy (HAART)-associated lipodystrophy syndrome and stavudine-triphosphate intracellular levels in patients with stavudine-based antiretroviral regimens. *Clin. Infect. Dis.*; 50(7):1033-1040  
**IF: 8.186**
- 10 Freixenet N., Moreno-Rosel M.S., Barcelo M.J., Serrano A., Paya M., Crespo L., Perez-Lucena M.J., Altes A., Baiget M., Felez J. Detection of hereditary hemochromatosis and biochemical iron overload in primary care: A multicenter case finding study in Spain. *Am. J. Hematol.*; 85(4):294-296  
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- 11 Jaijo T., Aller E., Garcia-Garcia G., Aparisi M.J., Bernal S., Avila-Fernandez A., Barragan I., Baiget M., Ayuso C., Antinolo G., Diaz-Llopis M., Kulm M., Beneyto M., Najera C., Millan J.M. Microarray-based mutation analysis of 183 Spanish families with Usher syndrome. *Invest. Ophthalmol. Vis. Sci.*; 51(3):1311-1317  
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- 12 Milne R.L., Osorio A., Ramon Y Cajal T., Baiget M., Lasa A., Diaz-Rubio E., De La Hoya M., Caldes T., Teule A., Lazaro C., Blanco I., Balmana J., Sanchez-Olle G., Vega A., Blanco A., Chirivella I., Esteban Cardenosa E., Duran M., Velasco E., Martinez De Duenas E., Tejada M.-I., Miramar M.-D., Calvo M.-T., Guillen-Ponce C., Salazar R., San Roman C., Urioste M., Benitez J. Parity and the risk of breast and ovarian cancer in BRCA1 and BRCA2 mutation carriers. *Breast Cancer Res. Treat.*; 119(1):221-232  
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- 13 Ramon Y Cajal T., Altes A., Pare L., Del Rio E., Alonso C., Barnadas A., Baiget M. Impact of CYP2D6 polymorphisms in tamoxifen adjuvant breast cancer treatment. *Breast Cancer Res. Treat.*; 119(1):33-38  
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- 14 Febrer A., Rodriguez N., Alias L., Tizzano E. Measurement of muscle strength with a handheld dy-

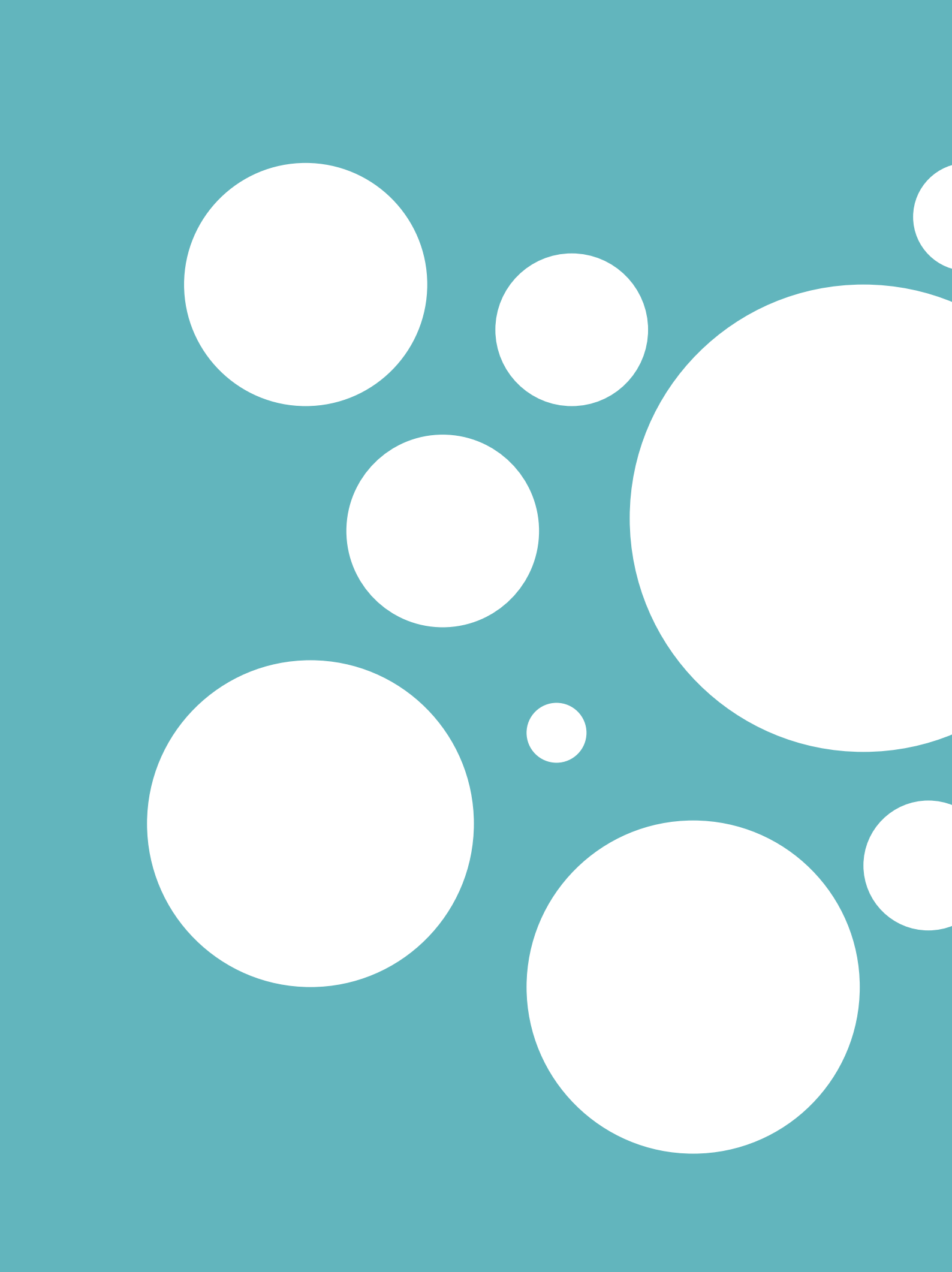


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- 15** Antoniou A.C., Beesley J., McGuffog L., Sinilnikova O.M., Healey S., Neuhausen S.L., Ding Y.C., Rebbeck T.R., Weitzel J.N., Lynch H.T., Isaacs C., Ganz P.A., Tomlinson G., Olopade O.I., Couch F.J., Wang X., Lindor N.M., Pankratz V.S., Radice P., Manoukian S., Peissel B., Zafaroni D., Barile M., Viel A., Allavena A., Dall'Olio V., Peterlongo P., Szabo C.I., Zikan M., Claes K., Poppe B., Foretova L., Mai P.L., Greene M.H., Rennert G., Lejbkowitz F., Glendon G., Ozelik H., Andrulis I.L., Thomassen M., Gerdes A.-M., Sunde L., Cruger D., Jensen U.B., Caligo M., Friedman E., Kaufman B., Laitman Y., Milgrom R., Dubrovsky M., Cohen S., Borg A., Jernstrom H., Lindblom A., Rantala J., Stenmark-Askmalm M., Melin B., Nathanson K., Domchek S., Jakubowska A., Lubinski J., Huzarski T., Osorio A., Lasa A., Duran M., Tejada M.-I., Godino J., Benitez J., Hamann U., Kriege M., Hoogerbrugge N., Van Der Luijt R.B., Van Asperen C.J., Devilee P., Meijers-Heijboer E.J., Blok M.J., Aalfs C.M., Hogervorst F., Rookus M., Cook M., Oliver C., Frost D., Conroy D., Evans D.G., Lalloo F., Pichert G., Davidson R., Cole T., Cook J., Paterson J., Hodgson S., Morrison P.J., Porteous M.E., Walker L., Kennedy M.J., Dorkins H., Peock S., Godwin A.K., Stoppa-Lyonnet D., De Pauw A., Mazoyer S., Bonadona V., Lasset C., Dreyfus H., Leroux D., Hardouin A., Berthet P., Faivre L., Loustalot C., Noguchi T., Sobol H., Rouleau E., Nogues C., Frenay M., Venat-Bouvet L., Hopper J.L., Daly M.B., Terry M.B., John E.M., Buys S.S., Yassin Y., Miron A., Goldgar D., Singer C.F., Dressler A.C., Gschwantler-Kaulich D., Pfeiler G., Hansen T.V.O., Jnson L., Agnarsson B.A., Kirchoff T., Offit K., Devlin V., Dutra-Clarke A., Piedmonte M., Rodriguez G.C., Wakeley K., Bogge J.F., Basil J., Schwartz P.E., Blank S.V., Toland A.E., Montagna M., Casella C., Imyanitov E., Tihomirova L., Blanco I., Lazaro C., Ramus S.J., Sucheston L., Karlan B.Y., Gross J., Schmutzler R., Wappenschmidt B., Engel C., Meindl A., Lochmann M., Arnold N., Heidemann S., Varon-Mateeva R., Niederacher D., Sutter C., Deissler H., Gatzicki D., Preisler-Adams S., Kast K., Schonbuchner I., Caldes T., De La Hoya M., Aittomaki K., Nevanlinna H., Simard J., Spurdle A.B., Holland H., Chen X., Platte R., Chenevix-Trench G., Easton D.F. Common breast cancer susceptibility alleles and the risk of breast cancer for BRCA1 and BRCA2 mutation carriers: Implications for risk prediction. *Cancer Res.*; 70(23):9742-9754  
**IF: 8.234**
- 16** Infante M., Duran M., Lasa A., Acedo A., De La Hoya M., Esteban-Cardenosa E., Sanz D.J., Perez-Cabornero L., Lastra E., Miner C., Velasco E.A. Two founder BRCA2 mutations predispose to breast cancer in young women. *Breast Cancer Res. Treat.*; 122(2):567-571  
**IF: 4.859**
- 17** Martin-Salces M., Vencesla A., Alvarez-Roman M.T., Rivas I., Fernandez I., Butta N., Baena M., Fuentes-Prior P., Tizzano E.F., Jimenez-Yuste V. Clinical and genetic findings in five female patients with haemophilia A: Identification of a novel missense mutation, p.Phe2127Ser. *Thromb. Haemost.*; 104(4):718-723  
**IF: 4.701**
- 18** Hasanzad M., Azad M., Kahrizi K., Saffar B.S., Nafisi S., Keyhanidoust Z., Azimian M., Refah A.A., Also E., Urtizberea J.A., Tizzano E.F., Najmabadi H. Carrier frequency of SMA by quantitative analysis of the SMN1 deletion in the Iranian population. *Eur. J. Neurol.*; 17(1):160-162  
**IF: 3.765**

\* Total Impact Factor

\*\* Mean Impact Factor





### AREA 3

# Haematological and Oncological Diseases

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**Main lines of research**

**Clinical research:**

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

**Translational research:**

- 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 tumour, DNA and serum bank for patients with cancer diagnosed and treated in our hospital.
- Develop new early-stage drugs (phase 0/1 studies).

**Active grants**

- Marcuello, E. Phase IV/I open clinical trial to individualize the irinotecan dose as first-and second-line advanced colorectal cancer treatment according to UGT1A1 gene polymorphisms in the patient. Period: October 2007-September 2010. Expedient: EC07/90232.
- Páez, D. Río Hortega Postdoctoral Contract. February 2009-January 2012. CM08/00065.
- Ramón y Cajal, T. Predoctoral Training Grant (FIS). Period: January 2010-December 2012. Expedient: PI09/1024.
- Tibau, A. Biological markers predictive of response to primary chemotherapy with anthracyclines and taxanes in breast cancer. Period: January 2010-May 2011. Expedient: SEOM 2009.



\*TIF: 172.36 \*\*MIF: 5.94

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- 01** Bellmunt J., Maroto-Rey P, Trigo J.M., Carles J., Guillem V., Lopez-Martin J.A., Anton-Torres A., Urruticoechea L. A phase II trial of first-line sorafenib in patients with metastatic renal cell carcinoma unwilling to receive or with early intolerance to immunotherapy: SOGUG Study 06-01. *Clin. Transl. Oncol.*; 12(7):503-508  
**IF: 1.254**
- 02** Pare L., Paez D., Salazar J., Del Rio E., Tizzano E., Marcuello E., Baiget M. Absence of large intragenic rearrangements in the DPYD gene in a large cohort of colorectal cancer patients treated with 5-FU-based chemotherapy. *Br. J. Clin. Pharmacol.*; 70(2):268-272  
**IF: 3.063**
- 03** Hoskins P., Vergote I., Cervantes A., Tu D., Stuart G., Zola P., Poveda A., Provencher D., Katsaros D., Ojeda B., Ghatage P., Grimshaw R., Casado A., Elit L., Mendiola C., Sugimoto A., D'Hondt V., Oza A., Germa J.R., Roy M., Brotto L., Chen D., Eisenhauer E.A. Advanced ovarian cancer: Phase III randomized study of sequential cisplatin-topotecan and carboplatin-paclitaxel vs carboplatin-paclitaxel. *J. Natl. Cancer Inst.*; 102(20):1547-1556  
**IF: 14.697**
- 04** Engel C., Versmold B., Wappenschmidt B., Simard J., Easton D.F., Peock S., Cook M., Oliver C., Frost D., Mayes R., Evans D.G., Eeles R., Paterson J., Brewer C., McGuffog L., Antoniou A.C., Stoppa-Lyonnet D., Sinilnikova O.M., Barjhoux L., Frenay M., Michel C., Leroux D., Dreyfus H., Toulas C., Gladieff L., Uhrhammer N., Bignon Y.-J., Meindl A., Arnold N., Varon-Mateeva R., Niederacher D., Preisler-Adams S., Kast K., Deissler H., Sutter C., Gadzicki D., Chenevix-Trench G., Spurdle A.B., Chen X., Beesley J., Olsson H., Kristoffersson U., Ehrencrona H., Liljegren A., Van Der Luijt R.B., Van Os T.A., Van Leeuwen F.E., Domchek S.M., Rebbeck T.R., Nathanson K.L., Osorio A., Ramon Y Cajal T., Konstantopoulou I., Benitez J., Friedman E., Kaufman B., Laitman Y., Mai P.L., Greene M.H., Nevanlinna H., Aittomaki K., Szabo C.I., Caldes T., Couch F.J., Andrulis I.L., Godwin A.K., Hamann U., Schmutzler R.K. Association of the variants CASP8 D302H and CASP10 V410I with breast and ovarian cancer risk in BRCA1 and BRCA2 mutation carriers. *Cancer Epidemiol. Biomarkers Prev.*; 19(11):2859-2868  
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- 05** Villavicencio H., Rodriguez Faba O., Palou J., Gausa L., Algaba F., Marcuello E. Bladder preservation strategy based on combined therapy in patients with muscle-invasive bladder cancer: Management and results at long-term follow-up. *Urol.Int.*; 85(3):281-286  
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- 06** Alfaro I., Ocana T., Castells A., Cordero C., Ponce M., Ramon Y Cajal T., Andreu M., Bujanda L., Herraiz M., Hervás Molina A.J., Fernandez-Banares F., Riestra-Menendez S., Gargallo C., Ruiz A., Bustamante M., Blanco I., De Juan F.M. Characteristics of patients with familial adenomatous polyposis in Spain. First results of the Spanish Registry of Familial Adenomatous Polyposis. *Med. Clin.*; 135(3):103-108  
**IF: 1.413**
- 07** Lasa A., Ramon y Cajal T., Llorca G., Suela J., Cigudosa J.C., Cornet M., Alonso C., Barnadas A., Baiget M. Copy number variations are not modifiers of phenotypic expression in a pair of identical twins carrying a BRCA1 mutation. *Breast Cancer Res. Treat.*; 123(3):901-905  
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- 09** Berrocal A., Perez Segura P., Gil M., Balana C., Garcia Lopez J., Yaya R., Rodriguez J., Reynes G., Gallego O., Iglesias L. Extended-schedule dose-dense temozolomide in refractory gliomas. *J. Neuro-Oncol.*; 96(3):417-422  
**IF: 2.929**
- 10** Maurel J., Martins A.S., Poveda A., Lopez-Guerrero J.A., Cubedo R., Casado A., Martinez-Trufero J., Ayuso J.R., Lopez-Pousa A., Garcia-Albeniz X., Del Muro X.G., De Alava E. Imatinib plus low-dose doxorubicin in patients with advanced gastrointestinal stromal tumors refractory to high-dose imatinib: A phase I-II study by the Spanish group for research on sarcomas. *Cancer*; 116(15):3692-3701  
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**IF: 3.846**
- 12** Ramon Y Cajal T., Altes A., Pare L., Del Rio E., Alonso C., Barnadas A., Baiget M. Impact of CYP2D6 polymorphisms in tamoxifen adjuvant breast cancer treatment. *Breast Cancer Res. Treat.*; 119(1):33-38  
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- 13** Borrás E., Pineda M., Blanco I., Jewett E.M., Wang F., Teule A., Caldes T., Urioste M., Martínez-Bouzas C., Brunet J., Balmana J., Torres A., Ramon Y Cajal T., Sanz J., Pérez-Cabornero L., Castellvi-Bel S., Alonso A., Lanás A., González S., Moreno V., Gruber S.B., Rosenberg N.A., Mukherjee B., Lázaro C., Capella G. MLH1 founder mutations with moderate penetrance in Spanish Lynch syndrome families. *Cancer Res.*; 70(19):7379-7391  
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- 14** Gianni L., Eiermann W., Semiglazov V., Manikhas A., Lluch A., Tjulandin S., Zambetti M., Vazquez F., Byakhov M., Lichinitser M., Climent M.A., Ciruelos E., Ojeda B., Mansutti M., Bozhok A., Baronio R., Feyereislova A., Barton C., Valgussa P., Baselga J. Neoadjuvant chemotherapy with trastuzumab followed by adjuvant trastuzumab versus neoadjuvant chemotherapy alone, in patients with HER2-positive locally advanced breast cancer (the NOAH trial): a randomised controlled superiority trial with a parallel HER2-negative cohort. *Lancet*; 375(9712):377-384  
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- 58(2):307-310  
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- 17 Milne R.L., Osorio A., Ramon Y Cajal T., Baiget M., Lasa A., Diaz-Rubio E., De La Hoya M., Caldes T., Teule A., Lazaro C., Blanco I., Balmana J., Sanchez-Olle G., Vega A., Blanco A., Chirivella I., Esteban Cardenosa E., Duran M., Velasco E., Martinez De Duenas E., Tejada M.-I., Miramar M.-D., Calvo M.-T., Guillen-Ponce C., Salazar R., San Roman C., Urioste M., Benitez J. Parity and the risk of breast and ovarian cancer in BRCA1 and BRCA2 mutation carriers. *Breast Cancer Res. Treat.*; 119(1):221-232  
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- 18 Aapro M., Schwenkglens M., Lyman G.H., Lopez Pousa A., Lawrinson S., Skacel T., Bacon P., von Minckwitz G. Pegfilgrastim primary prophylaxis vs. current practice neutropenia management in elderly breast cancer patients receiving chemotherapy. *Crit. Rev. Oncol./Hematol.*; 74(3):203-210  
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- 21 Duran M., Perez E., Abanades S., Vidal X., Saura C., Majem M., Arriola E., Rabanal M., Pastor A., Farre M., Rams N., Laporte J.-R., Capella D. Preliminary efficacy and safety of an oromucosal standardized cannabis extract in chemotherapy-induced nausea and vomiting. *Br. J. Clin. Pharmacol.*; 70(5):656-663  
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- 25 Perez Segura P., Guillen Alonso C., Ramon Y Cajal T., Serrano Blanch R., Aranda E. TTD consensus document on the diagnosis and management of hereditary colorectal cancer. *Clin. Transl. Oncol.*; 12(5):356-366  
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- 26 Martinez-Balibrea E., Abad A., Martinez-Cards A., Gines A., Valladares M., Navarro M., Aranda E., Marcuello E., Benavides M., Masuti B., Carrato A., Layos L., Manzano J.L., Moreno V. UGT1A and TYMS genetic variants predict toxicity and response of colorectal cancer patients treated with first-line irinotecan and fluorouracil combination therapy. *Br. J. Cancer*; 103(4):581-589  
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- 27 Calvo E., Maroto P., Del Muro X.G., Climent M.A., Gonzalez-Larriba J.L., Esteban E., Lopez R., Paz-Ares L., Bellmunt J., Castellano D. Update from the Spanish Oncology Genitourinary Group on the treatment of advanced renal cell carcinoma: Focus on special populations. *Cancer Metastasis Rev.*; 29(SUPPL. 1):S11-S20  
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- 28 Calvo E., Maroto P., Del Muro X.G., Climent M.A., Gonzalez-Larriba J.L., Esteban E., Lopez R., Paz-Ares L., Bellmunt J., Castellano D. Updated recommendations from the Spanish Oncology Genitourinary Group on the treatment of advanced renal cell carcinoma. *Cancer Metastasis Rev.*; 29(SUPPL. 1):S1-S10  
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- 29 Sanz J., Ramon Y Cajal T., Torres A., Darder E., Gadea N., Velasco A., Fortuny D., Lopez C., Fisas D., Brunet J., Alonso M.C., Balmana J. Uptake of predictive testing among relatives of BRCA1 and BRCA2 families: A multicenter study in northeastern Spain. *Fam. Cancer*; 9(3):297-304  
IF: 2.139

\* Total Impact Factor

\*\*Mean Impact Factor





# Ear, Nose and Throat Cancers

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## Main lines of research

- Genetic and molecular predictors of response to head and neck cancer: collaboration with the Oncogene and Antitumour Drug Group.
- Molecular mechanisms of inflammation in head and neck cancer: collaboration 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.

## Active grants

León, X. Study of PGE-synthetase isoenzymes in head and neck lines of squamous cell carcinoma and their role in regulating gene expression of tumour progression. Period: January 2009-December 2011. Expedient: PI08/0537.

## Challenges

Promote clinical and translational research in the field of head and neck cancer with a database containing a very large series of head and neck cancers. We aim to study relevant clinical issues in depth (second-third neoplasms, staging concerns, prognostic factors, etc.) and investigate translational aspects such as genetic and molecular predictors.

**\*TIF: 4.063 \*\*MIF: 2.031**

## Scientific production

### INDEXED PUBLICATIONS

- 01 Lean X., Martinez V., Lopez M., Garcia J., Quer M. Risk of third and fourth tumors in patients with head and neck cancer. *Head Neck-J. Sci. Spec. Head Neck*; 32(11):1467-1472  
**IF: 2.182**
- 02 Gras-Cabrerizo J.R., Montserrat-Gili J.R., Massegur-Solench H., Leon-Vintro X., De Juan J., Fabra-Llopis J.M. Management of sinonasal inverted papillomas and comparison of classification staging systems. *Am. J. Rhinol. Allergy*; 24(1):66-69  
**IF: 1.881**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Oncogenes and Antitumour Drugs

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Main lines of research

- Study of the role of oncogenes (K-ras, PI3K, B-Raf, Rac1, etc.) in colorectal cancer metastasis in humans and the development of prognostic molecular markers.
- Development of an inhibitor of focal adhesion as an anti-cancer agent in acute myeloid leukaemia and non-Hodgkin B lymphoma and study of its mechanism of action.
- Development of molecular markers predictive of the response to genotoxic therapy in head and neck squamous cell carcinoma

Challenges

- Obtain funding for increased staffing (the provision of stable employment for 2 currently contracted researchers (e.g., FIS funding) and the employment of 2 part-time clinicians (e.g., FIS research intensification or postresidence contract funding) and 2 postdoctoral fellows).
- Foster the clinical translation of findings for each of the group's research lines aimed at using molecular markers in clinical and therapeutic decision making for head and neck and colorectal carcinomas, non-Hodgkin lymphoma and acute myeloid leukaemia.
- Foster innovative aspects of the group's research lines, especially in nanomedicine and drug development, so as to develop 2 new projects with biopharmaceutical companies that generate at least 2 patents and ensure a financial return once established.
- Make the group more global by establishing closer ties with international partners and groups and by participating in EU or US projects.

Active grants

- Álamo, P. AGAUR FI contract. Period: January 2009-December 2012. Expedient: 2009FI-DGR.
- Mangués, R. Development of a new pyrazoline derivative for the treatment of human B cell lymphoma. Period: January 2007-April 2010. Expedient: PI06/1294.
- Mangués, R. Focal adhesionsignalling in human acute myeloid leukaemia. Prognostic significance and preclinical development of a new pyrazoline derivative with inhibitory effects. Period: January 2009-December 2011. Expedient: PI08/0672.
- Mangués, R. Improved metastasis efficiency in a model of human colorectal cancer and the effect of the K-RAS oncogene in the transition from micro-to macro-metastases. Period: January 2010-December 2012. Expedient: PI09/0965.
- Mangués, R. FIS. Period: January 2010-December 2013. Expedient: RD09/0076/00081.
- Mangués, R. Development and mechanistic study of an animal model of human colorectal cancer metastasis by K-RAS and B-RAF expression. Period: January 2009-April 2010. Expedient: SAF08-04702-C02.
- Mangués, R. MICINN. Period: December 2010-December 2013. PIB2010BZ-00563.
- Mangués, R. Agreement with the Department of Health: Researcher stability. January 2006-December 2010. Expedient: 06/DPT SALUT.
- Mangués, R. Grants to support research groups in Catalonia. Oncogene and Antitumour Group. Period: September 2009-December 2013. Expedient: 2009SGR 1437.

**\*TIF: 5.224 \*\*MIF: 5.224****Scientific production****INDEXED PUBLICATIONS**

- 01 Cespedes M.V., Larriba M.J., Pavon M.A., Alamo P., Casanova I., Parreno M., Feliu A., Sancho F.J., Munoz A., Manges R. Site-dependent E-cadherin cleavage and nuclear translocation in a metastatic colorectal cancer model. *Am. J. Pathol.*; 177(4):2067-2079  
**IF: 5.224**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Haematological Diagnosis

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Main lines of research

**Malignant haemopathies:**

- Diagnosis and morphological, immunophenotyping, cytogenetic and molecular characterization of malignant haemopathies, particularly acute leukaemias.
- Impact of biological characteristics in response to treatment.
- Studies of new treatments aimed at molecular targets using cell line models.

- Application of the genomic platform (microarrays) and proteomic platform to the diagnosis of malignant haemopathies.

**Non-neoplastic haemopathies:**

- Diagnosis and characterization of thrombocytopenias, thrombocytopenias and other platelet pathologies, especially complex pathologies (of genetic, mixed or unknown origin) and including unusual presentations of common diseases.

- Study of the relationship between platelets and thrombotic phenomena, including clinical, diagnostic and therapeutic aspects.
- 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 the functional structure of the group that characterizes haematological tumours and complex, rare and genetic nonneoplastic 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 neoplastic and non-neoplastic pathologies.
- Develop functional models: cell cultures and simple animal models.
- Consolidate cooperation with the GAIT-2 project, especially regarding platelet and other blood cell participation in the generation of thrombosis.
- Promote interaction with other hospital groups (clinical haematology, pathology, gastrointestinal, haemostasis and thrombosis, complex disease genomics) and with other centres in Spain and abroad, especially those with complementary technologies and groups with which stable links can be established.

Active grants

- Nomdedéu, J. Mutational analysis of WT-1 in acute leukaemia: prognostic impact and association with other genetic lesions. Period: July 2008-July 2011. Expedient: 08/FMM.
- Pujol, N. Identification of the genetic factors that determine fibrinogen levels in the Spanish population. Period: January 2010. December 2011. Expedient: PI08/0756.



## INDEXED PUBLICATIONS

- 01** Espinosa L., Cathelin S., D'Altri T., Trimarchi T., Statnikov A., Guiu J., Rodilla V., Ingles-Esteve J., Nomdedeu J., Bellosillo B., Besses C., Abdel-Wahab O., Kucine N., Sun S.-C., Song G., Mullighan C.C., Levine R.L., Rajewsky K., Aifantis I., Bigas A. The Notch/Hes1 pathway sustains NF- $\kappa$ B activation through CYLD repression in T cell leukemia. *Cancer Cell*; 18(3):268-281  
**IF: 26.925**
- 02** Delgado J., Aventin A., Briones J., Sanchez J., Nomdedeu J., Sierra J. The use of tetradecanoylphorbol acetate-stimulated peripheral blood cells enhances the prognostic value of interphase fluorescence in situ hybridization in patients with chronic lymphocytic leukemia. *Gene Chromosomes Cancer*; 49(4):327-332  
**IF: 3.99**
- 03** Scandurra M., Mian M., Greiner T.C., Rancoita P.M., De Campos C.P., Chan W.C., Vose J.M., Chigrinova E., Inghirami G., Chiappella A., Baldini L., Ponzoni M., Ferreri A.J., Franceschetti S., Gaidano G., Montes-Moreno S., Piris M.A., Facchetti F., Tucci A., Nomdedeu J.F., Lazure T., Lambotte O., Uccella S., Pinotti G., Pruneri G., Martinelli G., Young K.H., Tibiletti M.G., Rinaldi A., Zucca E., Kwee I., Bertoni F. Genomic lesions associated with a different clinical outcome in diffuse large B-Cell lymphoma treated with R-CHOP-21. *Br. J. Haematol*; 151(3):221-231  
**IF: 4.942**
- 04** Ia Starza R., Matteucci C., Gorello P., Brandimarte L., Pierini V., Crescenzi B., Nofrini V., Rosati R., Gottardi E., Saglio G., Santucci A., Berchicci L., Arcioni F., Falini B., Martelli M.F., Sambani C., Aventin A., Mecucci C. NPM1 deletion is associated with gross chromosomal rearrangements in leukemia. *PLoS One*; 5(9):1-7  
**IF: 4.411**
- 05** Delgado J., Aventin A., Briones J., Sanchez J., Nomdedeu J., Sierra J. The use of tetradecanoylphorbol acetate-stimulated peripheral blood cells enhances the prognostic value of interphase fluorescence in situ hybridization in patients with chronic lymphocytic leukemia. *Gene Chromosomes Cancer*; 49(4):327-332  
**IF: 3.99**
- 06** Pecci A., Panza E., De Rocco D., Pujol-Moix N., Giroto G., Podda L., Paparo C., Bozzi V., Pastore A., Balduini C.L., Seri M., Savoia A. MYH9 related disease: Four novel mutations of the tail domain of myosin-9 correlating with a mild clinical phenotype. *Eur. J. Haematol*; 84(4):291-297  
**IF: 2.785**
- 07** Savoia A., De Rocco D., Panza E., Bozzi V., Scandellari R., Loffredo G., Mumford A., Heller P.G., Noris P., De Groot M.R., Giani M., Freddi P., Scognamiglio F., Rioldino S., Pujol-Moix N., Fabris F., Seri M., Balduini C.L., Pecci A. Heavy chain myosin 9-related disease (MYH9-RD): Neutrophil inclusions of myosin-9 as a pathognomonic sign of the disorder. *Thromb. Haemost.*; 103(4):826-832  
**IF: 4.701**
- 08** Vila L., Martinez-Perez A., Camacho M., Buil A., Alcolea S., Pujol-Moix N., Soler M., Anton R., Souto J.-C., Fontcuberta J., Soria J.-M. Heritability of thromboxane A2 and prostaglandin E2 biosynthetic machinery in a Spanish population. *Arterioscler. Thromb. Vasc. Biol.*; 30(1):128-134  
**IF: 7.215**
- 09** Alvarez-Larran A., Cervantes F., Pereira A., Arellano-Rodrigo E., Perez-Andreu V., Hernandez-Boluda J.-C., Ayats R., Salvador C., Muntanola A., Bellosillo B., Vicente V., Hernandez-Nieto L., Burgaleta C., Xicoy B., Besses C. Observation versus antiplatelet therapy as primary prophylaxis for thrombosis in low-risk essential thrombocythemia. *Blood*; 116(8):1205-1210  
**IF: 10.558**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Molecular Pathology of Gynaecologic Cancer

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**Main lines of research**

- Pathogenic mechanisms of endometrial/ovarian 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 and cooperate with other groups at the national and international levels.

**Active grants**

- Prat, J. Ovarian cancer: Alterations in PIK3CA, PTEN and AKT in PI3K-AKT signal transduction pathways. Period: January 2007-May 2010. Expedient: PI06/0950.
- Prat, J. Role of epithelial-mesenchymal transition (EMT) in endometrial carcinoma. Period: January 2009-December 2011. Expedient: PI08/0410.
- Prat, J. Cooperative Cancer Research Thematic Network. Period: January 2007-December 2010. Expedient: RD06/0020/0015.
- Catasús, L. Prognostic value of CpG island methylator phenotype (CIMP) in endometrioid endometrial cancer: study of the degree of methylation of the MLH1, P16, APC, E-cadherin, MGMT, RASSF1A, RAS2A, CDH1, DAPK and SFRP gene promoters. Period: October 2010-March 2011. Expedient: PI07/0899
- Espinosa, I. Desmoid tumour (fibromatosis): mutational and immunohistochemical study of beta-catenin and analysis of gene expression with clinicopathological correlation. Period: March 2009-March 2011. Expedient: 09/GEIS.



\*TIF: 58.216 \*\*MIF: 4.158

## INDEXED PUBLICATIONS

- 01** D'Angelo E., Prat J. Uterine sarcomas: A review. *Gynecol. Oncol.*; 116(1):131-139  
**IF: 3.76**
- 02** Beck A.H., Lee C.-H., Witten D.M., Gleason B.C., Edris B., Espinosa I., Zhu S., Li R., Montgomery K.D., Marinelli R.J., Tibshirani R., Hastie T., Jablons D.M., Rubin B.P., Fletcher C.D., West R.B., Van De Rijn M. Discovery of molecular subtypes in leiomyosarcoma through integrative molecular profiling. *Oncogene*; 29(6):845-854  
**IF: 7.414**
- 03** Sharma M., Beck A.H., Webster J.A., Espinosa I., Montgomery K., Varma S., Van De Rijn M., Jensen K.C., West R.B. Analysis of stromal signatures in the tumor microenvironment of ductal carcinoma in situ. *Breast Cancer Res. Treat.*; 123(2):397-404  
**IF: 4.859**
- 04** Ameri K., Luong R., Zhang H., Powell A.A., Montgomery K.D., Espinosa I., Bouley D.M., Harris A.L., Jeffrey S.S. Circulating tumour cells demonstrate an altered response to hypoxia and an aggressive phenotype. *Br. J. Cancer*; 102(3):561-569  
**IF: 4.831**
- 05** Catusus L., D'Angelo E., Pons C., Espinosa I., Prat J. Expression profiling of 22 genes involved in the PI3K-AKT pathway identifies two subgroups of high-grade endometrial carcinomas with different molecular alterations. *Mod. Pathol.*; 23(5):694-702  
**IF: 4.176**
- 06** Lee C.-H., Liang C.-W., Espinosa I. The utility of discovered on gastrointestinal stromal tumor 1 (DOG1) antibody in surgical pathology-the GIST of it. *Adv. Anat. Pathol.*; 17(3):222-232  
**IF: 3.087**
- 07** Prat J. Classification and staging of endometrial sarcomas: One disease or two different tumor types? *Gynecol. Oncol.*; 118(1):1-2  
**IF: 3.76**
- 08** Paez D., Pare L., Espinosa I., Salazar J., del Rio E., Barnadas A., Marcuello E., Baiget M. Immunoglobulin G fragment C receptor polymorphisms and KRAS mutations: Are they useful biomarkers of clinical outcome in advanced colorectal cancer treated with anti-EGFR-based therapy? *Cancer Sci.*; 101(9):2048-2053  
**IF: 3.846**
- 09** Webster J.A., Beck A.H., Sharma M., Espinosa I., Weigelt B., Schreuder M., Montgomery K.D., Jensen K.C., Van De Rijn M., West R. Variations in stromal signatures in breast and colorectal cancer metastases. *J. Pathol.*; 222(2):158-165  
**IF: 7.274**
- 10** D'Angelo E., Dadmanesh F., Pecorelli S., Prat J. Squamous cell carcinoma of the ovary arising from a mucinous cystic tumor of endocervical (Müllerian) type. *Int. J. Gynecol. Pathol.*; 29(6):529-532  
**IF: 2.076**
- 11** Espinosa I., Jose Carnicer M., Catusus L., Canet B., Dangelo E., Zannoni G.F., Prat J. Myometrial invasion and lymph node metastasis in endometrioid carcinomas: Tumor-associated macrophages, microvessel density, and HIF1A have a crucial role. *Am. J. Surg. Pathol.*; 34(11):1708-1714  
**IF: 4.106**
- 12** D'Angelo E., Prat J. Classification of ovarian carcinomas based on pathology and molecular genetics. *Clin. Transl. Oncol.*; 12(12):783-787  
**IF: 1.254**
- 13** Diaz A., Alos L., Leon A., Mozos A., Caballero M., Martinez A., Plana M., Gallart T., Gil C., Leal M., Gatell J.M., Garcia F. Factors associated with collagen deposition in lymphoid tissue in long-term treated HIV-infected patients. *Aids*; 24(13):2029-2039  
**IF: 6.348**
- 14** Peiro G., Adrover E., Guijarro J., Ballaster I., Jimenez M.J., Planelles M., Catusus L. Synchronous bilateral breast carcinoma in a patient with Cowden syndrome: A case report with morphologic, immunohistochemical and genetic analysis. *Breast J.*; 16(1):77-81  
**IF: 1.425**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Oncology/Haematology Transplantation

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**Main lines of research**

- Study of molecular and cellular physiopathology of haematological cancers, with emphasis on the role of focal adhesions in survival of acute myeloid leukaemia (AML) cells.
- Study of the prognostic value of clinical and biological aspects of these diseases.
- Design of new modalities of chemotherapy, biotherapy and drug treatment to target molecular mechanisms.
- Biological diagnosis and innovation in infectious complications related to immunodepression.
- New forms of haematopoietic stem-cell transplants.
- Cell therapy.
- Psychological intervention and quality of life in patients with haematological malignancies.

**Challenges**

- Molecular characterization of AML. Determination of the prognostic value of known genes and other genes of uncertain significance (in cooperation with the Haematology Laboratory).
- Animal modelling of leukaemia and lymphoma (in cooperation with the Oncogene and Antitumour Laboratory) so as to better understand the cell physiopathology of these diseases and to test new drugs (in cooperation with the oncogenesis and antitumour programme).
- Pharmacogenetics of haematological tumours: determination of the importance of polymorphisms in antitumour sensitivity and toxicity.
- Cell physiopathology and immunotherapy for lymphoproliferative diseases. Molecular characterization and prognostic significance. Evaluation of antitumour immunotherapy in animals and humans (in cooperation with the Immunology Department and the Blood and Tissue Bank).
- Genomic, proteomic and animal models of transplantation. Exploration of predictive indicators of complications, particularly in graftversus-host disease and infections. Early therapeutic intervention. Establishment of an experimental mouse model.





## Active grants

- Bosch, R. Predoctoral training contract 2008. September 2010-August 2012. Expedient: FI08/00007.
- Diéguez, R. Postdoctoral researcher contracts. Period: January 2010-December 2013. Expedient: CD09/00014.
- Sierra, J. Grants to support research groups in Catalonia. Oncohaematology and Transplantation. Period: September 2009-December 2013. Expedient: 2009SGR 1246.
- Sierra, J. LeukemiaNet: Strengthen and develop scientific and technological excellence in research and therapy of leukaemia (CML, AML, ALL, MDS, CMPD) by integration of the leading national leukaemia networks and their interdisciplinary partner groups in Europe. Period: January 2004-February 2011. Expedient: 04/LSHC-CT503216.
- Sierra, J. Prediction of tumour response to treatment of locally advanced head and neck squamous cell carcinoma. Role of the DNA-PK complex. Period: April 2007-April 2010. Expedient: 07/FMM.
- Sierra, J. Treatment of de novo acute myeloid leukaemia with the ibarubicin-cytarabine-gemtuzumab ozogamicin (Mylotarg) combination with or without G-CSF priming. Prospective study of efficacy and toxicity. Period: October 2007-June 2011. Expedient: EC07/90065.
- Sierra, J. Focal adhesion signalling in human acute myeloid leukaemia. Prognostic significance and preclinical development of a new pyrazoline derivative with inhibitory effects. Period: January 2009-December 2011. Expedient: PI08/0672.
- Sierra, J. Cooperative Cancer Research Thematic Network. Period: January 2007-December 2010. Expedient: RD06/0020/0101.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Cervera J, Montesinos P, Hernandez-Rivas J.M., Calasanz M.J., Aven-tin A., Ferro M.T., Luno E., Sanchez J., Vellenga E., Rayon C., Milone G., De La Serna J., Rivas C., Gonzalez J.D., Tormo M., Amutio E., Gonzalez M., Brunet S., Lowenberg B., Sanz M.A. Additional chromosome abnormalities in patients with acute promyelocytic leukemia treated with all-trans retinoic acid and chemotherapy. *Haematol-Hematol. J.*; 95(3):424-431  
**IF: 6.532**
- 02** Litzow M.R., Tarima S., Perez W.S., Bolwell B.J., Cairo M.S., Camitta B.M., Cutler C.S., De Lima M., Dipersio J.F., Gale R.P., Keating A., Lazarus H.M., Luger S., Marks D.I., Maziarz R.T., McCarthy P.L., Pasquini M.C., Phillips G.L., Rizzo J.D., Sierra J., Tallman M.S., Weisdorf D.J. Allogeneic transplantation for therapy-related myelodysplastic syndrome and acute myeloid leukemia. *Blood*; 115(9):1850-1857  
**IF: 10.558**
- 03** Chao M.P., Alizadeh A.A., Tang C., Myklebust J.H., Varghese B., Gill S., Jan M., Cha A.C., Chan C.K., Tan B.T., Park C.Y., Zhao F., Kohrt H.E., Malumbres R., Briones J., Gascoyne R.D., Lossos I.S., Levy R., Weissman I.L., Majeti R. Anti-CD47 Antibody Synergizes with Rituximab to Promote Phagocytosis and Eradicate Non-Hodgkin Lymphoma. *Cell*; 142(5):699-713  
**IF: 32.401**
- 04** Gupta V., Tallman M.S., He W., Logan B.R., Copelan E., Gale R.P., Khoury H.J., Klumpp T., Koreth J., Lazarus H.M., Marks D.I., Martino R., Rizzieri D.A., Rowe J.M., Sabloff M., Waller E.K., DiPersio J.F., Bunjes D.W., Weisdorf D.J. Comparable survival after HLA-well-matched unrelated or matched sibling donor transplantation for acute myeloid leukemia in first remission with unfavorable cytogenetics at diagnosis. *Blood*; 116(11):1839-1848  
**IF: 10.558**
- 05** Barba P., Pinana J.L., Martino R., Valcarcel D., Amoros A., Sureda A., Briones J., Delgado J., Brunet S., Sierra J. Comparison of Two Pretransplant Predictive Models and a Flexible HCT-CI Using Different Cut off Points to Determine Low-, Intermediate-, and High-Risk Groups: The Flexible HCT-CI Is the Best Predictor of NRM and OS in a Population of Patients Undergoing allo-RIC. *Biol. Blood Marrow Transplant.*; 16(3):413-420  
**IF: 3.275**
- 06** Ribera J.-M., Oriol A., Gonzalez M., Vidriales B., Brunet S., Esteve J., Del Potro E., Rivas C., Moreno M.-J., Tormo M., Martin-Reina V., Sarra J., Parody R., De Oteyza J.P., Bureo E., Bernal M.-T. Concurrent intensive chemotherapy and imatinib before and after stem cell transplantation in newly diagnosed Philadelphia chromosome-positive acute lymphoblastic leukemia. Final results of the CSTIBES02 trial. *Haematol-Hematol. J.*; 95(1):87-95  
**IF: 6.532**
- 07** Piana J.L., Martino R., Barba P., Margall N., Roig M.C., Valcarcel D., Sierra J., Rabella N. Cytomegalovirus infection and disease after reduced intensity conditioning allogeneic stem cell transplantation: Single-centre experience. *Bone Marrow Transplant.*; 45(3):534-542  
**IF: 3.66**
- 08** Alvarez E., Moga E., Barquinero J., Sierra J., Briones J. Dendritic and tumor cell fusions transduced with adenovirus encoding CD40L eradicate B-cell lymphoma and induce a Th17-type response. *Gene Ther.*; 17(4):469-477  
**IF: 4.538**
- 09** Dohner H., Estey E.H., Amadori S., Appelbaum F.R., Buchner T., Burnett A.K., Dombret H., Fenaux P., Grimwade D., Larson R.A., Lo-Coco F., Naoe T., Niederwieser D., Ossenkoppele G.J., Sanz M.A., Sierra J., Tallman M.S., Lowenberg B., Bloomfield C.D. Diagnosis and management of acute myeloid leukemia in adults: Recommendations from an international expert panel, on behalf of the European LeukemiaNet. *Blood*; 115(3):453-474  
**IF: 10.558**
- 10** Cordonnier C., Labopin M., Chesnel V., Ribaud P., Camara R.D.L., Martino R., Ullmann A.J., Parkkali T., Locasciulli A., Yakouben K., Pauksens K., Bonnet E., Einsele H., Niederwieser D., Apperley J., Ljungman P. Immune response to the 23-valent polysaccharide pneumococcal vaccine after the 7-valent conjugate vaccine in allogeneic stem cell transplant recipients: Results from the EBMT IDWP01 trial. *Vaccine*; 28(15):2730-2734  
**IF: 3.572**
- 11** Gratzinger D., Advani R., Zhao S.,

\*TIF: 332.068 \*\*MIF: 10.063



- Talreja N., Tibshirani R.J., Shyam R., Horning S., Sehn L.H., Farinha P., Briones J., Lossos I.S., Gascoyne R.D., Natkunam Y. Lymphoma cell VEGFR2 expression detected by immunohistochemistry predicts poor overall survival in diffuse large B cell lymphoma treated with immunochemotherapy (R-CHOP). *Br. J. Haematol.*; 148(2):235-244  
**IF: 4.942**
- 12 Pinana J.L., Valcarcel D., Fernandez-Aviles F., Martino R., Rovira M., Barba P., Martinez C., Brunet S., Sureda A., Carreras E., Sierra J. MTX or mycophenolate mofetil with CsA as GVHD prophylaxis after reduced-intensity conditioning PBSCT from HLA-identical siblings. *Bone Marrow Transplant.*; 45(9):1449-1456  
**IF: 3.66**
- 13 Oriol A., Vives S., Hernandez-Rivas J.-M., Tormo M., Heras I., Rivas C., Bethencourt C., Moscardo F., Bueno J., Grande C., del Potro E., Guardia R., Brunet S., Bergua J., Bernal T., Moreno M.-J., Calvo C., Bastida P., Feliu E., Ribera J.-M. Outcome after relapse of acute lymphoblastic leukemia in adult patients included in four consecutive risk-adapted trials by the PETHEMA study group. *Haematol-Hematol. J.*; 95(4):589-596  
**IF: 6.532**
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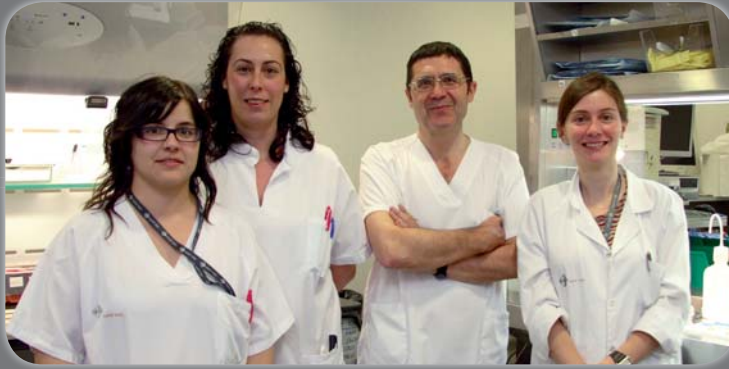
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**IF: 6.532**
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**IF: 18.97**
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**IF: 18.97**

\* Total Impact Factor  
 \*\*Mean Impact Factor



# Breast Cancer

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## Main lines of research

- Pathogenic mechanisms of breast cancer.
- Identification and validation of therapeutic targets derived from previous studies.
- Mechanisms of response to chemotherapy treatment.

## Challenges

Progress as a breast cancer research group publishing regular articles and cooperating with other groups in our centre and at the national and international levels.

## Active grants

Lerma, E. The epithelial-mesenchymal transition and membrane receptors in breast carcinoma invasion. Period: September 2008-September 2011. Expedient: 08/FMM.

\*TIF: 23.958 \*\*MIF: 7.986

## Scientific production

### INDEXED PUBLICATIONS

**01** De Sanjose S., Quint W.G.V., Alemany L., Geraets D.T., Klaustermeier J.E., Lloveras B., Tous S., Felix A., Bravo L.E., Shin H.-R., Vallejos C.S., de Ruiz P.A., Lima M.A., Guimera N., Clavero O., Alejo M., Llombart-Bosch A., Cheng-Yang C., Tatti S.A., Kasamatsu E., Iljazovic E., Odida M., Prado R., Seoud M., Grce M., Usubutun A., Jain A., Suarez G.A.H., Lombardi L.E., Banjo A., Menendez C., Domingo E.J., Velasco J., Nessa A., Chichareon S.C.B., Qiao Y.L., Lerma E., Garland S.M., Sasagawa T., Ferrera A., Hammouda D., Mariani L., Pelayo A., Steiner I., Oliva E., Meijer C.J.L.M., Al-Jassar W.F., Cruz E., Wright T.C., Puras A., Llave C.L.,

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**IF: 1.762**

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**IF: 4.432**

\* Total Impact Factor  
\*\* Mean Impact Factor





#### AREA 4

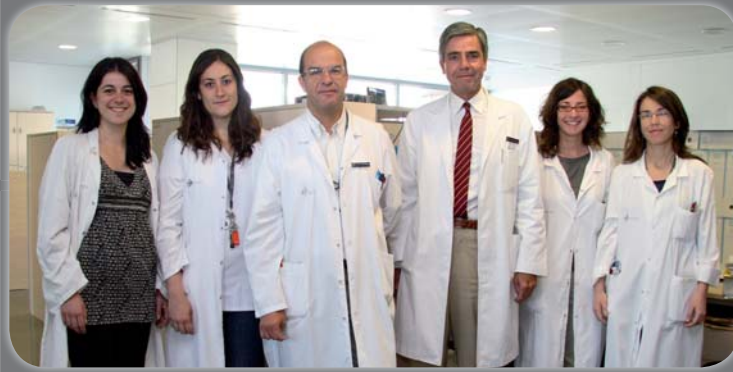
## *Neurological and Mental Disorders*

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# Cerebrovascular Diseases

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Main lines of research

- Neurogenesis and neurorepair after ischaemic stroke.
- Growth of haematoma in the acute phase of spontaneous brain haemorrhage.
- Endothelial progenitor cells in ischaemic stroke.
- Monitoring the effect of thrombolysis in acute ischaemic stroke.
- Benefit and risk of thrombolysis in acute ischaemic stroke.
- Beta-amyloid and cerebral haemorrhage: diagnostic and prognostic studies.

Challenges

- Enhance cooperation with other groups in the framework of the Spanish Stroke Research Network (RETICS/RENEVAS) and also intrahospital cooperation (the Catalan Institute of Cardiovascular Sciences and the Haemostasis-Thrombosis Unit) and extra-hospital cooperation (with groups managed by Dr. García-Verdugo in Valencia, Dr. Arús at the Autonomous University of Barcelona and Dr. Anna Planas at Hospital Clínic). To obtain FIS finance and funding from regional authorities and private bodies.
- Increase the number of contracted and grant-aided researchers and professionally develop existing researchers.

Active grants

- Delgado, R. Development of multiscale and multi-parameter optical monitoring for the study of acute cerebral ischaemia: from animal model to the patient. Period: January 2010-December 2012. Expedient: PI09/0557.
- Martínez, S. Contracts for health professionals who have completed specialist health training. Period: February 2008-January 2011. Expedient: CM07/00139.
- Martí, J. Circulating endothelial progenitor cells after stroke: serial assessment, prognostic relevance and relationship to etiological and vascular risk factors. Period: January 2008-December 2010. Expedient: PI07/1062.
- Martí, J. RENEVAS. Period: January 2007-December 2010. Expedient: RD06/0026/0019.





## Awards

- Best Paper Award of the 14th Meeting of the Catalan Neurology Society, for Santos, M, Perez, J, Fernandez, A, Martínez-Ramírez, S, Delgado-Mederos, R, Querol, L, Suárez, M, Martí-Vilalta, JL, Martí-Fàbregas, J. Comparative study of the toast classification compared with ssstoaast classification in assessing etiologic ischaemic stroke patients.
- Ferrer Group Best Cerebrovascular Disease Paper Award for 2010 of the Catalan Neurology Society, for "Proliferation in the human ipsilateral subventricular zone after ischemic stroke", granted by the Spanish Society of Neurology.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Martí-Fabregas J, Borrell M, Silva Y, Delgado-Mederos R, Martínez-Ramírez S, De Juan-Delago M, Tirado I, Alejalde A, Marin R, Martí-Vilalta J.-L., Fontcuberta J. Hemostatic proteins and their association with hematoma growth in patients with acute intracerebral hemorrhage. *Stroke*; 41(12):2976-2978  
**IF: 5.756**
- 02** Domingues-Montanari S, Fernandez-Cadenas I, Del Rio-Espinola A, Mendioroz M, Ribo M, Obach V, Martí-Fabregas J, Freijo M, Serena J, Corbeto N, Chacon P, Alvarez-Sabin J, Montaner J. The I/D polymorphism of the ACE1 gene is not associated with ischaemic stroke in Spanish individuals. *Eur. J. Neurol.*; 17(11):1390-1392  
**IF: 3.765**
- 03** Martínez-Hernández E, Martínez-Ramírez S, Delgado-Mederos R, Alcolea D, Marquie M, Marin R, De Juan M, Martí-Vilalta J.L., Martí-Fabregas J. Remote cerebral hematomas in patients treated with intravenous rt-PA. *J. Neurol.*; 257(7):1062-1066  
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- 04** Domingues-Montanari S, Fernandez-Cadenas I, Del Rio-Espinola A, Corbeto N, Manso H, Gouveia L, Sobral J, Mendioroz M, Fernandez-Morales J, Alvarez-Sabin J, Ribo M, Rubiera M, Obach V, Martí-Fabregas J, Freijo M, Serena J, Ferro J.M., Vicente A.M., Oliveira S.A., Montaner J. Association of a genetic variant in the ALOX5AP with higher risk of ischemic stroke: A case-control, meta-analysis and functional study. *Cerebrovasc. Dis.*; 29(6):528-537  
**IF: 2.987**
- 05** Martí-Fabregas J, Romaguera-Ros M, Gomez-Pinedo U, Martínez-Ramírez S, Jimenez-Xarrie E, Marin R, Martí-Vilalta J.-L., Garcia-Verdugo J.-M. Proliferation in the human ipsilateral subventricular zone after ischemic stroke. *Neurology*; 74(5):357-365  
**IF: 8.017**
- 06** Domingues-Montanari S, Fernandez-Cadenas I, del Rio-Espinola A, Mendioroz M, Fernandez-Morales J, Corbeto N, Delgado P, Ribo M, Rubiera M, Obach V, Martí-Fabregas J, Freijo M, Serena J, Montaner J. KCNK17 genetic variants in ischemic stroke. *Atherosclerosis*; 208(1):203-209  
**IF: 4.086**
- 07** Amaro S, Canovas D, Castellanos M, Gallego J, Martí-Fabregas J, Segura T, Chamorro A. The URICO-ICTUS study, a phase 3 study of combined treatment with uric acid and rtPA administered intravenously in acute ischaemic stroke patients within the first 4-5 h of onset of symptoms. *Int. J. Stroke*; 5(4):325-328  
**IF: 3.125**

\*TIF: 31.589 \*\*MIF: 4.517

\* Total Impact Factor  
\*\* Mean Impact Factor



# Dementias

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Main lines of research

- Development and characterization of new in vitro models of Alzheimer disease.
- Development and characterization of new in vivo models of Alzheimer and other neurodegenerative diseases.
- Identification of signalling pathways and molecular mechanisms involved in neurotoxicity mediated by beta amyloid.
- Study of mechanisms involved in neuron and synapsis resistance in the Alzheimer pathology in human brains.
- Testing of new therapeutic strategies in Alzheimer disease.

Active grants

Gómez Isla, T. Study of molecular neurodegeneration mechanisms and testing of a new therapeutic strategy in a double transgenic mouse model of Alzheimer disease. Period: October 2007-September 2011. Expedient: PI07/1057.

Challenges

- Development of new in vitro, mouse and human disease models recapitulating the main aberrant features of Alzheimer disease. We are investigating the usefulness of these models for understanding the pathophysiology of the disease and for testing new neuroprotective strategies and evaluating individual susceptibility to the disease.
- Development and characterization of new mouse-disease models for the testing of new therapeutic strategies in Alzheimer disease and for molecular imaging in vivo.
- Study of the brains of individuals who meet Alzheimer histopathology criteria but who never developed symptoms in life, designed to identify the molecular pathways responsible for disease resistance and new potentially useful therapeutic targets for Alzheimer and other neurodegenerative diseases.
- Exchange and training of basic and clinical research personnel and collaborative projects between the HSCSP and Massachusetts General Hospital attached to Harvard University (Boston, MA, USA).



\*TIF: 24.951 \*\*MIF: 4.158

## INDEXED PUBLICATIONS

- 01 Marquie Sayagues M., Da Silva Alves L., Molina-Porcel L., Alcolea Rodriguez D., Sala Matavera I., Sanchez-Saudinos M.B., Camacho Marti V., Estorch Cabrera M., Blesa Gonzalez R., Gomez-Isla T., Lleo Bisa A. 123I-MIBG myocardial scintigraphy in the diagnosis of Lewy body dementia. *Neurologia*; 25(7):414-421  
**IF: 0.589**
- 02 Vargas T., Bullido M.J., Martinez-Garcia A., Antequera D., Clarimon J., Rosich-Estrago M., Martin-Requero A., Mateo I., Rodriguez-Rodriguez E., Vilella-Cuadrada E., Frank A., Lleo A., Molina-Porcel L., Blesa R., Combarros O., Gomez-Isla T., Bermejo-Pareja F., Valdivieso F., Carro E. A megalin polymorphism associated with promoter activity and Alzheimer's disease risk. *Am. J. Med. Genet. B*; 153(4):895-902  
**IF: 4.156**
- 03 Guardia-Laguarta C., Pera M., Clarimon J., Molinuevo J.L., Sanchez-Valle R., Llado A., Coma M., Gomez-Isla T., Blesa R., Ferrer I., Lleo A. Clinical, neuropathologic, and biochemical profile of the amyloid precursor protein I716F mutation. *J. Neuropathol. Exp. Neurol.*; 69(1):53-59  
**IF: 4.19**
- 04 Guerreiro R.J., Baquero M., Blesa R., Boada M., Bras J.M., Bullido M.J., Calado A., Crook R., Ferreira C., Frank A., Gomez-Isla T., Hernandez I., Lleo A., Machado A., Martinez-Lage P., Masdeu J., Molina-Porcel L., Molinuevo J.L., Pastor P., Perez-Tur J., Relvas R., Oliveira C.R., Ribeiro M.H., Rogaeva E., Sa A., Samaranch L., Sanchez-Valle R., Santana I., Tarraga L., Valdivieso F., Singleton A., Hardy J., Clarimon J. Genetic screening of Alzheimer's disease genes in Iberian and African samples yields novel mutations in presenilins and APP. *Neurobiol. Aging*; 31(5):725-731  
**IF: 6.634**
- 05 Samaranch L., Cervantes S., Barabash A., Alonso A., Cabranes J.A., Lamet I., Ancin I., Lorenzo E., Martinez-Lage P., Marcos A., Clarimon J., Alcolea D., Lleo A., Blesa R., Gomez-Isla T., Pastor P. The effect of MAPT H1 and APOE ε4 on transition from mild cognitive impairment to dementia. *J. Alzheimers Dis.*; 22(4):1065-1071  
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- 06 Coma M., Sereno L., Da Rocha-Souto B., Scotton T.C., Espana J., Sanchez M.B., Rodriguez M., Agullo J., Guardia-Laguarta C., Garcia-Alloza M., Borrelli L.A., Clarimon J., Lleo A., Bacskai B.J., Saura C.A., Hyman B.T., Gomez-Isla T. Triflusal reduces dense-core plaque load, associated axonal alterations and inflammatory changes, and rescues cognition in a transgenic mouse model of Alzheimer's disease. *Neurobiol. Dis.*; 38(3):482-491  
**IF: 5.121**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Neuromuscular Diseases

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Main lines of research

**Immune-mediated neuromuscular diseases:**

- Immunopathogenesis studies, with characterization of new targets, and innate immunity studies in immune-mediated neuromuscular diseases.
- Analysis of the effect of new immuno-modulating therapies on functional aspects of immune system cells (response to ligands, production of antibodies, etc.).

**Muscular dystrophy, dysferlinopathy and distal myopathies:**

- Clinical characterization, new diagnostic tests for dysferlinopathy and distal myopathies, and study of molecular pathways involved in differentiation and molecular and functional interactions of dysferlin.
- Functional analysis of truncated forms of dysferlin with possible therapeutic implications.

**New therapies in genetic diseases:**

- Allogeneic transplantation in mitochondrial neurogastrointestinal encephalopathy.
- Bone marrow transplant in dysferlinopathy (animal model).
- Advanced therapy with stem cells and mesoangioblasts.

Challenges

- Advance knowledge of the immunological mechanisms involved in the pathogenesis of immune-mediated neuromuscular diseases.
- Search for new antigens and development of diagnostic tests.
- Implement new diagnostic methods for muscular dystrophies resulting from dysferlinopathy and distal myopathies.

- Advance knowledge of the pathogenetic mechanisms involved in muscular dystrophy resulting from a dysferlin deficiency.
- Implement cell therapy in mouse models of muscular dystrophy using mesoangioblasts and bone marrow, to study possible applications in humans, and to study immune system response to cell therapy in mouse models of

- human disease.
- Cleanroom access to manipulate cells for use in humans.
- Evaluate the effects of treatment with lithium in patients with amyotrophic lateral sclerosis.
- Evaluate the effects of treatment with vitamin D in carriers of a DYSF gene mutation.

Active grants

- Illa, I. Development of new dysferlinopathy diagnostic tests using peripheral blood monocytes. Period: January 2009-December 2010. Expedient: PI08/90622.
- Illa, I. Immunology studies relevant to the development of therapeutic

- strategies in neuromuscular diseases. Period: January 2010-December 2013. Expedient: PI09/1964.
- Illa, I. Treatment of symptomatic dysferlinopathy carrier patients with vitamin D. October 2007-June 2010. EC07/90601.

- Gallardo, E. Grants to support research groups in Catalonia. Neuromuscular Disease Group. Period: September 2009-December 2013. Expedient: 2009SGR 1004.
- Gallardo, E. Study of the physical pathogenesis of muscular dystro-


**Active grants**

- phies caused by mutations in the DYSF gene by analysing interactome and the signalling pathways involving dysferlin. Period: January 2010-December 2012. Expedient: P109/1944.
- Rojas, R. Multicentre randomized controlled trial to evaluate the efficacy of lithium carbonate in patients with amyotrophic lateral sclerosis. Period: January 2009-December 2011. Expedient: EC08/00077.
  - Martínez, E. Predoctoral training contract 2008 FIS. Period: November 2010-November 2012. Expedient: FI08/00285.
  - Querol, L. Río Hortega contract. Period: January 2010-January 2013. Expedient: CM09/00017.
  - Hankiewicz, Karolina. Río Hortega contract. Period: January 2009-January 2012. Expedient: CM08/00244.

**Scientific production**
**INDEXED PUBLICATIONS**

- 01 Hernandez S., Texido L., Caldero J., Ciutat D., Piedrafita L., Casanovas A., Blasi J., Solsona C., Povedano M., Rojas R., Illa I., Caress J., Prevette D., Oppenheim R.W., Milligan C., Esquerda J.E. Increased intramuscular nerve branching and inhibition of programmed cell death of chick embryo motoneurons by immunoglobulins from patients with motoneuron disease. *J. Neuroimmunol.*; 229(1-2):157-168  
**IF: 2.901**
- 02 Van Schaik I.N., Leger J.-M., Nobile-Orazio E., Cornblath D.R., Hadden R.D.M., Koski C.L., Pollard J.D.P., Sommer C., Illa I., Van Den Bergh P., Van Doorn P.A. European Federation of Neurological Societies/Peripheral Nerve Society Guideline on management of multifocal motor neuropathy. Report of a Joint Task Force of the European Federation of Neurological Societies and the Peripheral Nerve Society-First revision. *J. Peripher. Nerv. Syst.*; 15(4):295-301  
**IF: 3.032**
- 03 Paradas C., Llauger J., Diaz-Manera J., Rojas-García R., De Luna N., Iturriaga C., Marquez C., Uson M., Hankiewicz K., Gallardo E., Illa I. Redefining dysferlinopathy phenotypes based on clinical findings and muscle imaging studies. *Neurology*; 75(4):316-323  
**IF: 8.017**
- 04 Skeie G.O., Apostolski S., Evoli A., Gilhus N.E., Illa I., Harms L., Hilton-Jones D., Melms A., Verschuuren J., Horge H.W. Guidelines for treatment of autoimmune neuromuscular transmission disorders. *Eur. J. Neurol.*; 17(7):893-902  
**IF: 3.765**
- 05 Rojas-García R., Gallardo E., De Luna N., Juárez C., Martínez-Hernández E., Carvajal A., Casanovas C., Fages E., Davila-Gonzalez P., Illa I. Bulbar involvement in patients with antiganglioside antibodies against NeuNAc(α2-3)Gal. *J. Neurol. Neurosurg. Psychiatry*; 81(6):623-628  
**IF: 4.791**
- 06 De Luna N., Gallardo E., Sonnet C., Chazaud B., Dominguez-Perles R., Suarez-Calvet X., Gherardi R.K., Illa I. Role of thrombospondin 1 in macrophage inflammation in dysferlin myopathy. *J. Neuropathol. Exp. Neurol.*; 69(6):643-653  
**IF: 4.19**
- 07 Van Den Bergh P.Y.K., Hadden R.D.M., Bouche P., Cornblath D.R., Hahn A., Illa I., Koski C.L., Leger J.-M., Nobile-Orazio E., Pollard J., Sommer C., Van Doorn P.A., Van Schaik I.N. European federation of neurological societies/peripheral nerve society guideline on management of chronic inflammatory demyelinating polyradiculoneuropathy: Report of a joint task force of the European federation of neurological societies and the peripheral nerve society-First revision. *J. Peripher. Nerv. Syst.*; 15(1):1-9  
**IF: 3.032**
- 08 Fiaschi T., Tedesco F.S., Giannoni E., Diaz-Manera J., Parri M., Cossu G., Chiarugi P. Globular adiponectin as a complete mesoangioblast regulator: Role in proliferation, survival, motility, and skeletal muscle differentiation. *Mol. Biol. Cell*; 21(6):848-859  
**IF: 5.861**
- 09 Tedesco F.S., Dellavalle A., Diaz-Manera J., Messina G., Cossu G. Repairing skeletal muscle: Regenerative potential of skeletal muscle stem cells. *J. Clin. Invest.*; 120(1):11-19  
**IF: 14.152**
- 10 Suarez-Calvet M., Rojas-García R., Querol L., Sarmiento L.M., Domingo P. Polyradiculoneuropathy associated to human herpesvirus 2 in an HIV-1-infected patient (Elsberg Syndrome): Case report and literature review. *Sex. Transm. Dis.*; 37(2):123-125  
**IF: 3.268**
- 11 Martínez-Hernández E., Martínez-Ramírez S., Delgado-Mederos R., Alcolea D., Marquie M., Marin R., De Juan M., Martí-Vilalta J.L., Martí-Fabregas J. Remote cerebral hematomas in patients treated with intravenous rt-PA. *J. Neurol.*; 257(7):1062-1066  
**IF: 3.853**
- 12 Joint Task Force of the EFNS and the PNS (col. Illa, I.) European federation of neurological societies/peripheral nerve society guideline on management of paraproteinemic demyelinating neuropathies. Report of a joint task force of the European federation of neurological societies and the peripheral nerve society-First revision. *J. Peripher. Nerv. Syst.*; 15(3):185-195  
**IF: 3.032**
- 13 Van Den Bergh P.Y.K., Hadden R.D.M., Bouche P., Cornblath D.R., Hahn A., Illa I., Koski C.L., Leger J.-M., Nobile-Orazio E., Pollard J., Sommer C., Van Doorn P.A., Van Schaik I.N. European federation of neurological societies/peripheral nerve society guideline on management of chronic inflammatory demyelinating polyradiculoneuropathy: Report of a joint task force of the European Federation of Neurological Societies and the Peripheral Nerve Society - First Revision. *Eur. J. Neurol.*; 17(3):356-363  
**IF: 3.765**
- 14 Van Den Bergh P.Y.K., Hadden R.D.M., Bouche P., Cornblath D.R., Hahn A., Illa I., Koski C.L., Leger J.-M., Nobile-Orazio E., Pollard J., Sommer C., Van Doorn P.A., Van Schaik I.N. European federation of neurological societies/peripheral nerve society guideline on management of chronic inflammatory demyelinating polyradiculoneuropathy: Report of a joint task force of the European federation of neurological societies and the peripheral nerve society - First revision. *J. Peripher. Nerv. Syst.*; 15(1):1-9  
**IF: 3.032**

**\*TIF: 66.691 \*\*MIF: 4.763**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Parkinson Disease and Movement Disorders

TEAM



**Coordinator**  
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<b>Researchers</b>			
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Javier Pagonabarraga	HSCSP	Fabián Octavio Arenas	CIBERNED
		Ramón Fernández	IR-HSCSP

**Nursing Researchers**  
Antonia Campolongo IR-HSCSP  
Susana di Giovanni IR-HSCSP

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 that will allow detection of subtle changes in cognitive performance and treatment response.

**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).

- Physiological correlates and pharmacological approach to apathy in Parkinson disease and other movement disorders.

**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).

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.

**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.

Active grants

- Kulisevsky, J. Cognitive and motor response associated with dopaminergic/serotonergic activity in an animal model of parkinsonism, which includes the combined injury of the pars compacta of the substantia nigra and the locus coeruleus. Period: January 2009-December 2011. Expedient: PI08/1598.
- Kulisevsky, J. Expert integrated telecare and telemedicine system for the prevention of dependency and the em-

powerment of elderly people at home. E-Health platform for healthy ageing. Period: May 2009-December 2011. Expedient: TSI-020110-2009-444.

- Kulisevsky, J. Using cognitive heterogeneity to explore the neural basis of mild cognitive impairment (relatively subtle cognitive deficits) Parkinson disease. Period: February 2007-September 2010. Expedient: 06/ 0310.



Award for Best Oral Communication on Movement Disorders 61st Annual Meeting of the Spanish Neurology Society: Javier Pagonabarraga, Olga López, Beatriz Gómez-Ansón, Laia Rodríguez-Revenga, Montserrat Milà and Jaume Kulisevsky. Neurological and neuropsychological abnormalities in a Spanish sample of patients with FXTAS.

## INDEXED PUBLICATIONS

- 01** Belvis R, Ramos R, Villa C, Segura C, Pagonabarraga J, Ormazabal I, Kulisevsky J. Brain apparent water diffusion coefficient magnetic resonance image during a prolonged visual aura. *Headache*; 50(6):1045-1049  
**IF: 2.642**
- 02** Valdeoriola F, Regidor I, Minguez-Castellanos A, Lezcano E, Garcia-Ruiz P, Rojo A, Salvador A, Castro A, Grandas F, Kulisevsky J, Marti M.J., Martinez-Martin P, Relova L, Rumia J, Camara A, Burguera J.A., Linazasoro G, Lopez De Val J., Obeso J., Rodriguez-Oroz M.C., Tolosa E, Magarinos C, Figueiras R, Cabanes L, Escamilla-Sevilla F, Katati M.J., Martin-Linares J.M., Bilbao G, Lambarri I, Gomez J.C., Rodriguez O., Villoria R, Alonso F, Ayerbe J., Muniz J., Oliver B., Aguilar M., Badenes D., Roldan P, Talamantes F., Sesar A., Gelabert M., Lopez L., Gimenez-Roldan S., Garcia F, Gironell A., Molet J., Pascual-Sedano R.B., Rodriguez R. Efficacy and safety of pallidal stimulation in primary dystonia: Results of the Spanish multicenter study. *J. Neurol. Neurosurg. Psychiatry*; 81(1):65-69  
**IF: 4.791**
- 03** Gironell Carrero A, Vives B, Pagonabarraga J. Head tremor. *Rev. Neurologia*; 50(11):676-684  
**IF: 1.218**
- 04** Moro E, Lozano A.M., Pollak P, Agid Y, Rehn Crona S, Volkman J, Kulisevsky J, Obeso J.A., Albanese A., Hariz M.I., Quinn N.P., Speelman J.D., Benabid A.L., Fraix V., Mendes A., Welter M.-L., Houeto J.-L., Cornu P, Dormont D., Tornqvist A.L., Ekberg R., Schnitzler A., Timmermann L., Wojtecki L., Gironell A., Rodriguez-Oroz M.C., Guridi J., Bentivoglio A.R., Contarino M.F., Romito L., Scerrati M., Janssens M., Lang A.E. Long-term results of a multicenter study on subthalamic and pallidal stimulation in Parkinson's disease. *Mov. Disord.*; 25(5):578-586  
**IF: 4.48**
- 05** Stocchi F, Zappia M., Dall'Armi V, Kulisevsky J, Lamberti P, Obeso J.A. Melevodopa/carbidopa effervescent formulation in the treatment of motor fluctuations in advanced Parkinson's disease. *Mov. Disord.*; 25(12):1881-1887  
**IF: 4.48**
- 06** Aarsland D, Bronnick K, Williams-Gray C, Weintraub D, Marder K, Kulisevsky J, Burn D, Barone P, Pagonabarraga J, Allcock L, Santangelo G, Foltynie T, Janvin C, Larsen J.P., Barker R.A., Emre M. Mild cognitive impairment in Parkinson disease: A multicenter pooled analysis. *Neurology*; 75(12):1062-1069  
**IF: 8.017**
- 07** Rodriguez-Revenga L, Pagonabarraga J, Gomez-Anson B, Lopez-Mourelo O, Madrigal I, Xuncla M, Kulisevsky J, Mila M. Motor and mental dysfunction in mother-daughter transmitted FXTAS. *Neurology*; 75(15):1370-1376  
**IF: 8.017**
- 08** Cubo E, Martin P.M., Martin-Gonzalez J.A., Rodriguez-Blazquez C, Kulisevsky J, Aguilar M, Quilez-Ferrer P, Alvarez Saucó M., Bayes A., Blazquez M., Bergareche A., Campos V., Carballo M., Catalan M.J., Chacon J, Cubo E, Fernandez-Garcia J.M., Garcia-Ruiz-Espiga P, Kulisevsky J, Linazasoro G, Lopez Del Val J., Martinez-Castrillo J.C., Mendoza A, Mir P, Posada I, Valdeoriola F, Vela L, Vivancos F, Ybot I, Martinez-Martin P, Forjaz M.J., Frades-Payo B, Rodriguez-Blazquez C. Motor laterality asymmetry and nonmotor symptoms in Parkinson's Disease. *Mov. Disord.*; 25(1):70-75  
**IF: 4.48**
- 09** Llebaria G, Pagonabarraga J, Martinez-Corral M., Garcia-Sanchez C., Pascual-Sedano B, Gironell A, Kulisevsky J. Neuropsychological correlates of mild to severe hallucinations in Parkinson's disease. *Mov. Disord.*; 25(16):2785-2791  
**IF: 4.48**
- 10** Pagonabarraga J, Kulisevsky J, Llebaria G, Garcia-Sanchez C., Pascual-Sedano B, Martinez-Corral M, Gironell A. PDD-short screen: A brief cognitive test for screening dementia in Parkinson's disease. *Mov. Disord.*; 25(4):440-446  
**IF: 4.48**
- 11** Pagonabarraga J, Kulisevsky J. Rasagiline: Effectiveness and protection in Parkinson's disease. *Rev. Neurologia*; 51(9):535-541  
**IF: 1.218**
- 12** Davila G, Berthier M.L., Kulisevsky J, Asenjo B, Gomez J, Lara J.P., Chacon S.J., Campos V.M. Structural abnormalities in the substantia nigra and neighbouring nuclei in Tourette's syndrome. *J. Neural Transm.*; 117(4):481-488  
**IF: 2.597**
- 13** Gironell A, Martinez-Corral M, Pagonabarraga J, Kulisevsky J. The Glass scale: A simple tool to determine severity in essential tremor. *Parkinsonism Relat. Disord.*; 16(6):412-414  
**IF: 3.245**
- 14** Kulisevsky J, Pagonabarraga J. Tolerability and Safety of Ropinirole versus Other Dopamine Agonists and Levodopa in the Treatment of Parkinson's Disease: Meta-Analysis of Randomized Controlled Trials. *Drug Saf.*; 33(2):147-161  
**IF: 3.599**
- 15** Forjaz M.J., Frades-Payo B, Rodriguez-Blazquez C., Ayala A., Martinez-Martin P. (col. Kulisevsky, J.) Should the SCOPA-COG be modified?: A Rasch analysis perspective. *Eur. J. Neurol.* ; 17(2):202-207  
**IF: 3.765**
- 16** Emre M, Tsolaki M., Bonuccelli U, Destee A, Tolosa E, Kutzelnigg A, Ceballos-Baumann A., Zdravkovic S., Bladstrom A., Jones R. (col. Kulisevsky, J.) Memantine for patients with Parkinson's disease dementia or dementia with Lewy bodies: A randomised, double-blind, placebo-controlled trial. *Lancet Neurol.*; 9(10):969-977  
**IF: 21.659**
- 17** Cubo E, Martinez Martin P, Gonzalez M., Bergareche A., Campos V, Fernandez J.M., Alvarez M., Bayes A, Rodriguez-Balzquez (col. Kulisevsky, J.) What contributes to driving ability in Parkinson's disease. *Disabil. Rehabil.* ; 32(5):374-378  
**IF: 1.489**
- 18** Forjaz M.J., Ayala A, Rodriguez-Blazquez C., Frades-Payo B, Martinez-Martin P. (col. Kulisevsky, J.) Assessing autonomic symptoms of Parkinson's disease with the SCOPA-AUT: A new perspective from Rasch analysis. *Eur. J. Neurol.* ; 17(2):273-279  
**IF: 3.765**
- 19** Rodriguez-Blazquez C., Forjaz M.J., Frades-Payo B, De Pedro-Cuesta J, Martinez-Martin P. (col. Kulisevsky, J.) Independent validation of the scales for outcomes in Parkinson's disease-autonomic (SCOPA-AUT). *Eur. J. Neurol.* ; 17(2):194-201  
**I.F.: 3.765**

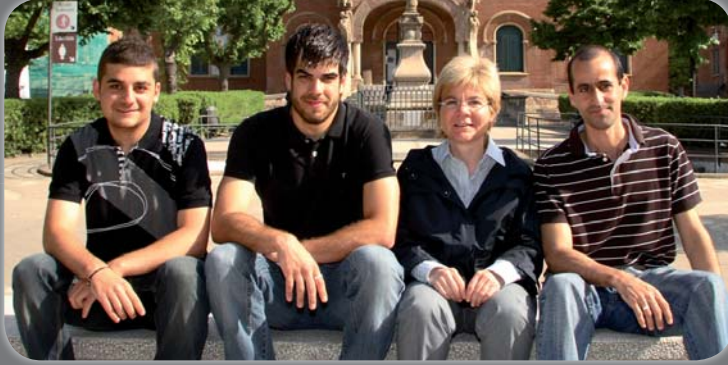
\*TIF: 92.187 \*\*MIF: 4.852

\* Total Impact Factor  
\*\* Mean Impact Factor



# Molecular Neuropharmacology

## TEAM



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## Main lines of research

- Molecular and behavioural characterization of opioid and cannabinoid receptors during chronic pain.
- The role of nitric oxide and carbon monoxide on the development and expression of neuropathic or inflammatory pain.
- The involvement of nitric oxide-carbon monoxide/CG/ PKG pathway on the effects and expression of opioid and cannabinoid receptors during chronic pain.

## Challenges

- Identify new therapeutic strategies for the treatment of chronic pain.
- Determine the main genes involved in the regulation of inflammatory and neuropathic pain.
- Study the mechanisms implicated in the regulation of opioid and cannabinoid receptors gene expression in different pain models.
- Evaluate the possible interactions between nitric oxide and carbon monoxide during acute and chronic pain.
- Investigate the prevention/ reversion of opioid tolerance in several animal chronic pain models.

## Active grants

- Pol, O. Study of new therapeutic targets in the treatment of chronic pain. Period: January 2010-December 2012. Expedient: PI09/0968.
- Pol, O. Agreement with the Department of Health: Researcher stabilization. Period: January 2006-December 2010. Expedient: 06/DPT SALUT.
- Pol, O. New strategies in the treatment of chronic inflammatory and neuropathic pain. Period: February 2008-February 2012. Expedient: 07/0810.

## Scientific production

### INDEXED PUBLICATIONS

01 Hervera A., Negrete R., Leanez S., Martín-Campos J.M., Pol O. The spinal cord expression of neuronal and inducible nitric oxide synthases and their contribution in the maintenance of neuropathic pain in mice. *PLoS One*; 5(12)  
**IF: 4.411**

02 Hervera A., Negrete R., Leanez S., Martín-Campos J., Pol O. The role of nitric oxide in the local antiallodynic and antihyperalgesic effects and expression of  $\delta$ -opioid and cannabinoid-2 receptors during neuropathic pain in mice. *J. Pharmacol. Exp. Ther.*; 334(3):887-896  
**IF: 4.017**

\*TIF: 8.428 \*\*MIF: 4.214

\* Total Impact Factor  
\*\*Mean Impact Factor





# Human Experimental Neuropsychopharmacology

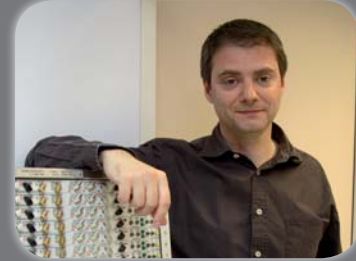
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### Coordinator

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## Main lines of research

### General neuropsychopharmacology:

Pharmacological modulation of the different neurotransmission systems so as to study the role of these systems in advanced cognitive functions (executive control) and emotions (anxiety models). A number of research articles have already been published.

### Neuropsychopharmacology of abused substances:

Study of the effects on the central nervous system of psychodysleptic drugs such as ayahuasca, salvinorin A, dimethyltryptamine and THC.

## Challenges

- Consolidate existing re-search lines and extend them through possible cooperation agreements with other groups and according to the growth of the group itself.
- Obtain emerging-group re-cognition for the Experimental Human Neuropsychopharmacology.
- Obtain stable funding for the group and support in terms of technical staff.
- Communicate our activities.
- Maintain existing external cooperation agreements.
- Establish new cooperation agreements within the HSCSP Research Institute.

**\*TIF: 10.294 \*\*MIF: 3.431**

## Scientific production

### INDEXED PUBLICATIONS

**01** Fabregas J.M., Gonzalez D., Fondevila S., Cutchet M., Fernandez X., Barbosa P.C.R., Alcazar-Corcoles M.T., Barbanoj M.J., Riba J., Bouso J.C. Assessment of addiction severity among ritual users of ayahuasca. *Drug Alcohol Depend.*; 111(3):257-261  
**IF: 3.365**

**02** Alonso J.F., Mananas M.A., Romero S., Hoyer D., Riba J., Barbanoj M.J. Drug effect on EEG connectivity assessed by linear and nonlinear couplings. *Hum. Brain Mapp.*; 31(3):487-497  
**IF: 5.107**

**03** Riba J., Heldmann M., Carreiras M., Munte T.F. A neuro-imaging study of conflict during word recognition. *Neuroreport*; 21(11):741-745  
**IF: 1.822**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Pharmacological Research in Humans

TEAM



**Coordinator**  
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UAB  
UPC

Main lines of research

**Clinical trials that offer no therapeutic benefits to volunteer participants:**

- Phase I clinical trials (healthy volunteers) whose main objectives include: first-time-in-humans, safety and tolerability (local and 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 same or different characteristics: the elderly, obese

volunteers, postmenopausal volunteers, patients with liver or kidney failure.

- Collaboration with clinical services to conduct phase II or phase III studies.

**Neuro-physio-pharmacology of sleep/wake states:**

- Investigate human brain activity in sleep and wakefulness, mechanisms involved in these two states, problems derived from sleep disturbances and possible interventions to treat these.
- Approach the phenomenon as a continuum, that is, that 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. The phenomenon under study cannot be evaluated without taking this interactivity into account: develop studies that consider the 24-hour day/night cycle.

- Use psychomotor performance tests, subjective evaluation scales, neurophysiologic recordings (quantitative EEG, evoked-sensorial potentials and polysomnography), psychophysiological tests and pupillometric tests and their interaction with transcranial magnetic stimulation (TMS) as evaluation tools.

Active grants

- Barbanajt, M. Human pharmacology of salvinorin-A: pharmacokinetic-pharmacodynamic study of dose-response and mechanism of action pharmacological blocking of the effects. Period: January 2009-December 2011. Expedient: SAF08-02431.
- Gich, I. Assessing the quality and scientific impact of cancer clinical trials conducted in Spain. Period: January 2007-June 2011. Expedient: PI06/0649.



## 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 neuro-physio-pharmacology of sleep/wake states, not focusing only on pharmacotherapeutic objectives but also on physiopathologic objectives in related fields, such as dreams.
- Develop the performance of neurophysiologic recordings 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 double objective: to return the knowledge generated to the society and to 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 the two main research lines, i.e., the application of good clinical practices (GCPs) in clinical research sleep medicine and its medical (pathology and treatment) and social (quality of life, prevention of accident risk) consequences.

\*TIF: 33.49 \*\*MIF: 3.721

## Scientific production

## INDEXED PUBLICATIONS

- 01** Fabregas J.M., Gonzalez D., Fond-  
evila S., Cutchet M., Fernandez X.,  
Barbosa P.C.R., Alcazar-Corcoles  
M.T., Barbanoj M.J., Riba J., Bouso  
J.C. Assessment of addiction sever-  
ity among ritual users of aya-  
huasca. *Drug Alcohol Depend.*;  
111(3):257-261  
**IF: 3.365**
- 02** Garcia-Gea C., Ballester M.R.,  
Martinez J., Antonijoan R.M., Do-  
nado E., Izquierdo I., Barbanoj  
M.-J. Ruptadine does not poten-  
tiate the CNS depressant effects  
of lorazepam: Randomized, dou-  
ble-blind, crossover, repeated  
dose, placebo-controlled study.  
*Br. J. Clin. Pharmacol.*; 69(6):663-  
674  
**IF: 3.063**
- 03** Molto J., Valle M., Santos J.R.,  
Mothe B., Miranda C., Cedeno S.,  
Negredo E., Yritia M., Videla S.,  
Barbanoj M.J., Clotet B. Treat-  
ment simplification to once daily  
darunavir/ritonavir guided by  
the darunavir inhibitory quotient  
in heavily pretreated HIV-infected  
patients. *Antivir. Ther.*;  
15(2):219-225  
**IF: 3.774**
- 04** Donado E., Izquierdo I., Perez I.,  
Garcia O., Antonijoan R.Ma., Gich  
I., Solans A., Pena J., Morganroth  
J., Barbanoj M.J. No cardiac ef-  
fects of therapeutic and suprath-  
erapeutic doses of rupatadine:  
Results from a 'thorough QT/QTc  
study' performed according to  
ICH guidelines. *Br. J. Clin. Phar-  
macol.*; 69(4):401-410  
**IF: 3.063**
- 05** Alonso J.F., Mananas M.A., Rome-  
ro S., Hoyer D., Riba J., Barbanoj  
M.J. Drug effect on EEG connec-  
tivity assessed by linear and non-  
linear couplings. *Hum. Brain  
Mapp.*; 31(3):487-497  
**IF: 5.107**
- 06** Barajas-Nava L., Sola I., Delgado-  
Noguera M., Gich I., Villagran  
C.O., Bonfill X., Alonso-Coello P.  
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*Qual. Saf. Health Care*; 19(6)  
**IF: 2.856**
- 07** Alonso-Coello P., Irfan A., Sola I.,  
Gich I., Delgado-Noguera M.,  
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praisal studies. *Qual. Saf. Health  
Care*; 19(6)  
**IF: 2.856**
- 08** Garcia-Patterson A., Gich I., Ami-  
ni S.B., Catalano P.M., De Leiva A.,  
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throughout pregnancy in wom-  
en with type 1 diabetes mellitus:  
Three changes of direction. *Dia-  
betologia*; 53(3):446-451  
**IF: 6.973**
- 09** Verd S., Nadal-Amat J., Gich I.,  
Leshem M. Salt preference of  
nursing mothers is associated  
with earlier cessation of exclu-  
sive breastfeeding. *Appetite*;  
54(1):233-236  
**IF: 2.433**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Clinical Psychiatry

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Main lines of research

- Psychotic disorders (first episodes).
- Affective disorders (major depression).
- Borderline personality disorders.
- Mental health therapy.

Challenges

- Foster research that reduces the healthcare, social and personal costs of mental illness by exploring areas such as epidemiology, etiopathogenesis, physiopathology, prevention and treatment.
- Foster research into mental health therapies.
- Biological and genetic markers in affective disorders.
- Implementation of new therapeutic programmes, depression evaluation and social aspects of depression.

**Research into psychotic disorders:**

- Neuroimaging studies in early psychotic episodes.
- Study of environmental, biological and genetic factors in psychosis.
- Efficacy and effectiveness studies of anti-psychotic drugs.

**Research into affective disorders:**

- Identification and evaluation of new therapeutic targets in depression.
- Neuroimaging studies in early psychotic episodes.

**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.

**Mental health therapy research:**

- Efficacy and treatment resistance.
- Systematic reviews.



## Active Grants

- Álvarez, E. Grants to support research groups. Clinical Psychiatry Group. Period: September 2009-December 2013. Expedient: 2009SGR 179.
- Álvarez, E. Prevention of relapse in major depressive disorder using a cognitive-behaviour therapy group format. Period: October 2007-December 2011. Expedient: PI07/1236.
- Corripio, I. Expression of glycine transporter type 1 in patients diagnosed with schizophrenia: a study with [<sup>11</sup>C]GSK931145 PET. Period: March 2010-March 2013. Expedient: 90531.
- Corripio, I. Double-blind, placebo-controlled study of the efficacy of reboxetine and citalopram as adjunctive therapy to second-generation antipsychotics in treating the negative symptoms of schizophrenia. Period: October 2007-December 2011. Expedient: EC07/90632.
- Corripio, I. Genotype-phenotype and environment interaction. Application to a predictive model in first-episode psychosis. Period: January 2009-December 2011. Expedient: PI08/0705.
- Pascual, J. Study of the effectiveness of neurocognitive rehabilitation in borderline personality disorder. Period: October 2010-December 2011. Expedient: PI09/90751.
- Pérez, J. Comparative efficacy of two psychosocial intervention strategies (psychoeducational versus neurocognitive) as adjunctive treatment to pharmacological treatment versus standard treatment in bipolar disorder (ETES). Period: January 2009-December 2010. Expedient: PI08/90916.
- Pérez, V. Therapeutic strategies for major depressive disorder resistant to treatment with selective serotonin reuptake inhibitors. Pragmatic, parallel, randomized trial with masked evaluation. Period: October 2007-December 2011. Expedient: EC07/90244.
- Pérez, V. Deep brain stimulation: functional neuroimaging studies, optimization of stimulation parameters and new indications in affective disorders. Period: January 2010-December 2012. Expedient: PI09/0580.

\*TIF: 31.685 \*\*MIF: 3.520

## Scientific production

## INDEXED PUBLICATIONS

- 01** Pascual J.C., Martin-Blanco A., Soler J., Ferrer A., Tiana T., Alvarez E., Perez V. A naturalistic study of changes in pharmacological prescription for borderline personality disorder in clinical practice: From APA to NICE guidelines. *Int. Clin. Psychopharmacol.*; 25(6):349-355  
IF: 2.762
- 02** de Diego-Adelino J., Portella M.J., Puigdemont D., Perez-Egea R., Alvarez E., Perez V. A short duration of untreated illness (DUI) improves response outcomes in first-depressive episodes. *J. Affect. Disord.*; 120(1-3):221-225  
IF: 3.74
- 03** Soria V., Martinez-Amoros E., Escaramis G., Valero J., Perez-Egea R., Garcia C., Gutierrez-Zotes A., Puigdemont D., Bayes M., Crespo J.M., Martorell L., Vilella E., Labad A., Vallejo J., Perez V., Menchon J.M., Estivill X., Gratacos M., Urretavizcaya M. Differential association of circadian genes with mood disorders: CRY1 and NPAS2 are associated with unipolar major depression and clock and VIP with bipolar disorder. *Neuropsychopharmacology*; 35(6):1279-1289  
IF: 6.685
- 04** Van Der Loos M.L.M., Mulder P., Hartong E.G.T.M., Blom M.B.J., Vergouwen A.C., Van Noorden M.S., Timmermans M.A., Vieta E., Nolen W.A., LamLit Study Group (col. Alvarez E.). Efficacy and safety of two treatment algorithms in bipolar depression consisting of a combination of lithium, lamotrigine or placebo and paroxetine. *Acta Psychiatr. Scand.*; 122(3):246-254  
IF: 3.795
- 05** Gesteira A., Barros F., Martin A., Perez V., Cortes A., Baiget M., Carracedo A. Pharmacogenetic studies on the antipsychotic treatment. Current status and perspectives. *Actas Esp. Psiquiatri.*; 38(5):301-316  
IF: 0.695
- 06** Ramirez N., Arranz B., Salavert J., Alvarez E., Corripio I., Duenas R.M., Perez V., San L. Predictors of schizophrenia in patients with a first episode of psychosis. *Psychiatry Res.*; 175(40575):11-14  
IF: 2.803
- 07** Garcia-Sevilla J.A., Alvaro-Bartolome M., Diez-Alarcia R., Ramos-Miguel A., Puigdemont D., Perez V., Alvarez E., Meana J.J. Reduced platelet G protein-coupled receptor kinase 2 in major depressive disorder: Antidepressant treatment-induced upregulation of GRK2 protein discriminates between responder and non-responder patients. *Eur. Neuropsychopharmacol.*; 20(10):721-730  
IF: 4.201
- 08** Garcia-Sevilla J.A., Alvaro-Bartolome M., Diez-Alarcia R., Ramos-Miguel A., Puigdemont D., Perez V., Alvarez E., Meana J.J. Reduced platelet G protein-coupled receptor kinase 2 in major depressive disorder: Antidepressant treatment-induced upregulation of GRK2 protein discriminates between responder and non-responder patients. *Eur. Neuropsychopharmacol.*; 20(10):721-730  
IF: 4.201
- 09** Novick D., Haro J.M., Suarez D., Perez V., Dittmann R.W., Haddad P.M. Predictors and clinical consequences of non-adherence with antipsychotic medication in the outpatient treatment of schizophrenia. *Psychiatry Res.*; 176(40604):109-113  
IF: 2.803

\* Total Impact Factor  
\*\* Mean Impact Factor



# Genetics in Neurodegenerative Diseases

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Main lines of research

**Genetics in presenile Alzheimer disease:**

A multicentre project compiling genetic samples from over 200 presenile patients with Alzheimer (disease onset before 65 years), already giving rise to several international papers. A new project is now underway with these samples to investigate new genes involved in presenile forms without APP or presenilin gene mutations (FIS 529/766).

**Genetic alterations in familial and sporadic Lewy body disease:**

This line of investigation studies genetic alterations that may be related to dementias with familial and/or sporadic Lewy body disease. Several papers on results have been published to date. We are presently studying sporadic forms: we have

requested brain tissue samples from the Barcelona University Neurological Tissue Bank and we are recruiting Neurology Service Memory Clinic patients with a clinical probability of Lewy body dementia. Mutations in genes related to this illness have been ruled out in about 55 samples (half confirmed by pathological diagnosis). In samples without mutations we will study the genotype of the genome to detect possible presence of genomic anomalies associated with the disease.

**Genetic risk factors of dementia in Parkinson disease:**

In collaboration with the Movement Disorders Unit we are collecting samples from patients with Parkinson disease. All patients undergo specific tests to detect dementia associated with the disorder. We will

conduct sequencing of genes related to familial or sporadic Parkinson disease, and genetic variants related to neurodegenerative dementias will be genotyped. The objective is to find genetic risk factors for dementia in patients with Parkinson.

**Prevalence of mutations in genes related to amyotrophic lateral sclerosis (ALS):**

In collaboration with the Neurology Service Neuromuscular Nursing Unit we are creating a gene bank of patients with ALS in order to study mutations in genes that promote familial and sporadic forms of the disease.

Active grants

- Clarimon, J. Genetics of alpha-synucleinopathies: the continuum approach to Parkinson disease-Parkinson disease with dementia-dementia with Lewy bodies. Period: January 2010-December 2012. Expedient: PI09/0098.
- Clarimon, J. SNS research contracts. Period: October 2007-September 2011. Expedient: CP07/00010.
- Clarimon, J. SNS research contracts. Period: February 2008-January 2014. Expedient: CP07/00010.



## Challenges

**Genetic architecture of complex diseases caused by neurodegenerative processes:**

- Research into familial aggregation for specific diseases to determine genetic links and clone new genes.
- Genetic association studies to establish genetic and genomic risk factors for different diseases.
- Study of the prevalence of genetic mutations in the Spanish population.
- Expansion of the genetic library already consisting of over 1,500 DNA samples.
- To continue to expand the DNA bank to achieve a numerous, well-characterized, homogenous sample of patients and their relatives. This will provide invaluable potential for high-level genetic research into diseases of this nature.

## Scientific production

**INDEXED PUBLICATIONS**

- 01** Samaranch L., Cervantes S., Barabash A., Alonso A., Cabranes J.A., Lamet I., Ancin I., Lorenzo E., Martinez-Lage P., Marcos A., Clarimon J., Alcolea D., Lleo A., Blesa R., Gomez-Isla T., Pastor P. The effect of MAPT H1 and APOE ε4 on transition from mild cognitive impairment to dementia. *J. Alzheimers Dis.*; 22(4):1065-1071  
**IF: 4.261**
- 02** Llado A., Fortea J., Ojea T., Bosch B., Sanz P., Valls-Sole J., Clarimon J., Molinuevo J.L., Sanchez-Valle R. A novel PSEN1 mutation (K239N) associated with Alzheimer's disease with wide range age of onset and slow progression. *Eur. J. Neurol.*; 17(7):994-996  
**IF: 3.765**
- 03** Vargas T., Bullido M.J., Martinez-Garcia A., Antequera D., Clarimon J., Rosich-Estrago M., Martin-Requero A., Mateo I., Rodriguez-Rodriguez E., Vilella-Cuadrada E., Frank A., Lleo A., Molina-Porcel L., Blesa R., Combarros O., Gomez-Isla T., Bermejo-Pareja F., Valdivieso F., Carro E. A megalin polymorphism associated with promoter activity and Alzheimer's disease risk. *Am. J. Med. Genet. B*; 153(4):895-902  
**IF: 4.156**
- 04** Guerreiro R.J., Baquero M., Blesa R., Boada M., Bras J.M., Bullido M.J., Calado A., Crook R., Ferreira C., Frank A., Gomez-Isla T., Hernandez I., Lleo A., Machado A., Martinez-Lage P., Masdeu J., Molina-Porcel L., Molinuevo J.L., Pastor P., Perez-Tur J., Relvas R., Oliveira C.R., Ribeiro M.H., Rogaeva E., Sa A., Samaranch L., Sanchez-Valle R., Santana I., Tarraga L., Valdivieso F., Singleton A., Hardy J., Clarimon J. Genetic screening of Alzheimer's disease genes in Iberian and African samples yields novel mutations in presenilins and APP. *Neurobiol. Aging*; 31(5):725-731  
**IF: 6.634**
- 05** Seto-Salvia N., Clarimon J. Genetics of Alzheimer's disease. *Rev. Neurologia*; 50(6):360-364  
**IF: 1.218**
- 06** Guardia-Laguarta C., Pera M., Clarimon J., Molinuevo J.L., Sanchez-Valle R., Llado A., Coma M., Gomez-Isla T., Blesa R., Ferrer I., Lleo A. Clinical, neuropathologic, and biochemical profile of the amyloid precursor protein I716F mutation. *J. Neuropathol. Exp. Neurol.*; 69(1):53-59  
**IF: 4.19**
- 07** Coma M., Sereno L., Da Rocha-Souto B., Scotton T.C., Espana J., Sanchez M.B., Rodriguez M., Agullo J., Guardia-Laguarta C., Garcia-Alloza M., Borrelli L.A., Clarimon J., Lleo A., Bacskai B.J., Saura C.A., Hyman B.T., Gomez-Isla T. Triflusal reduces dense-core plaque load, associated axonal alterations and inflammatory changes, and rescues cognition in a transgenic mouse model of Alzheimer's disease. *Neurobiol. Dis.*; 38(3):482-491  
**IF: 5.121**

\*TIF: 29.345 \*\*MIF: 4.192

\* Total Impact Factor  
\*\* Mean Impact Factor



# Neurobiology of Dementia

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**Main lines of research**

- Identification of new biochemical markers in cerebrospinal fluid in Alzheimer disease and other neurodegenerative dementias.
- Integral molecular characterization of the gamma-secretase complex in Alzheimer disease.
- Interaction and synergic effects between the tau protein and alphasynuclein in Lewy body disease.
- Role of progranulin and TDP-43 in frontotemporal dementia.
- Therapeutic implications of anti-inflammatory drugs and other gamma-secretase modulators in Alzheimer disease.

**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 that support applications for European and international projects.
- Establish links with technological innovation groups and companies to foster patent applications and set up contracts.
- Develop a national multi-centre project on Alzheimer disease markers.

**Active grants**

- Blesa, R. Alzheimer disease and polymorphisms of proteins involved in the reelin signalling pathway. Period: October 2007-September 2011. Expedient: PI07/1150.
- Lleó, A. Molecular targets of nonsteroidal antiinflammatory drugs: implications for chronic pain. Period: February 2008-August 2011. Expedient: 72610.
- Lleó, A. Gamma-secretase complex: interactions and therapeutic implications in Alzheimer disease. Period: October 2007-June 2011. Expedient: PI07/1137.




**INDEXED PUBLICATIONS**

- 01** Marquie Sayagues M., Da Silva Alves L., Molina-Porcel L., Alcolea Rodriguez D., Sala Matavera I., Sanchez-Saudinos M.B., Camacho Marti V., Estorch Cabrera M., Blesa Gonzalez R., Gomez-Isla T., Lleo Bisa A. 123I-MIBG myocardial scintigraphy in the diagnosis of Lewy body dementia. *Neurologia*; 25(7):414-421  
**IF: 0.589**
- 02** Vargas T., Bullido M.J., Martinez-Garcia A., Antequera D., Clarimon J., Rosich-Estrago M., Martin-Requero A., Mateo I., Rodriguez-Rodriguez E., Vilella-Cuadrada E., Frank A., Lleo A., Molina-Porcel L., Blesa R., Combarros O., Gomez-Isla T., Bermejo-Pareja F., Valdivieso F., Carro E. A megalin polymorphism associated with promoter activity and Alzheimer's disease risk. *Am. J. Med. Genet. B*; 153(4):895-902  
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- 03** Frank L., Howard K., Jones R., Lacey L., Leibman C., Lleo A., Mannix S., Mucha L., McLaughlin T., Zarit S. A qualitative assessment of the concept of dependence in Alzheimers disease. *Am. J. Alzheimers Dis. Other Dement.*; 25(3):239-247  
**IF: 1.774**
- 04** Guardia-Laguarta C., Pera M., Clarimon J., Molinuevo J.L., Sanchez-Valle R., Llado A., Coma M., Gomez-Isla T., Blesa R., Ferrer I., Lleo A. Clinical, neuropathologic, and biochemical profile of the amyloid precursor protein I716F mutation. *J. Neuropathol. Exp. Neurol.*; 69(1):53-59  
**IF: 4.19**
- 05** Guerreiro R.J., Baquero M., Blesa R., Boada M., Bras J.M., Bullido M.J., Calado A., Crook R., Ferreira C., Frank A., Gomez-Isla T., Hernandez I., Lleo A., Machado A., Martinez-Lage P., Masdeu J., Molina-Porcel L., Molinuevo J.L., Pastor P., Perez-Tur J., Relvas R., Oliveira C.R., Ribeiro M.H., Rogaeva E., Sa A., Samaranch L., Sanchez-Valle R., Santana I., Tarraga L., Valdivieso F., Singleton A., Hardy J., Clarimon J. Genetic screening of Alzheimer's disease genes in Iberian and African samples yields novel mutations in presenilins and APP. *Neurobiol. Aging*; 31(5):725-731  
**IF: 6.634**
- 06** Sanchez-Benavides G., Gomez-Anson B., Molinuevo J.L., Blesa R., Monte G.C., Buschke H., Pena-Casanova J. Medial temporal lobe correlates of memory screening measures in normal aging, MCI, and AD. *J. Geriatr. Psychiatry Neurol.*; 23(2):100-108  
**IF: 2.131**
- 07** Suarez-Calvet M., Rojas-Garcia R., Querol L., Sarmiento L.M., Domingo P. Polyradiculoneuropathy associated to human herpesvirus 2 in an HIV-1-infected patient (Elsberg Syndrome): Case report and literature review. *Sex. Transm. Dis.*; 37(2):123-125  
**IF: 3.268**
- 08** Sanchez-Benavides G., Gomez-Anson B., Quintana M., Vives Y., Manero R.M., Sainz A., Blesa R., Molinuevo J.L., Pena-Casanova J. Problem-solving abilities and frontal lobe cortical thickness in healthy aging and mild cognitive impairment. *J. Int. Neuropsychol. Soc.*; 16(5):836-845  
**IF: 2.91**
- 09** Martinez-Hernandez E., Martinez-Ramirez S., Delgado-Mederos R., Alcolea D., Marquie M., Marin R., De Juan M., Marti-Vilalta J.L., Marti-Fabregas J. Remote cerebral hematomas in patients treated with intravenous rt-PA. *J. Neurol.*; 257(7):1062-1066  
**IF: 3.853**
- 10** Badiola N., Suarez-Calvet M., Lleo A. Tau phosphorylation and aggregation as a therapeutic target in tauopathies. *CNS Neurol. Disord. Drug Targets*; 9(6):727-740  
**IF: 3.618**
- 11** Coma M., Sereno L., Da Rocha-Souto B., Scotton T.C., Espana J., Sanchez M.B., Rodriguez M., Agullo J., Guardia-Laguarta C., Garcia-Alloza M., Borrelli L.A., Clarimon J., Lleo A., Bacskai B.J., Saura C.A., Hyman B.T., Gomez-Isla T. Triflusal reduces dense-core plaque load, associated axonal alterations and inflammatory changes, and rescues cognition in a transgenic mouse model of Alzheimer's disease. *Neurobiol. Dis.*; 38(3):482-491  
**IF: 5.121**
- 12** Espana J., Valero J., Minano-Molina A.J., Masgrau R., Martin E., Guardia-Laguarta C., Lleo A., Gimenez-Llort L., Rodriguez-Alvarez J., Saura C.A.  $\beta$ -amyloid disrupts activity-dependent gene transcription required for memory through the CREB co-activator CRT1. *J. Neurosci.*; 30(28):9402-9410  
**IF: 7.271**
- 13** Guardia-Laguarta C., Pera M., Lleo A.  $\gamma$ -secretase as a therapeutic target in Alzheimer's disease. *Curr. Drug Targets*; 11(4):506-517  
**IF: 3.061**

**\*TIF: 48.576 \*\*MIF: 3.736**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Neuroradiology

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**Main lines of research**

- Diagnostic markers for magnetic resonance imaging in neurosciences, particularly in neurodegenerative and psychiatric illnesses.
- Correlation of these markers with other types of markers, such as clinical, neuropsychological, genetic and biochemical markers.
- Use of information technologies in neuroimaging research.

**Active grants**

- De Juan, M. Presenile dementia characterization by means of high-field MRI (3T) (structural and diffusion tensor). Period: November 2009-October 2011. Expedient: 08/SERAM.
- Gómez, B. Grid-determined MRI biomarkers (high field, 3T) in preclinical carriers of rare genetic neurodegenerative diseases. Period: October 2007-December 2010. Expedient: PI07/0770.
- Gómez, B. Predicting response to cognitive behaviour therapy in schizophrenic patients with persistent auditory hallucination using fMRI. Period: May 2010-May 2013. Expedient: 91230.
- Rusalleda, J. Matching structural and functional alterations in patients with schizophrenia studied with MRI. Period: January 2009-December 2011. Expedient: PI08/0475.



\*TIF: 27.877 \*\*MIF: 3.982

## INDEXED PUBLICATIONS

- 01 Puig-Domingo M., Resmini E., Gomez-Anson B., Nicolau J., Mora M., Palomera E., Marti C., Halperin I., Webb S.M. Magnetic resonance imaging as a predictor of response to somatostatin analogs in acromegaly after surgical failure. *J. Clin. Endocrinol. Metab.*; 95(11):4973-4978  
**IF: 6.495**
- 02 Rodriguez-Revenga L., Pagonabarraga J., Gomez-Anson B., Lopez-Mourello O., Madrigal I., Xuncula M., Kulisevsky J., Mila M. Motor and mental dysfunction in mother-daughter transmitted FXTAS. *Neurology*; 75(15):1370-1376  
**IF: 8.017**
- 03 Sanchez-Benavides G., Gomez-Anson B., Quintana M., Vives Y., Manero R.M., Sainz A., Blesa R., Molinuevo J.L., Pena-Casanova J. Problem-solving abilities and frontal lobe cortical thickness in healthy aging and mild cognitive impairment. *J. Int. Neuropsychol. Soc.*; 16(5):836-845  
**IF: 2.91**
- 04 Sanchez-Benavides G., Gomez-Anson B., Molinuevo J.L., Blesa R., Monte G.C., Buschke H., Pena-Casanova J. Medial temporal lobe correlates of memory screening measures in normal aging, MCI, and AD. *J. Geriatr. Psychiatry Neurol.*; 23(2):100-108  
**IF: 2.131**
- 05 Sanchez-Benavides G., Gomez-Anson B., Sainz A., Vives Y., Del-fino M., Pena-Casanova J. Manual validation of FreeSurfer's automated hippocampal segmentation in normal aging, mild cognitive impairment, and Alzheimer Disease subjects. *Psychiatry Res. Neuroimaging*; 181(3):219-225  
**IF: 2.064**
- 06 Pugliese M., Carrasco J.L., Gomez-Anson B., Andrade C., Zamora A., Rodriguez M.J., Mascort J., Mahy N. Magnetic resonance imaging of cerebral involuntional changes in dogs as markers of aging: An innovative tool adapted from a human visual rating scale. *Vet. J.*; 186(2):166-171  
**IF: 2.796**
- 07 Henley S.M.D., Ridgway G.R., Scallan R.I., Kloppel S., Tabrizi S.J., Fox N.C., Kassubek J. Pitfalls in the use of voxel-based morphometry as a biomarker: Examples from Huntington disease. *Am. J. Neuroradiol.*; 31(4):711-719  
**IF: 3.464**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Ageing Institute

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Main lines of research

- Active ageing.
- Mobility, falls and exercise.
- Alzheimer disease and related disorders.
- Nutrition and feeding.
- Quality of life.
- Epidemiological clinical research.
- Long-term care services and dependence.
- Sociodemographic and epidemiological studies.
- Social policies and participation.

Challenges

**Research area:**

Develop in-house research projects in response to internal interests. Conduct ad-hoc research, developing projects through specific contracts with public and private institutions. Translate research findings into action.

**Studies and consultancy area:**

- The scope of this area is to identify and research problems related to public policy and organization of services, recommend appropriate measures and provide technical assistance to the application of these recommendations in the field of ageing.

**Participation and psycho-social area:**

- This area focuses on psychological and social aspects of ageing and participation of the elderly. Specific studies and research are undertaken. In collaboration with the other areas we perform action research studies and advise public and private entities about the design of products and services. We promote activities to increase participation levels of the elderly and other generations in the context of active ageing.



## Active grants

- Domènech, S. Chi kung: new interventions for caregivers and people with Alzheimer. Period: 2009-2010.
- Salvà, A. Changes in autonomy in people with Alzheimer disease in analyses of the Spanish database of demented patients (Nutriactive database). Period: 2009-2010.
- Salvà, A. Effects of hydration on the cognitive performance of elderly people. Period: 2009-2010.
- Salvà, A. Study measuring the risk of falls aimed at intervention in residences (EMerCOI-R). Period: 2008-2011. Expedient: 08/90162.
- Salvà, A. Study of the prescription of enteral nutritional support in residences (PRESNER). Period: 2010-2012.
- Salvà, A. Functional and factorial improvement associated with convalescence units. Analysis of the socio-medical MBDS. Period: 2010.
- Salvà, A. Analysis of the complexity of long-stay care. Period: 2010.
- Salvà, A. Expert integrated tele-assistance and telemedicine e-system for the prevention of dependency and the promotion of personal autonomy for elderly people at home. E-Health Platform for healthy ageing. Period: 2010-2012. Expedient: TSI-020110-2009-444.

\*TIF: 4.968 \*\*MIF: 2.484

## Scientific production

## INDEXED PUBLICATIONS

- 01 Gustavsson A., Jonsson L., Rapp T., Reynish E., Ousset P.J., Andrieu S., Cantet C., Winblad B., Vellas B., Wimo A., Vellas B., Jones R.W., Burns A., Bullock R., Malick A., Salmon E., Waldemar G., Dartigues J.F., Pasquier F., Touchon J., Robert Ph., Rigaud A.S., Camus V., Stiens G., Frolich L., Tsolaki M., Frisoni G., Rodriguez G., Cherubini A., Spuru L., Boada B., Salva A., Aguera-Morales E., Ribera-Casado J.M., Lage P.M., Winblad B., Zekry D., Scheltens P., Olde-Rikkert M., Cortes C., Cantet C., Ousset P.J., Caillaud C., Reynish E. Differences in resource use and costs of dementia care between European countries: Baseline data from the ICTUS study. *J. Nutr. Health Aging*; 14(8):648-654  
**IF: 2.484**
- 02 Villars H., Oustric S., Andrieu S., Baeyens J.P., Bernabei R., Brodaty H., Brummel-Smith K., Celafu C., Chappell N., Fitten J., Frisoni G., Froelich L., Guerin O., Gold G., Holmerova I., Iliffe S., Lukas A., Melis R., Morley J.E., Nies H., Nourhashemi F., Petermans J., Casado Ribera J., Rubenstein L., Salva A., Sieber C., Sinclair A., Schindler R., Stephan E., Wong R.Y., Vellas B. The primary care physician and Alzheimer's disease: An International position paper. *J. Nutr. Health Aging*; 14(2):110-120  
**IF: 2.484**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Addictive Behaviours

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**Technicians**  
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Main lines of research

**Alcohol:**

- Study of the usefulness of the EMCA, IRISA and SPECT scales with IBZM as possible predictors of outcome in alcohol-dependent patients during the first 12 weeks of recovery.
- Clinical study with escitalopram for treatment of depression and anxiety associated with alcoholism.
- Randomized, double-blind, parallel, placebo-controlled study on the efficacy of nalmefene in alcohol-dependent patients.

**Cocaine:**

- Evaluation of cocaine craving during hospitalization conditions.

**Smoking:**

- Multicentre, open, randomized clinical trial to measure the efficacy of proactive telephonic follow up as an aid to smoking cessation in comparison with in situ methods (PINO08/106/902).
- Multicentre interventional project on smoking in psychiatric patients. Treatment of tobacco smoking with varenicline in psychiatric patients (Code CEIC 08/158 OBS).

- Multicentre clinical trial to evaluate the dose-response relationship for the efficacy and safety of surinabant as an aid to help smokers quit (Sanofi-Aventis DRI6938.2).

**Opiates:**

- Patient satisfaction concerning maintenance treatment with opioid agonists.
- Satisfaction of the heroin-dependent patient regarding methadone and methadone pharmacogenetics.

Challenges

- Achieve full integration in the Addictive Disorders Network rather than mere participation as an associated clinical group.
- Establish bidirectional links between clinical practice and investigation both to suggest hypotheses and to 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.
- Establish bidirectional connection between clinical practice and investigation both to suggest hypotheses and to incorporate recent advances.



## Active grants

- Pérez, J. Thematic network for addictive disorders. Clinical Group. Period: January 2008-December 2010. Expedient: RD06/0001/0012.
- Pérez, J. Towards valid and reliable assessment of abstinence from cocaine: psychometric properties of the Spanish version of the CSSA scale for patients with primary reliance on cocaine and in heroin- and cocaine-dependent patients in maintenance. Period: October 2009-October 2010. Expedient: 2009/065.
- Pérez, J. Case-control study to assess the association between heroin-dependent patient satisfaction with methadone maintenance treatment and methadone pharmacogenetics. Period: January 2010-December 2012. Expedient: PI09/1072.
- Trujols, J. The perspective of patients with schizophrenia in the identification, prioritization and measurement of pragmatic outcome variables: meta-synthesis and systematic review of studies evaluating preferences. Period: January 2010-December 2011. Expedient: PI09/90034.

\*TIF: 2.499 \*\*MIF: 1.249

## Scientific production

## INDEXED PUBLICATIONS

- 01 De Los Cobos J.P., Sinol N., Banulus E., Batlle F., Tejero A., Trujols J. Personality traits of cocaine-dependent patients associated with cocaine-positive baseline urine at hospitalization. *Am. J. Drug Alcohol Abuse*; 36(1):52-56  
IF: 1.372
- 02 Trujols J., Iraurgi I., Sola I., Ballesteros J., Sinol N., Batlle F., De Los Cobos J.P. HIV infection and injecting drug users: The urgency of reinvigorating harm-reduction programmes. *Adicciones*; 22(2):135-140  
IF: 1.127

\* Total Impact Factor  
\*\* Mean Impact Factor





**AREA 5**

# *Uronephrology and Experimental Surgery*

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# General and Digestive Surgery

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Main lines of research

**Gastrointestinal surgery:**

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

**Oncological and hepatobilio-pancreatic surgery:**

- Surgery for liver metastasis in colorectal cancer.

- Development of diagnostic and therapeutic techniques in the global context of treatment for liver metastasis in colorectal carcinoma.
- Surgery for primary hepatic tumours: determination of efficient prognostic parameters for surgical resection of hepatocarcinoma and likelihood of tumour recurrence after resection.
- Introduction of the laparoscopic methodology in biliary lithiasis.

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

**Emergency care:**

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

Challenges

**Gastrointestinal surgery:**

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

**Hepatobiliopancreatic surgery for cancer:**

- Development of techniques to study liver volume and function
- Development of experimental stu-

dies on the function and healing of bilio-intestinal sutures.

- Studies of the value of nutrition in patients undergoing aggressive surgery for highly debilitating cancer.
- Suitable stratification of GIST tumours in accordance with an anatomopathological classification.
- Viability of surgical interventions considering the likelihood of disease recurrence.

**Emergency surgery:**

- Consolidation of a multidisciplinary group for polytraumatized patient care.

**Breast surgery:**

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

**Endocrinal and cervical surgery:**

- Technical innovations in surgery.



\*TIF: 8.581 \*\*MIF: 2.145

## Scientific production

## INDEXED PUBLICATIONS

- 01 Targarona E.M., Pallares J.L., Balague C., Luppi C.R., Marinello F., Hernandez P., Martinez C., Trias M. Single incision approach for splenic diseases: A preliminary report on a series of 8 cases. *Surg. Endosc.*; 24(9):2236-2240  
 IF: 3.436
- 02 Manterola C., Pineda V., Tort M., Targarona E., Portero R.V., Alonso P. Effectiveness of laparoscopic surgery for gallstones and common bile duct lithiasis: A systematic overview. *Int. J. Morphol.*; 28(3):729-742  
 IF: 0.363
- 03 Cugat E., Perez-Romero N., Rottellar F., Suarez M.A., Gastaca M., Artigas V., Olsina J.-J., Noguera J., Martinez S., Moreno-Sanz C., Figueras J., Herrera J., Diaz H., Caballe J., Pereira F. Laparoscopic liver surgery: 8 years of multicenter Spanish register. *J. Hepato-Biliary-Pancreat. Sci.*; 17(3):262-268  
 IF: 1.963
- 04 Hidalgo J.M.S., Targarona E.M., Martinez C., Hernandez P., Balague C., Trias M. Laparoscopic rectal surgery: Does immediate outcome differ in respect to sex? *Dis. Colon Rectum*; 53(4):438-444  
 IF: 2.819

## Active grants

Targarona, E. Prediction of pathological features of the mesorectum after laparoscopic resection of low rectal cancer, based on preoperative pelvimetry and volume analysis after 3D reconstruction of the pelvis and its contents. Period: January 2010-December 2012. Expedient: PI09/1437.

\* Total Impact Factor  
 \*\* Mean Impact Factor



# Neurosurgery

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Main lines of research

- Study of biomaterials.
- Tumour biology: gliomas, hypophysis adenomas.
- Anatomy of the skull base.
- Clinical evaluation of neurostimulation techniques in different neurological entities (treatment-resistant depression and neuropathic pain).

Active grants

Clavel, P. SME supply-chain integration for enhanced fully customizable medical implants using new biomaterials and rapid manufacturing technologies to enhance the quality of life for EU citizens (Custom-IMD). Period: February 2007-January 2011. Expedient: 07/026599-6PM.

Awards

Diario Médico Best Idea Award 2010 to HSCSP Psychiatric, Neurosurgery and Neurology Services for "Surgical Treatment of Depression".

Challenges

- Monitor the clinical trial on treatment for treatment-resistant depression using deep brain stimulation techniques, jointly with the psychiatric department.
- Evaluate neurostimulation for other disorders: cluster headache.

**Cooperation with research into gliomas:**

- Oncogenesis and Antitumour Group (GOA-HSCSP. PI: Dr. R. Mangues) in cooperation with the HSCSP Neurosurgery Department.
- Cooperation with the Cardiovascular Research Institute (managed by Drs. J. Blanco and N. Rubio) investigating the development of antitumour cell therapy strategies for the treatment of malignant gliomas.
- Cooperation with the endocrinology group regarding hypophyseal tumour biology.

- Study of biomaterials and lumbar disc prostheses, a project currently in the theoretical study phase. Custom-IMD (EU Sixth Framework Programme for R&D) project for the development of customized intervertebral disc implants. PI: Dr. Pau Clavel).
- Anatomical studies to develop new surgical approaches to skull base tumours in cooperation with the University of Barcelona-Hospital Clínic anatomy professor.

**2 cerebrovascular disease multicentre clinical trial projects (jointly with the HSCSP Neurology Department):**

- Impact-24 study of the effects of stimulation of the sphenopalatine ganglion on cerebral perfusion in patients with CVA.
- Clear III study of intraventricular fibrinolysis to treat cerebral intraventricular haemorrhaging.



## INDEXED PUBLICATIONS

01 De Quintana-Schmidt C., Casajuana-Garreta E., Molet-Teixido J., Garcia-Bach M., Roig C., Clavel-Laria P., Rodriguez-Rodriguez R., Oliver-Abadal B., Bartumeus-Jene F. Stimulation of the occipital nerve in the treatment of drug-resistant cluster headache. *Rev. Neurologia*; 51(1):19-26  
IF: 1.218

02 De Quintana-Schmidt C., Clavel-Laria P. Multiple radiation-induced neurofibromas. *Neurology*; 75(13):1214  
IF: 8.017

03 Valldeoriola F., Regidor I., Minguez-Castellanos A., Lezcano E., Garcia-Ruiz P., Rojo A., Salvador A., Castro A., Grandas F., Kulisevsky J., Marti M.J., Martinez-Martin P., Relova L., Rumia J., Camara A., Burguera J.A., Linazasoro G., Lopez De Val J., Obeso J., Rodriguez-Oroz M.C., Tolosa E., Magarinos C., Figueiras R., Cabanes L., Escamilla-Sevilla F., Katati M.J., Martin-Linares J.M., Bilbao G., Lambarri I., Gomez J.C., Rodriguez O., Villoria R., Alonso F., Ayerbe J., Muniz J., Oliver B., Aguilar M., Badenes D., Roldan P., Talamantes F., Sesar A., Gelabert M., Lopez L., Gimenez-Roldan S., Garcia F., Gironell A., Molet J., Pascu-

al-Sedano R.B., Rodriguez R. Efficacy and safety of pallidal stimulation in primary dystonia: Results of the Spanish multicentric study. *J. Neurol. Neurosurg. Psychiatry*; 81(1):65-69

IF: 4.791

\*TIF: 14.026 \*\*MIF: 4.675

\* Total Impact Factor  
\*\* Mean Impact Factor



# Nephrology

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F. Puigvert

Main lines of research

- Proteomics applied to nephrology: hypertension induced by anti-calceinurin agents.
- Hereditary kidney diseases: genetic and clinical studies in disorders such as polycystic kidneys, Alport disorder, corticoid-resistant nephrotic syndrome.
- Glomerular disorders: molecular and clinical studies in disorders such as Sjögren's syndrome, membranous glomerulopathy and vasculitis with renal involvement.
- Kidney transplant: cardiovascular risk factors, chronic nephropathy of renal graft, pharmacogenetic studies and genomic studies.
- Chronic nephropathy and cardiovascular risk: studies of genetic damage in patients with chronic renal insufficiency, epidemiological studies, clinical studies of chronic renal insufficiency, hyperparathyroidism, renal osteodystrophy and haemodialysis techniques.

Active grants

- Ars, E. Biobanks Network. January 2010-December 2012. RD09/0076/00064.
- Ballarín, J. Nephrology Research Group. Period: January 2010-December 2014. Expedient: 2009 SGR 1116.
- Ballarín, J. RedinRen. Period: January 2007-December 2011. Expedient: R06/0016/0001.
- Díaz, J. Optimal immunosuppression in patients at high risk of de novo diabetes after kidney transplantation: a prospective, multicentre, controlled trial. Period: January 2009-December 2011. Expedient: EC 08/00270.
- Torra, R. Implication of genetic variants and podocyte damage in primary nephrotic syndrome. Period: January 2010-December 2012. Expedient: PS09/01506.
- Torra, R. Clinical trial to evaluate the efficacy and safety of rapamycin in angiomyolipomas in patients with tuberous sclerosis. Period: January 2008-December 2011. Expedient: EC07/90025.

Awards

Janssen-Cilag Best Poster Award 2010 at the 40th Annual Conference of the Spanish Nephrology Society: Second prize for C. Facundo, L. Guirado, J.M. Díaz, N. Garra, C. Canal, A. Breda, R. Solà, J. Ballarín. Older living kidney donor.



\*TIF: 97.187 \*\*MIF: 4.627

## INDEXED PUBLICATIONS

- 01** Guirado L., Rabella N., Diaz J.M., Facundo C., Maderuelo A., Margall N., Silva I., Garcia-Maset R., Calabia J., Gimenez I., Garra N., Sola R., Ballarin J.A. Prophylactic and pre-emptive therapy for cytomegalovirus infection in kidney transplant patients using oral valganciclovir. *Nefrologia*; 28(3):293-300  
**IF: 0.738**
- 02** Stoyanova E., Sandoval S.B., Zuniga L.A., El-Yamani N., Coll E., Pastor S., Reyes J., Andres E., Ballarin J., Xamena N., Marcos R. Oxidative DNA damage in chronic renal failure patients. *Nephrol. Dial. Transplant.*; 25(3):879-885  
**IF: 3.564**
- 03** Bermudez R.M., Bover Sanjuan J., Oliver Samper A., Ballarin Castan J.A., Gracia Garcia S. Assessment of the new CKD-EPI equation to estimate the glomerular filtration rate. *Nefrologia*; 30(2):185-194  
**IF: 0.738**
- 04** Fernandez-Llama P., Khositseth S., Gonzales P.A., Star R.A., Pisitkun T., Knepper M.A. Tamm-Horsfall protein and urinary exosome isolation. *Kidney Int.*; 77(8):736-742  
**IF: 6.105**
- 05** Torregrosa J.-V., Fuster D., Gentil M.-A., Marcen R., Guirado L., Zarraga S., Bravo J., Burgos D., Monegal A., Muxi A., Garcia S. Open-label trial: Effect of weekly riseredonate immediately after transplantation in kidney recipients. *Transplantation*; 89(12):1476-1481  
**IF: 3.676**
- 06** Mengual L., Bursset M., Ribal M.J., Ars E., Marin-Aguilera M., Fernandez M., Ingelmo-Torres M., Villavicencio H., Alcaraz A. Gene expression signature in urine for diagnosing and assessing aggressiveness of bladder urothelial carcinoma. *Clin. Cancer Res.*; 16(9):2624-2633  
**IF: 7.338**
- 07** Vujic M., Heyer C.M., Ars E., Hopp K., Markoff A., Orndal C., Rudenhed B., Nasr S.H., Torres V.E., Torra R., Bogdanova N., Harris P.C. Incompletely penetrant PKD1 alleles mimic the renal manifestations of ARPKD. *J. Am. Soc. Nephrol.*; 21(7):1097-1102  
**IF: 8.288**
- 08** Sola R., Guirado L., Lopez-Navidad A., Bonfill X., Diaz J.-M., Puig T., Facundo C. Is it appropriate to implant kidneys from elderly donors in young recipients? *Transplantation*; 90(3):286-291  
**IF: 3.676**
- 09** Serra V.M., Barba M.A., Torra R., Perez De Isla L., Lopez M., Calli A., Feltes G., Torras J., Valverde V., Zamorano J.L. Role of cardiac magnetic resonance in cardiac involvement of Fabry disease. *Med. Clin.*; 135(7):300-305  
**IF: 1.413**
- 10** Liu M., Shi S., Senthilnathan S., Yu J., Wu E., Bergmann C., Zerres K., Bogdanova N., Coto E., Deltas C., Pierides A., Demetriou K., Devuyt O., Gitomer B., Laakso M., Lumiaho A., Lamnissou K., Magistroni R., Parfrey P., Breuning M., Peters D.J.M., Torra R., Winearls C.G., Torres V.E., Harris P.C., Paterson A.D., Pei Y. Genetic variation of DKK3 may modify renal disease severity in ADPKD. *J. Am. Soc. Nephrol.*; 21(9):1510-1520  
**IF: 8.288**
- 11** Morote J., Del Amo J., Borque A., Ars E., Hernandez C., Herranz F., Arzuza A., Llarena R., Planas J., Viso M.J., Palou J., Ravents C.X., Tejedor D., Artieda M., Simn L., Martinez A., Rioja L.A. Improved prediction of biochemical recurrence after radical prostatectomy by genetic polymorphisms. *J. Urol.*; 184(2):506-511  
**IF: 3.862**
- 12** Mischak H., Allmaier G., Apweiler R., Attwood T., Baumann M., Benigni A., Bennett S.E., Bischoff R., Bongcam-Rudloff E., Capasso G., Coon J.J., D'Haese P., Dominiczak A.F., Dakna M., Dihazi H., Ehrlich J.H., Fernandez-Llama P., Fliser D., Frokiaer J., Garin J., Girolami M., Hancock W.S., Haubitz M., Hochstrasser D., Holman R.R., Ioannidis J.P.A., Jankowski J., Julian B.A., Klein J.B., Kolch W., Luider T., Massy Z., Mattes W.B., Molina F., Monsarrat B., Novak J., Peter K., Rossing P., Sanchez-Carbayo M., Schanstra J.P., Semmes O.J., Spasovski G., Theodorescu D., Thongboonkerd V., Vanholder R., Veenstra T.D., Weissinger E., Yamamoto T., Vlahou A. Recommendations for biomarker identification and qualification in clinical proteomics. *Sci. Transl. Med.*; 2(46)  
**IF: 3.511**
- 13** Sans Atxer L., Roca-Cusachs A., Torra R., Calero F., Arias P., Ballarin J., Fernandez-Llama P. Relationship between kidney size and blood pressure profile in patients with autosomal dominant polycystic kidney disease without renal failure. *Nefrologia*; 30(5):567-572  
**IF: 0.738**
- 14** Sandoval S.B., Stoyanova E., Coll E., Pastor S., Reyes J., Andres E., Ballarin J., Xamena N., Marcos R. Genetic damage in chronic renal failure patients is associated with the glomerular filtration rate index. *Mutagenesis*; 25(6):603-608  
**IF: 3.983**
- 15** Sanchez-Fructuoso A., Guirado L., Ruiz J.C., Torregrosa V., Gonzalez E., Suarez M.L., Gallego R. Anemia control in kidney transplant patients treated with methoxy polyethylene glycol-epoetin beta (Mircera): The anemiatrans group. *Transplant. Proc.*; 42(8):2931-2934  
**IF: 0.993**
- 16** Guirado L. Incompatible living-donors in kidney. *Nefrologia*; 30(SUPPL. 2):94-99  
**IF: 0.738**
- 17** Esteva-Font C., Wang X., Ars E., Guillen-Gomez E., Sans L., Gonzalez Saavedra I., Torres F., Torra R., Masilamani S., Ballarin J.A., Fernandez-Llama P. Are sodium transporters in urinary exosomes reliable markers of tubular sodium reabsorption in hypertensive patients? *Nephron Physiol.*; 114(3):p25-p34  
**IF: 2.465**
- 18** Catala V., Marti T., Diaz J.M., Cordeiro E., Samaniego J., Rosales A., de la Torre P. Use of multidetector CT in presurgical evaluation of potential kidney transplant recipients. *Radiographics*; 30(2):517-531  
**IF: 2.76**
- 19** Collado S., Coll E., Deulofeu R., Guerrero L., Pons M., Cruzado J.M., de la Torre B., Vera M., Azqueta M., Nicolau C., Cases A. Prevalence of cardiovascular disease in uraemia and relevance of cardiovascular risk factors. *Nefrologia*; 30(3):342-348  
**IF: 0.738**
- 20** Hiemstra T.F., Walsh M., Mahr A., Savage C.O., De Groot K., Harper L., Hauser T., Neumann I., Tesar V., Wissing K.-M., Pagnoux C., Schmitt W., Jayne D.R.W., European Vasculitis Study Group (EUVAS) (col. Ballarin J.) Mycophenolate mofetil vs azathioprine for remission maintenance in antineutrophil cytoplasmic antibody-associated vasculitis: A randomized controlled trial. *JAMA-J. Am. Med. Assoc.*; 304(21):2381-2388  
**IF: 30.011**
- 21** Torra R., Oliveira J.P., Ortiz A. UGA hopping: A sport for nephrologists too? *Nephrol. Dial. Transplant.*; 25(8):2391-2395  
**IF: 3.564**





**AREA T1**

# *Epidemiology, Public Health and Healthcare Services*

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# Clinical Epidemiology and Healthcare Services

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Main lines of research

- Clinical epidemiology.
- Systematic reviews.
- Clinical practice guidelines.
- Health service evaluations.
- Clinical trials (phase 3/4).
- Methodological research.
- **Areas of interest:**
- Evidence-based medicine.
- Cancer.
- Perioperative medicine.
- Cardiovascular medicine.
- Public health.
- Lower back pain.
- Appropriateness.

Challenges

- Become a reference group in Spain and in Latin America regarding the preparation of systematic reviews on the effects of healthcare interventions, enhancing the group's capacity to provide technical and methodological support and increasing its scientific production in the framework of the Iberoamerican Cochrane Network. The group is currently participating directly in the preparation of some 30 systematic reviews and is providing support to other reviews inspired by the Iberoamerican Cochrane Network, expected to be published by the Cochrane Library (with an impact factor of 5.18) in the next 2 years.
- Promote greater use of scientific evidence and evidence-based medicine tools in clinical and healthcare decision making by means of stable agreements with governmental, academic and scientific entities and institutions, thereby ensuring the ongoing development and dissemination of these tools and the implementation of training in their use. Apart from the activities mentioned, the group is currently preparing a new monthly electronic newsletter, commissioned by the Spanish Ministry of Health, called *i-Salud* addressed at patients and users of the national healthcare system. It is also developing 2 new clinical practice guidelines (menopause symptoms and community-acquired pneumonia) and a number of training activities regarding evidence-based medicine for 8 entities located around Spain.
- Become a reference group for independent applied clinical research that fosters relevant and scientifically sound studies aimed at meeting the real needs of the national healthcare system, whether on its own initiative or through networked relationships with similar groups (CIBERESP, Cochrane Collaboration, Latin-American Clinical Epidemiology Network and other academic groups such as McMaster University in Canada). Apart from research studies already underway, the group is currently setting up clinical and epidemiological studies (phase 3/4 trials with non-commercial interests, research into healthcare services and results and studies of research methodologies) and apply for additional public funding for new projects aimed at consolidating these research lines.



## Active grants

- Alonso, P. Vascular events in patients undergoing non-cardiac surgery: prospective cohort study (VISION). Period: March 2009-March 2012. Expedient: 08/2330.
- Alonso, P. Clinical trial evaluating different treatment strategies with antibiotics in acute uncomplicated respiratory infections in primary care (PDA study). Period: January 2009-December 2011. Expedient: EC08/00095.
- Alonso, P. Understanding, needs and attitudes of doctors to clinical practice guidelines and classification systems for evidence and grades of recommendation (ETES). Period: January 2009-June 2011. Expedient: PI08/90647.
- Alonso, P. Perceptions, attitudes and knowledge regarding evidence-based medicine in primary care. Period: January 2007-March 2010. PI06/0691.
- Alonso, P. SNS Miguel Servet contract 2009. Period: February 2010-January 2013. Expedient: CP09/00137.
- Bonfill, X. Grants to support research groups in Catalonia. Clinical Epidemiology and Health Services Group. Period: September 2009-December 2013. Expedient: 2009SGR 786.
- Bonfill, X. Multicentre coordinated study of care processes and the results observed for a cohort of patients with urological cancer (bladder and prostate). Period: January 2010-December 2012. Expedient: PI09/1204.
- Martínez, M. Randomized, multicentre, parallel, single blind clinical trial, masked for the unevaluated treatment, to evaluate the effectiveness of platelet-rich plasma (PRP) treatment of autologous muscle tears in tennis leg. Period: January 2009-December 2011. Expedient: PI08/0724.
- Martínez, M. Prevention of postoperative bleeding: randomized, parallel, single-centre clinical trial with four treatment arms to evaluate the effectiveness of fibrin glue and tranexamic acid versus standard haemostasis treatment in patients undergoing treatment for total knee arthroplasty. Period: January 2010-December 2011. Expedient: TRA-081.
- Urrutia, G. Clinical trial of metoprolol versus placebo in patients about to undergo non-cardiac surgery and at moderate or high risk of experiencing perioperative cardiac events (POISE study). Period: January 2008-December 2010. Expedient: PI07/1071.
- Urrutia, G. Factorial clinical trial of clonidine and aspirin in patients about to undergo non-cardiac surgery and at moderate or high risk of experiencing perioperative cardiac events. Period: January 2010-December 2011. Expedient: TRA-061.
- Urrutia, G. Systematic review of active intraoperative warming systems aimed at preventing postoperative complications (ETES). Period: January 2009-June 2010. Expedient: PI08/90403.

\*TIF: 102.632 \*\*MIF: 4.665

## Scientific production

## INDEXED PUBLICATIONS

- 01 Martínez-Pino I., Puig T., Quintana M.J., Sola J., Bonfill X. Prevalence of use of hormone replacement therapy in women participating in a breast cancer screening program. *Med. Clin.*; 134(10):439-442  
IF: 1.413
- 02 Urrutia G., Bonfill X. Analysis of Spanish research about neck and back complaints. *Med. Clin.*; 135(5):215-221  
IF: 1.413
- 03 Sola R., Guirado L., Lopez-Navidad A., Bonfill X., Diaz J.-M., Puig T., Facundo C. Is it appropriate to implant kidneys from elderly donors in young recipients? *Transplantation*; 90(3):286-291  
IF: 3.676
- 04 Bassler D., Briel M., Montori V.M., Lane M., Glasziou P., Zhou Q., Heels-Ansdell D., Walter S.D., Guyatt G.H., Flynn D.N., Elamin M.B., Murad M.H., Abu Elnour N.O., Lampropulos J.F., Sood A., Mullan R.J., Erwin P.J., Bankhead C.R., Perera R., Culebro C.R., You J.J., Mulla S.M., Kaur J., Nerenberg K.A., Schunemann H., Cook D.J., Lutz K., Ribic C.M., Vale N., Malaga G., Akl E.A., Ferreira-Gonzalez I., Alonso-Coello P., Urrutia G., Kunz R., Bucher H.C., Nordmann A.J., Raatz H., Da Silva S.A., Tuche F., Strahm B., Djulbegovic B., Adhikari N.K.J., Mills E.J., Gwadrý-Sridhar F., Kirpalani H., Soares H.P., Karanicolas P.J., Burns K.E.A., Vandvik P.O., Coto-Yglesias F., Chripim P.P.M., Ramsay T. Stopping randomized trials early for benefit and estimation of treatment effects: Systematic review and meta-regression analysis. *JAMA-J. Am. Med. Assoc.*; 303(12):1180-1187  
IF: 30.011
- 05 Gallardo C.R., Rigau D., Irfan A., Ferrer A., Cayla J.A., Bonfill X., Alonso-Coelho P. Quality of tuberculosis guidelines: Urgent need for improvement. *Int. J. Tuberc. Lung Dis.*; 14(8):1045-1051  
IF: 2.557
- 06 Chilet-Rosell E., Llaguno M.M., Cantero M.T.R., Alonso-Coello P. Hormone Replacement therapy advertising: Sense and nonsense on the web pages of the best-selling pharmaceuticals in Spain. *BMC Public Health*; 10  
IF: 2.364
- 07 Kotzeva A., Sola I., Carrasco J.M., Del Campo P.D., Gracia F.J., Calderan E., De Gaminde I., Estrada M.D., Martínez F., Orrego C., Rotaeche R., Salcedo F., Velzquez P., Alonso-Coello P. Perceptions and attitudes of clinicians in Spain toward clinical practice guidelines and grading systems: A protocol for a qualitative study and a national survey. *BMC Health Serv. Res.*; 10  
IF: 1.721
- 08 Alonso-Coello P., Irfan A., Sola I., Gich I., Delgado-Noguera M., Rigau D., Tort S., Bonfill X., Burgers J., Schunemann H. The quality of clinical practice guidelines over the last two decades: A systematic review of guideline appraisal studies. *Qual. Saf. Health Care*; 19(6)  
IF: 2.856



## AREA T1

Epidemiology, Public Health and Healthcare Services

- 09 Barajas-Nava L., Sola I., Delgado-Noguera M., Gich I., Villagran C.O., Bonfill X., Alonso-Coello P. Quality assessment of clinical practice guidelines in perioperative care: A systematic appraisal. *Qual. Saf. Health Care*; 19(6)  
IF: 2.856
- 10 Bonfill X., Schapira P. Importance of evidence-based medicine to clinical practice. *Colomb. Medica*; 41(2):186-193  
IF: 0.113
- 11 Reveiz L., Chan A.-W., Krleza-Jeric K., Granados C.E., Pinart M., Etxeandia I., Rada D., Martinez M., Bonfill X., Cardona A.F. Reporting of methodologic information on trial registries for quality assessment: A study of trial records retrieved from the WHO search portal. *PLoS One*; 5(8)  
IF: 4.411
- 12 Garcia-Alamino J.M., Ward A.M., Alonso-Coello P., Perera R., Bankhead C., Fitzmaurice D., Heneghan C.J. Self-monitoring and self-management of oral anticoagulation.. *Cochrane Database Syst Rev.*; 4  
IF: 6.186
- 13 Buruiana F.E., Sola I., Alonso-Coello P. Recombinant human interleukin 10 for induction of remission in Crohn's disease.. *Cochrane Database Syst Rev.*; 11  
IF: 6.186
- 14 Delgado-Noguera M.F., Calvache J.A., Bonfill X. Supplementation with long chain polyunsaturated fatty acids (LCPUFA) to breastfeeding mothers for improving child growth and development.. *Cochrane Database Syst Rev.*; 12  
IF: 6.186
- 15 Donado E., Izquierdo I., Perez I., Garcia O., Antonijoan R.Ma., Gich I., Solans A., Pena J., Morganroth J., Barbanoj M.J. No cardiac effects of therapeutic and suprathreshold doses of rupatadine: Results from a 'thorough QT/QTc study' performed according to ICH guidelines. *Br. J. Clin. Pharmacol.*; 69(4):401-410  
IF: 3.063
- 16 Garcia-Patterson A., Gich I., Amini S.B., Catalano P.M., De Leiva A., Corcoy R. Insulin requirements throughout pregnancy in women with type 1 diabetes mellitus: Three changes of direction. *Diabetologia*; 53(3):446-451  
IF: 6.973
- 17 Verd S., Nadal-Amat J., Gich I., Leshem M. Salt preference of nursing mothers is associated with earlier cessation of exclusive breastfeeding. *Appetite*; 54(1):233-236  
IF: 2.433
- 18 O'Rourke N., Roque I Figuls M., Farre Bernado N., Macbeth F. Concurrent chemoradiotherapy in non-small cell lung cancer.. *Cochrane Database Syst Rev.*; 6  
IF: 6.186
- 19 Almirall J., Bolibar I., Serra-Prat M., Palomera E., Roig J., Hospital I., Carandelle E., Agusti M., Ayuso P., Estela A., Torres A., De Salas J.M., Costa J., Tristany M., Grau M.J., Sancho S., Miguel E., Fradera M., Ochoa I., Castany M.J., Quilez A., Marina V., Subias P., Jimeno B., Bradnovich, Rodriguez M., Ramon E., Gardella A., Gines C., Montero J.C., Flores P., Serra P., Torrellas E., Serrano C., Pubill M., Gost J., Buxade I., Mussoll J., Mestres X., Armada A., Mallafre J., Roger M., Gros M.T., Les N., Joanola J., Domenech J., Bundo M., Trilla M., Massons J., Montero J., Zurilla E., Alegre M., Papiol M., Marti O., Catala M., Martinez M.A., Casanovas A., Beisani I., Tria C., Diaz E., Toran P., Aizpurua M.M., Lozano G., Casals J., Sorribes J., Torrellas D., Casas A., Bernad J., De Montoliu A., Gaya J., Valles R., Vazquez A., Peiro R., Areste G., Mengual G.N., Vines M.C., Almerich E., Lopez M.A., Bel J., Gosalves A., Macip S., Carrillo E., Paulo P., Pol M., Sala J., Mir P., Anglada J.L.L., Salabarnada J., Sanz E., Gorgas F., Ribas A., Fau E., Pellicer I., Morales S., Burdoy E., Bartolome M., Corona E., Mateu L., Paret M., Verde Y., Borrás A., Aznar F., Riera F., Vazquez A., Gil P., Colom I., Calvet E., Nicolas J., Ruiz J., Carrera P., Legazpi I., Planellas F., Beltran A., Planas T., Rovira J., De Ciurana M., Xargay C., Cortes R.B., Paredes J., Olive J.G., Montoya P., El Hosn-Makarem J.A., Pelaez F., Ubieto A., Burcet F.X., Alcantarilla D., De Ribot J., Gorgo M.R., Bas R.A., Rosa M.B., Castells J., Castillo J.A., Benet J.M., Caballero J.C., Llach J., Sanglas J., Moral V., Navarro M., Torrent J.C., Rodriguez D., Rius X., Solanella J., Fallada A., Cardona J.I., Ferrer J., Josa A., Solis M.J., Guerri F., Boj J., Ramon C., Caballol R., Navarro L., Masque J., Murillo M.J., Llovet M.D., Guinea I., Juarez M.M., Alvarez M., Blade J., Sanchez Oro I., Martin F., Cabre J.J., Frigola J., Requena J., Fava E., Pinazo M.J., Ros M., Borrás S., Sala J., Nolla C., Bitria J., Araujo O., Alonso M., Glaria T., Chacon A., Satue E., Collado A., Llor Ll., Montanyes D., Garcia G., Arasa M.J., Yoldi A., Viloria I., Vallespi F., Clua J.L.L., Basart J.M., Ciurana E., Monclus J.F., Casanovas A., Vinas L., Checa E., Marin J., Santigosa J., Basora T., Gallego F., Martin E., Gil P., Rosello M., Arayo I., Palacios F., Donado A., Marimon J., Costa B., Gutierrez C., Molto E., Isach A., Izzeddin N., Campani M., Ferre J., Fernandez A., Jove J., Vilalta J., Ribera E., Fernandez M., Ochoa O., Vila A., Pujol J., Navarro M.A., Campillos C., Juarez A., Perez J., Casado I., Paredes E., Rodriguez J., Vazquez A., Sola Y., Berdie J., Andres M.J., Barragan B., Torras A., Madrid M., Gonzalez S., Fuentes A., Iniguez M., Guasch J., Sanchez F., Pascual J., Castello A., Gomez Ll., Mateu C., Arranz J., Fe A., Puig B., Gutierrez M., Morant Ll., Llull M., Estelrich J., Quintana L., Llabres C., Sureda M.M., Cuevas L., Munoz Y., Llobera J., Marin P., Garcia C., Moreno P., Coll M., Palma C., Ribera C., Aldosa J., Alonso C., Berges A., Burgues J., Burgues Ll., Busquets J., Casal D., Cerdan N., Crespo X., Duat R., Escoda J., Fiter M., Font A., Fraysse M., Fuentes S., Garcia-Nunez R., Lopez-Pinacho T., Masardo M., Martinez-Illescas J., Morisset P., Pallares M., Perez-Serra R., Pla A., Pons E., Ruiz A., Rodriguez-Picart J.C., Sanchez-Claver J., Sylvestre E., Tolosa R., Touceda J.A., Varela J.R., Vidal J.C., Amate M., Bara C., Becerra O., Bellmunt R., Boneu F., Bozal J., Burillo C., Diaz A., Gonzalez N., Granyena A., Gutierrez M., Infante C., Leal M., Linares M., Magallon J., Marques J., Marti M.J., Miralles J.C., Mora C., Palacin J.M., Pons J., Prats G., Pujal G., Sanjuan M., Segarra X., Solis J., Trelles H., De Celis G., Latorre X., Sarroca O., Briceno H. Inhaled drugs as risk factors for community-acquired pneumonia. *Eur. Resp. J.*; 36(5):1080-1087  
IF: 5.922
- 20 Moral A., Bolibar I., Seguranyes G., Ustrell J.M., Sebastia G., Martinez-Barba C., Rios J. Mechanics of sucking: Comparison between bottle feeding and breastfeeding. *BMC Pediatr.*; 10  
IF: 1.904
- 21 Domingo L., Sala M., Servitja S., Corominas J.M., Ferrer F., Martinez J., Macla F., Quintana M.J.,



## Scientific production

Albanell J., Castells X. Phenotypic characterization and risk factors for interval breast cancers in a population-based breast cancer screening program in Barcelona, Spain. *Cancer Causes Control*; 21(8):1155-1164

IF: 2.789

- 22 Urrtia G., Bonfill X. PRISMA declaration: A proposal to improve the publication of systematic reviews and meta-analyses. *Med. Clin.*; 135(11):507-511

IF: 1.413

\* Total Impact Factor  
\*\* Mean Impact Factor



# Evaluation of Public Health Policies and Programmes

**TEAM**



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Joan Ramon Villalbí ASPB

**Administrative staff**

Gabriel León CIBERESP

**Main lines of research**

- Prevention and control of passive smoking.
- Studies evaluating the impact of lifestyle interventions.
- Evaluation of public health programmes and services, including management, organization, results and impact.
- Evaluation of the effectiveness and impact of policies and programmes.
- 2009 MILESTONES: Main challenges that materialized in 2009.

**Active grants**

- Ariza, C. Design and evaluation of the effectiveness of an intervention to prevent childhood obesity in school children. Period: January 2010-December 2012. Expedient: PI09/02259.
- Ariza, C. Evaluation of the effectiveness of early treatment intervention for cigarette and cannabis smoking cessation in young people. Period: November 2009-October 2012. Expedient: 2009I046.
- López, M. Measurement of exposure to carcinogens and other toxic compounds in environmental cigarette smoke in a cohort of hospitality workers. Period: January 2008-December 2010. Expedient: PI07/1292.
- Nebot, M. Evaluation of the impact of preventive recommendations regarding influenza A(H1N1)v in the population at risk and the adoption of non-pharmacological measures in the general population, school community and risk group. Period: September 2009-December 2011. Expedient: GR09/0036.
- Nebot, M. Evaluation of the impact of smoke-free policies in Member States on exposure to second-hand smoke and tobacco consumption (IMPASHS). Period: May 2008-April 2011. Expedient: 2007313.
- Nebot, N. Research group for evaluation of public health policies and programmes. Period: September 2009-December 2013. Expedient: 2009 SGR 1345.
- Nebot, M. Improving Knowledge and Communication for Decision Making on Air Pollution and Health in Europe-APHEKOM. Period: June 2008-March 2011. Expedient: 2007105.
- Nebot, M. Public Health Policies. Training Romanian staff at the regional level to develop Public Health Policies (PHPRO). Period: February 2010-January 2012.
- Nebot, M. Working with Communities to Reduce Health Inequalities: Protecting Children any Young People from Tobacco. Period: July 2007-September 2010. Expedient: 2007303.



## 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 the evaluation of health protection interventions.
- Develop a theoretical corpus of concepts, principles, methods and examples that contribute to filling the gap in under- and post-graduate teaching regarding the design and evaluation of risk prevention and health promotion interventions.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Perez A., Nebot M., Macla M., Panades R. An outbreak of 400 cases of lipoatrophia semicircularis in Barcelona: Effectiveness of control measures. *J. Occup. Environ. Med.*; 52(7):751-757  
**IF: 1.98**
- 02** Perez A., Ariza C., Sanchez-Martinez F., Nebot M. Cannabis consumption initiation among adolescents: A longitudinal study. *Addict. Behav.*; 35(2):129-134  
**IF: 2.133**
- 03** Martinez-Sanchez J.M., Fenandez E., Fu M., Perez-Rios M., Schiaffino A., Lopez M.J., Alonso B., Salto E., Nebot M., Borrás J.M. Changes in hospitality workers' expectations and attitudes after the implementation of the Spanish smoking law. *Gac. Sanit.*; 24(3):241-246  
**IF: 1.114**
- 04** Villalbi J.R., Cleries M., Bouis S., Peracho V., Duran J., Casas C. Decline in hospitalisations due to dog bite injuries in Catalonia, 1997-2008. An effect of government regulation? *Inj. Prev.*; 16(6):408-410  
**IF: 1.504**
- 05** Dominguez A., Izquierdo C., Salleras L., Ruiz L., Sousa D., Bayas J.-M., Nebot M., Varona W., Celorrio J.-M., Carratala J. Effectiveness of the pneumococcal polysaccharide vaccine in preventing pneumonia in the elderly. *Eur. Resp. J.*; 36(3):608-614  
**IF: 5.922**
- 06** Pinilla J., Garcia-Altes A. Evaluation of public policies. *SESPAS Report 2010. Gac. Sanit.*; 24(SUPPL. 1):114-119  
**IF: 1.114**
- 07** Villalbi J.R., Casas C., Bartoll X., Artazcoz L., Ballestin M., Borrell C., Camprubi E., Duran J., Garcia R., Rodriguez P., Salamero M. Indicators for the management of public health services. *Gac. Sanit.*; 24(5):378-384  
**IF: 1.114**
- 08** Izquierdo C., Oviedo M., Ruiz L., Sintes X., Vera I., Nebot M., Bayas J.-M., Carratal J., Varona W., Sousa D., Celorrio J.-M., Salleras L., Dominguez A. Influence of socioeconomic status on community-acquired pneumonia outcomes in elderly patients requiring hospitalization: A multicenter observational study. *BMC Public Health*; 10  
**IF: 2.364**
- 09** Rodellar S., Fontcuberta M., Arques J.F., Calderon J., Ribas Barba L., Serra-Majem L. Mercury and methylmercury intake estimation due to seafood products for the Catalanian population (Spain). *Food Addit. Contam. Part A-Chem.*; 27(1):29-35  
**IF: 2.23**
- 10** Cervera M.I., Medina C., Portoles T., Pitarch E., Beltran J., Serrahima E., Pineda L., Munoz G., Centrich F., Hernandez F. Multi-residue determination of 130 multiclass pesticides in fruits and vegetables by gas chromatography coupled to triple quadrupole tandem mass spectrometry. *Anal. Bioanal. Chem.*; 397(7):2873-2891  
**IF: 3.841**
- 11** Villalbi J.R. Regulation of smoking reduces the prevalence of smokers and tobacco consumption. *Aten. Prim.*; 42(6):314-315  
**IF: 0.619**
- 12** Sureda X., Fu M., Jose Lopez M., Martinez-Sanchez J.M., Carabasa E., Salto E., Martinez C., Nebot M., Fernandez E. Second-hand smoke in hospitals in Catalonia (2009): A cross-sectional study measuring PM2.5 and vapor-phase nicotine. *Environ. Res.*; 110(8):750-755  
**IF: 3.5**
- 13** Villalbi J.R., Baranda L., Lopez M.J., Nebot M. Smoking in the hospitality sector: an observational study in Barcelona (Spain), 2008. *Gac. Sanit.*; 24(1):72-74  
**IF: 1.114**
- 14** Villalbi J.R., Carreras F., Martin-Moreno J.M., Aguado I.H. The public health services port-folio in the national health system: The contribution of the central government of Spain. *Rev. Esp. Salud Publica*; 84(3):247-254  
**IF: 0.774**
- 15** Lopez M.J. The Spanish smoking law: A model to be followed? *Int. J. Public Health*; 55(3):231-232  
**IF: 2.241**
- 16** Dalmau-Bueno A., Garcia-Altes A., Mari-Dell'Olmo M., Perez K., Espelt A., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in cirrhosis mortality in an urban area of Southern Europe: A multilevel approach. *J. Epidemiol. Community Health*; 64(8):720-727  
**IF: 2.983**
- 17** Dalmau-Bueno A., Garcia-Altes A., Mari-Dell'Olmo M., Perez K., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in mortality over a twenty-two-year period in the city of Barcelona (Spain). *Gac. Sanit.*; 24(1):20-27  
**IF: 1.114**

\*TIF: 35.661 \*\*MIF: 2.097

\* Total Impact Factor  
\*\*Mean Impact Factor



# Transport and Health: Injuries and Mobility

TEAM



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**Researchers**

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Main lines of research

- Study of inequalities in road traffic injuries by sex, social class and area of residence: measuring unequal exposure to the risk of road traffic injuries.
- Evaluation of road safety strategies in Spain: inequalities according to sex, age groups and geographical area.
- Epidemiology of spinal cord injuries and traumatic brain injuries in Spain 2000-2009.

**Participation in international projects:**

- Probability of admission.
- Road Safety Data Collection, Transfer and Analysis (DACOTA).
- European Safer Urban Motorcycling (ESUM).

- Social and spatial inequalities in terms of traffic safety.

**Research projects in the planning and design phase:**

- Social inequalities in mobility in Spain.
- Indicators of mobility and exposure to the risk of traffic injuries.

Challenges

- Study of the types of injuries and their severity according to the characteristics of the collision and the vehicles involved; fostering this kind of study in urban settings.
- Evaluation of road safety policies and interventions.
- Development of exposure denominators for the calculation of indicators.
- Study of motorized and non-motorized mobility and its impact on health.

Active grants

- Pérez, C. Estimates of traffic accidents deaths at 30 days and projections on the number of dead and injured. Period: 2009-2010. Expedient: 0100DGT17648.
- Pérez, C. Working Group on Police and Hospital Record Linkage. Period: 2009-2010.
- Pérez, C. Working Group on Pedestrian Safety, Urban Space and Health. Period: 2008-2010.
- Pérez, C. Road Safety Data Collection, Transfer and Analysis (DACOTA). Expedient: 233659.
- Pérez, C. Mobility practices and risk of road accidents: social, cultural and regional inequalities in France and Spain. Period: 2010-2012.
- Pérez, C. Probability of Admission: Empirical validation of NZIPS serious non-fatal injury indicators. Period: 2008-2010.





## INDEXED PUBLICATIONS

**01** Novoa A.M., Perez K., Santamarina-Rubio E., Mari-Dell'Olmo M., Ferrando J., Peiro R., Tobias A., Zori P., Borrell C. Impact of the penalty points system on road traffic injuries in Spain: A time-series study. *Am. J. Public Health*; 100(11):2220-2227

IF: 3.85

**02** Rocha K.B., Perez K., Rodriguez-Sanz M., Borrell C., Obiols J.E. Prevalence of mental health problems and their association with socioeconomic, work and health variables: Findings from the Spain National Health Survey. *Psicothema*; 22(3):389-395

IF: 0.939

**03** Dalmau-Bueno A., Garcia-Altes A., Mari-Dell'Olmo M., Perez K., Espelt A., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in cirrhosis mortality in an urban area of Southern Europe: A multilevel approach. *J. Epidemiol. Community Health*; 64(8):720-727

IF: 2.983

**04** Morrison J., Borrell C., Mari-Dell'Olmo M., Ruiz Cantero M.T., Benach J., Fernandez E., Pasarin M.I., Perez G., Cascant L., Alvarez-Dardet C., Artazcoz L., Perez K., Garcia-Calvente M.D.M., Ruiz I. Gender inequalities in the Spanish Public Health and Health Administration Society (2000-2009). *Gac. Sanit.*; 24(4):334-338

IF: 1.114

**05** Martin-Cantera C., Prieto-Alhambra D., Roig L., Valiente S., Perez K., Garcia-Ortiz L., Bel J., Marques F., Mundet X., Bonafont X., Birules M., Soldevila N., Briones E. Risk levels for suffering a traffic injury in primary health care. The LESIONAT project. *BMC Public Health*; 10

IF: 2.364

**06** Borrell C., Artazcoz L., Gil-Gonzalez D., Perez G., Rohlf s I., Perez K. Perceived sexism as a health determinant in Spain. *J. Womens Health*; 19(4):741-750

IF: 1.454

**07** Broughton J., Keigan M., Yannis G., Evgenikos P., Chaziris A., Papadimitriou E., Bos N.M., Hoegl inger S., Perez K., Amoros E., Hollo P., Tecl J.

Estimation of the real number of road casualties in Europe. *Saf. Sci.*; 48(3):365-371

IF: 1.637

**08** Novoa A.M., Perez K., Santamarina-Rubio E., Mari-Dell'Olmo M., Tobias A. Effectiveness of speed enforcement through fixed speed cameras: A time series study. *Inj. Prev.*; 16(1):12-16

IF: 1.504

**09** Borrell C., Muntaner C., Gil-Gonzalez D., Artazcoz L., Rodriguez-Sanz M., Rohlf s I., Perez K., Garcia-Calvente M., Villegas R., Alvarez-Dardet C. Perceived discrimination and health by gender, social class, and country of birth in a Southern European country. *Prev. Med.*; 50(40575):86-92

IF: 3.299

**10** Dalmau-Bueno A., Garcia-Altes A., Mari-Dell'Olmo M., Perez K., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in mortality over a twenty-two-year period in the city of Barcelona (Spain). *Gac. Sanit.* 24(1):20-27

IF: 1.114

\*TIF: 20.258 \*\*MIF: 2.025

\* Total Impact Factor  
\*\* Mean Impact Factor



# Transmissible Diseases

TEAM



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Helena Pañella ASPB  
M. Teresa Rodrigo SEPAR  
Francisca Sánchez Hospital del Mar  
Hernán Vargas CIBERESP

Main lines of research

## Application of the new technologies to tuberculosis (TB) control:

- Significant international diffusion has been achieved. Google Analytics offers a highly effective system for analysing website visits that enables us to assess the kind of users interested in our portal. In 2007 there were 13,429 visitors, 21% from Latin America.
- The main objective of TB Research Unit (UITB) is to produce scientific knowledge of relevance on the control, diagnosis, treatment and prevention of TB. From the visits and discussion forum comments, it is clear that we continue to play a key role in Spain and in Latin America.

## Clinical trials for the prevention and treatment of tuberculosis:

- Our centre, which is the only such centre in Europe, is part of a network of international centres (in Canada, Brasil, 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 TB and tubercular infection. Preliminary results have recently been presented at the ICAAC and other important international conferences (such as that of the American Thoracic Society). The article with definitive study data is pending publication.

- The research line launched aims to fix the bases for shortening treatment times for tubercular infection and, by extension, ensure compliance and control over the disease.

## Community health workers' role in the control of communicable diseases:

- The experiment has been presented in TB and primary care conferences and workshops and in the Emerging Infectious Diseases and Ethnicity and Health journals (Rotterdam). The results of the comparative study were recently

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 a final review before publication.

- The inclusion of community health workers has led to important changes in TB programme teams and has led to the creation of new TB consensus protocols. The Institute of Health studies (IES) is developing, with sponsorship from the authorities, the first intercultural mediation course in the healthcare arena, in which we are participating as instructors and students. The concept of the community health worker has been included in the framework document of the 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

- Investigate the transmission of hepatitis B in autochthonous and immigrant populations.
- Evaluate HIV screening programmes in gay saunas.
- Improve detection and research into causes of hepatitis C.
- Study legionella and TB outbreaks.

## Active grants

- García, P. Rapid study of the characteristics of outbreaks of influenza A (H1N1)v. Factors associated with the index case and with preventive measures. Period: 2009-2011.
- Caylà, J. Study 26. Comparison of a pattern of 12 doses per week for 3 months of supervised treatment based on 900 mg RPT versus daily self-administration of 300 mg isoniazid (270 doses) for 9 months. Period: 2003 (opened).
- Caylà, J. Study 26A. Impact of chronic viral hepatitis in discontinuation of treatment for latent tuberculosis infection due to hepatotoxicity. Period: 2004 (opened).
- Caylà, J. Integrated programme of tuberculosis research of the Spanish Society of Pneumology and Thoracic Surgery (SEPAR). Period: 2006-2010.
- Caylà, J. Study 29. Evaluation of a rifampine regimen for the intensive treatment phase of pulmonary tuberculosis. Period: 2008-2010.
- Caylà, J. Evaluation of a test for determining interferon-gamma in the diagnosis of tuberculosis infection from a cohort study of individuals at risk for tuberculosis. Period: 2008-2011. Expedient: PI081711.
- Caylà, J. Hospitalization risk factors for influenza A (H1N1) 2009 and effectiveness of pharmacological interventions, hand hygiene, respiratory hygiene and other non-pharmacological preventive measures. Case-control study. Period: January 2010-April 2011. Expedient: GR09/0029.

\*TIF: 64.523 \*\*MIF: 3.584

## Scientific production

## INDEXED PUBLICATIONS

- 01** Romagosa X.P., Clasca A.V., Martínez Adell M.A., De Olalla P.G., Lopez Del Vallado J.M.J. Drug use in children resident in a small urban area. *Adicciones*; 22(4):331-338  
IF: 1.127
- 02** Borrell S., Espanol M., Orcau T., Tudu G., March F., Cayla J. A., Jansa J. M., Alcaide F., Martin-Casabona N., Salvado M., Martinez J. A., Vidal R., Sanchez F., Altet N., Rey E., Coll P., Gonzalez-Martin J. Tuberculosis transmission patterns among Spanish-born and foreign-born populations in the city of Barcelona. *Clin. Microbiol. Infect.*; 16(6):568-574  
IF: 4.784
- 03** Garcia De Olalla P., Cayla J.A. Editorial: Is it possible to reduce the delay in diagnosing HIV infection? *Enferm. Infec. Microbiol. Clin.*; 28(9):580-582  
IF: 1.656
- 04** Moreno A., Sanchez F., Nelson J., Miro J.M., Cayla J.A. On the way to shortening tuberculosis treatments: clinical trials of the Unitat d'Investigació en Tuberculosi de Barcelona supported by the Centers for Disease Control and Prevention. *Gac. Sanit.*; 24(2):171.e1-171.e6  
IF: 1.114
- 05** Hurtado I., Alastrue I., Garcia de Olalla P., Albiach D., Martin M., Perez-Hoyos S. Preventive intervention in venues for interaction used by men who have sex with men. *Gac. Sanit.*; 24(1):78-80  
IF: 1.114
- 06** Tobias A., de Olalla P.G., Linares C., Bleda M.J., Cayla J.A., Diaz J. Short-term effects of extreme hot summer temperatures on total daily mortality in Barcelona, Spain. *Int. J. Biometeorol.*; 54(2):115-117  
IF: 1.805
- 07** Gallardo C.R., Rigau D., Irfan A., Ferrer A., Cayla J.A., Bonfill X., Alonso-Coelho P. Quality of tuberculosis guidelines: Urgent need for improvement. *Int. J. Tuberc. Lung Dis.*; 14(8):1045-1051  
IF: 2.557
- 08** Dominguez A., Broner S., Torner N., Martinez A., Jansa J.M., Alvarez J., Barrabeig I., Cayla J., Godoy P., Minguell S., Camps N., Sala M.R. Utility of clinical-epidemiological profiles in outbreaks of foodborne disease, Catalonia, 2002 through 2006. *J. Food Prot.*; 73(1):125-131  
IF: 1.72
- 09** Nelson J.L., Moreno A., Orcau A., Altet N., Martinez-Roig A., Cayla J.A., Casals M., Millet J.P., Moraga-Llop F. Transmission of childhood tuberculosis: Risk factors associated with an unidentified index case and outbreak evolution in Barcelona (1987-2007). *Pediatr. Infect. Dis. J.*; 29(9):876-879  
IF: 3.064
- 10** Gil O., Diaz I., Vilaplana C., Tapia G., Diaz J., Fort M., Caceres N., Pinto S., Cayla J., Corner L., Domingo M., Cardona P.-J. Granuloma encapsulation is a key factor for containing tuberculosis infection in minipigs. *PLoS One*; 5(4)  
IF: 4.411
- 11** Dominguez A., Torner N., Castilla J., Batalla J., Godoy P., Guevara M., Carnicer C., Cayla J., Rius C., Jansa J.M. Mumps vaccine effectiveness in highly immunized populations. *Vaccine*; 28(20):3567-3570  
IF: 3.572
- 12** Barrabeig I., Rovira A., Garcia M., Oliva J.M., Vilamala A., Ferrer M.D., Sabria M., Dominguez A. Outbreak of Legionnaires' disease associated with a supermarket mist machine. *Epidemiol. Infect.*; 138(12):1823-1828  
IF: 2.257
- 13** Ray, M., Logan, R., Sterne, J.A.C., Hernandez-Diaz, S., Robins, J.M., Sabin, C., Bansil, L., van Sighem, A., de Wolf, F., Costagliola, D., Lanoy, E., Bucher, H.C., von Wyl, V., Esteve, A., Casabona, J., del Amo, J., Moreno, S., Justice, A., Gouler, J., Lodi, S.,



## AREA T1

Epidemiology, Public Health and Healthcare Services

- Phillips, A., Seng, R., Meyer, L., Perez-Hoyos, S., de Olalla, P.G., Herman, M.A. The effect of combined antiretroviral therapy on the overall mortality of HIV-infected individuals. *Aids*; 24(1):123-137  
**IF: 6.348**
- 14 Horna-Campos O.J., Bedoya-Lama A., Romero-Sandoval N.C., Martin-Mateo M. Risk of tuberculosis in public transport sector workers, Lima, Peru. *Int. J. Tuberc. Lung Dis.*; 14(6):714-719  
**IF: 2.557**
- 15 Nahid P., Bliven E.E., Kim E.Y., MacKenzie W.R., Stout J.E., Diem L., Johnson J.L., Gagneux S., Hopewell P.C., Kato-Maeda M., Tuberculosis Trials Consortium (col. Cayla J.A.). Influence of *M. tuberculosis* lineage variability within a clinical trial for pulmonary tuberculosis. *PLoS One*; 5(5)  
**IF: 4.411**
- 16 Orriols R., Isidro I., Abu-Shams K., Costa R., Boldu J., Rego G., Zock J.-P., Alberti C., Azofra J., Budinot T., Campa M.T., Castanon J., Castejon J., Cayla J., Clavera I., Cortes I., De Astorza A., Echechipia S., Del Busto B., Fernandez B., Fernandez L., Fernandez N., Gonzalez M.M., Lezaun M., Lopez F., Marin B., Michel De La Rosa F.J., Munoz X., Pascal I., Panades R., Perez De Las Casas M., Rodriguez-Bayarri M.J., Rubira N., Tabar A. Reported occupational respiratory diseases in three Spanish regions. *Am. J. Ind. Med.*; 53(9):922-930  
**IF: 1.75**
- 17 Tudo G., Rey E., Borrell S., Alcaide F., Codina G., Coll P., Martin-Casabona N., Montemayor M., Moure R., Orcau A., Salvado M., Vicente E., Gonzalez-Martin J. Characterization of mutations in streptomycin-resistant *Mycobacterium tuberculosis* clinical isolates in the area of Barcelona. *J. Antimicrob. Chemother.*; 65(11):2341-2346  
**IF: 4.659**
- 18 Wolbers M., Babiker A., Sabin C., Young J., Dorrucci M., Chene G., Mussini C., Porter K., Bucher H.C., CASCADE Collaboration Members (cols. de Olalla P.G., Cayla J.). Pre-treatment CD4 cell slope and progression to AIDS or death in HIV-infected patients initiating antiretroviral therapy - The CASCADE collaboration: A collaboration of 23 cohort studies. *PLoS Med.*; 7(2)  
**IF: 15.617**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Health Inequalities

TEAM



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		Rosa Puigpinós	ASPB	Patricia Altimira	ASPB

Main lines of research

- Health inequalities according to social class in Spain and worldwide have been analysed in depth.
- The main contributions of some of these studies lies in the exploitation of information at the census section level as the maximum disaggregation unit, and also at higher geographic aggregation levels, such as the neighbourhood, town and region. This enables an examination of both the individual and contextual effects of using multilevel techniques and Bayesian methods for geographic data.
- **Gender inequalities in health:**
  - Sexual division between productive and reproductive work (gender roles) and differences in male and female identities are the 2 main structural factors that generate gender inequalities in health.
- Specifically, men and women experience different kinds of exposure and perceive and react differently to the same exposure. This, combined with the existence of gender bias in healthcare, explains the existence of gender inequalities in health, aspects that have been researched by members of this group. Unemployment and employment instability in the health arena have been analysed in terms of gender and class differences. A theoretical framework and explanatory charts have been 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:**
  - This group has produced evidence of the macroeconomic determinants of health inequalities between countries. A society's wealth explains a significant proportion of health inequalities. Leaving aside economic reasons, social and political settings are very important in explaining inequalities.
  - In recent years, the group has also studied the impact of the political context on the health of the population, concluding that countries with better developed welfare states had better levels of health. An analysis of policies was one of the tools used from the perspective of both formulation and application in specific interventions.



## Challenges

**Study health inequalities according to different inequality axes:**

- To date the group has essentially studied the social determinants of health separately in terms of social class and gender. We now aim to integrate these 2 axes and analyse inequalities among immigrants.
- In the last decade interest has grown into research into the impact of area of residence, especially smaller urbanized areas, on the health of the population. This explains why individual factors are not enough to explain diseases and poor health, as contextual factors regarding the area of residence (e.g., the unemployment rate) need to be

taken into account. Furthermore, the characteristics of the area of residence can contribute to socioeconomic and environmental inequalities in health. Finally, the study of health inequalities in smaller urban areas enables the detection of areas for intervention. This research has recently been facilitated by the use of methods such as GIS and Bayesian hierarchical models of spatial epidemiology.

**Study gender inequalities in health:**

- This research line aims to further explore the theoretical framework and explanatory charts developed to guide comprehension of the gender determinants that affect health.

**Study the social and political determinants of health and the impact on policy building and interventions:**

It is planned to continue studying the influence of policies on the health of populations and on social inequalities in health.

**Study sex and reproductive inequalities in health:**

It is planned to establish a line of research to investigate the different aspects of sexual and reproductive health (sexuality, contraception, pregnancy, birth, miscarriage, abortion, birth rates, etc).

## Active grants

- Borrell, C. Inequalities in the use of health services and preventive practices in turn-of-the-century Spain. Period: January 2008-March 2010. Expedient: PI07/90302.
- Borrell, C. Evolution of socioeconomic inequalities in mortality in small areas of cities in Spain-MEDEA. Period: January 2009-April 2012. Expedient: PI08/1488.
- Borrell, C. INEQ-cities (Socioeconomic inequalities in mortality: evidence and policies in cities of Europe). 2009-2012. Expedient: 2008 12 13.
- Borrell, C. INEQ-cities (socioeconomic inequalities in mortality:

evidence and policies in cities of Europe). Period: January 2010-December 2011. Expedient: PI09/90676.

- Cortés, I. Work-related mental health problems attended to in primary care: two perspectives to increase understanding. Period: October 2009-December 2011. Expedient: PI06/1831.
- Díez, E. Health impact assessment of a comprehensive intervention project in a suburb of Barcelona. Period: January 2010-December 2011. Expedient: PI09/90700.
- Pérez, G. Social and economic disparities in pregnancy planning

in the provinces and autonomous regions. Period: January 2008-March 2010. Expedient: PI07/90050.

- Pérez, G. Socioeconomic disparities in pregnancy planning and contraceptive use in teenagers and young people in Spain. Period: January 2010-December 2011. Expedient: PI09/90424.
- Rodríguez-Sanz, M. Inequalities in health system use in Catalonia: the impact on primary care, specialist care and preventive practices. Period: January 2007-September 2010. Expedient: 098/12/06.

\*TIF: 48.097 \*\*MIF: 2.004

## Scientific production

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- 01 De Souza E., Morris J.K., Dolk H., Nelen V., Mosquera-Tenreiro C., Francannet C., Salvador J., Portillo I., Scarano G., Calzolari E., Stone D., Verellen-Dumoulin C., Queisser-Luft A., Gatt M., Bakker M., Garne E., Khoshnood B., Poetsch S., Bianca S., Doray B., Bianchi F., Addor M.-C., Tucker D., Latos-Bielenska A., Barisic I. Case-control analysis of paternal age and trisomic anomalies. Arch. Dis. Child.; 95(11):893-897  
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- 02 Morrison J., Borrell C., Mari-Dell'Olmo M., Ruiz Cantero M.T., Benach J., Fernandez E., Pasarin M.I., Perez G., Cascant L., Alvarez-Dardet C., Artazcoz L., Perez K., Garcia-Calvente M.D.M., Ruiz I. Desigualdades de género en la Sociedad Española de Salud Pública y Administración Sanitaria (2000-2009) [Codificación de la mortalidad directamente relacionada con drogas ilegales en España: Hacia una adaptación a los criterios estándar europeos]. Gac. Sanit.; 24(4):334-338  
IF: 1.114

- 03 Prez G., Villegas R., Ruiz-Muoz D., Rodriguez-Sanz M. Determinants of oral contraception use in a southern European setting. Eur. J. Contracept. Reprod. Health Care; 15(1):48-53  
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- 04 Espelt A., Font-Ribera L., Rodriguez-Sanz M., Artazcoz L., Ferrando J., Plaza A., Borrell C. Disability among older people in a southern European city in 2006: Trends in gender and socioeconomic inequalities. J. Womens Health; 19(5):927-933  
IF: 1.454



- 05** Stirbu I., Kunst A.E., Bop M., Leinsalu M., Regidor E., Esnaola S., Cost G., Martikainen P., Borrell C., Deboosere P., Kalediene R., Rychtarikova J., Artnik B., Mackenbach J.P. Educational inequalities in avoidable mortality in Europe. *J. Epidemiol. Community Health*; 64(10):913-920  
**IF: 2.983**
- 06** Novoa A.M., Perez K., Santamarina-Rubio E., Mari-Dell'Olmo M., Tobias A. Effectiveness of speed enforcement through fixed speed cameras: A time series study. *Inj. Prev.*; 16(1):12-16  
**IF: 1.504**
- 07** Muntaner C., Borrell C., Vanroelen C., Chung H., Benach J., Kim I.H., Ng E. Employment relations, social class and health: A review and analysis of conceptual and measurement alternatives. *Soc. Sci. Med.*; 71(12):2130-2140  
**IF: 2.742**
- 08** Artazcoz L., Cortes I., Borrell C., Escriba-Aguir V., Cascant L. Gender and social class differences in the association between early retirement and health in Spain. *Womens Health Iss.*; 20(6):441-447  
**IF: 1.287**
- 09** Novoa A.M., Perez K., Santamarina-Rubio E., Mari-Dell'Olmo M., Ferrando J., Peiro R., Tobias A., Zori P., Borrell C. Impact of the penalty points system on road traffic injuries in Spain: A time-series study. *Am. J. Public Health*; 100(11):2220-2227  
**IF: 3.85**
- 10** Villalbi J.R., Casas C., Bartoll X., Artazcoz L., Ballestin M., Borrell C., Camprubi E., Duran J., Garcia R., Rodriguez P., Salamero M. Indicators for the management of public health services. *Gac. Sanit.*; 24(5):378-384  
**IF: 1.114**
- 11** Borrell C., Mari-Dell'Olmo M., Serral G., Martinez-Beneito M., Gotsens M. Inequalities in mortality in small areas of eleven Spanish cities (the multicenter MEDEA project). *Health Place*; 16(4):703-711  
**IF: 2.694**
- 12** Gine-Garriga M., Guerra M., Manini T.M., Mari-Dell'Olmo M., Pages E., Unnithan V.B. Measuring balance, lower extremity strength and gait in the elderly: Construct validation of an instrument. *Arch. Gerontol. Geriatr.*; 51(2):199-204  
**IF: 1.438**
- 13** Malmusi D., Borrell C., Benach J. Migration-related health inequalities: Showing the complex interactions between gender, social class and place of origin. *Soc. Sci. Med.*; 71(9):1610-1619  
**IF: 2.742**
- 14** Borrell C., Muntaner C., Gil-Gonzalez D., Artazcoz L., Rodriguez-Sanz M., Rohlf s I., Perez K., Garcia-Calvente M., Villegas R., Alvarez-Dardet C. Perceived discrimination and health by gender, social class, and country of birth in a Southern European country. *Prev. Med.*; 50(40575):86-92  
**IF: 3.299**
- 15** Borrell C., Artazcoz L., Gil-Gonzalez D., Perez G., Rohlf s I., Perez K. Perceived sexism as a health determinant in Spain. *J. Womens Health*; 19(4):741-750  
**IF: 1.454**
- 16** Rocha K.B., Perez K., Rodriguez-Sanz M., Borrell C., Obiols J.E. Prevalence of mental health problems and their association with socioeconomic, work and health variables: Findings from the Spain National Health Survey. *Psicothema*; 22(3):389-395  
**IF: 0.939**
- 17** Serral Cano G., Puigpinos i Riera R., Robles Garrido I., Pons-Vigues M., Borrell C. Satisfaction and expectations of the women participants and notparticipants in the breast cancerscreening programme in barcelona after 10 years of operation. *Rev. Esp. Salud Publica*; 84(6):717-729  
**IF: 0.774**
- 18** Garrido-Cumbrera M., Borrell C., Palencia L., Espelt A., Rodriguez-Sanz M., Pasarin M., Kunst A. Social class inequalities in the utilization of health care and preventive services in Spain, a country with a national health system. *Int. J. Health Serv.*; 40(3):525-542  
**IF: 0.869**
- 19** Palencia L., Espelt A., Rodriguez-Sanz M., Puigpinos R., Pons-Vigues M., Pasarin M.I., Spadea T., Kunst A.E., Borrell C. Socio-economic inequalities in breast and cervical cancer screening practices in Europe: Influence of the type of screening program. *Int. J. Epidemiol.*; 39(3):757-765  
**IF: 5.759**
- 20** Rajmil L., Lopez-Aguila S., Penina A.M., Bustos A.M., Sanz M.R., Guiteras P.B. Socio-economic inequalities in children's mental health in Catalonia. *An. Pediatr.*; 73(5):233-240  
**IF: 0.57**
- 21** Fernandez E., Antonanzas F., Espallargues M., Galan I., Godoy P., Jose Lopez M., Oliva J., Perez G., Perez-Hoyos S., Regidor E., Ruano A., Sarria-Santamera A. The road is made by walking. *Gac. Sanit.*; 24(1):1-4  
**IF: 1.114**
- 22** Perez G., Garcia-Subirats I., Rodriguez-Sanz M., Diez E., Borrell C. Trends in inequalities in induced abortion according to educational level among urban women. *J. Urban Health*; 87(3):524-530  
**IF: 2.068**
- 23** Dalmau-Bueno A., Garcia-Altes A., Mari-Dell'Olmo M., Perez K., Espelt A., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in cirrhosis mortality in an urban area of Southern Europe: A multilevel approach. *J. Epidemiol. Community Health*; 64(8):720-727  
**IF: 2.983**
- 24** Dalmau-Bueno A., Garcia-Altes A., Mari-Dell'Olmo M., Perez K., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in mortality over a twenty-two-year period in the city of Barcelona (Spain). *Gac. Sanit.*; 24(1):20-27  
**IF: 1.114**

\* Total Impact Factor  
 \*\* Mean Impact Factor



# Epidemiology of Addictions

TEAM



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Main lines of research

**Epidemiology of drug use patterns:**

- Study of variables such as socioeconomic level, social network and violence as determinants of heroin use and associated health problems.
- Patterns of heroin and cocaine use, associated health problems and implications for health care services.
- Methadone treatment programmes, cost/effectiveness of auxiliary programmes and improvements in quality of life.
- Development and evaluation of new instruments for diagnosis and screening for alcohol-related problems.

**Health problems associated with drug abuse:**

**Infections:**

- Prevalence and patterns of HIV/AIDS in Spain, especially among drug users.
- HTLV-1 and syringe user. Molecu-

lar epidemiology of HTLV-2.

- Prevalence of other infections related to injected-drug use and associated factors. Prevention policies.

**Injuries:**

Prevalence of substance abuse in individuals involved in traffic accidents and other accidents. Effectiveness of brief motivational interventions to reduce alcohol consumption in the injured who arrive at emergency rooms under the influence of alcohol but without alcoholic dependence.

**Psychiatric comorbidity:**

Psychiatric comorbidity in illegal drug users. Development of criteria for heroin and cocaine dependence for application in semi-structured questionnaires and similar in areas of mental health.

**Impact of drug consumption on mortality:**

- Main causes of mortality among drug users (overdoses, AIDS, accidents, homicide, suicide, chronic liver disease, etc.). Mortality rates and life-expectancy estimates.
- Effects related to the route of heroin administration and relationships between factors such as frequency of consumption, overdose, level of education and knowledge of causes of mortality.

**Quality of life in drug users:**

Factors determining decreased quality of life in active cocaine and heroin users.

**Evaluation of health care policies:**

- Analysis of health care policies and differences in immigrant access to health care services in European cities.
- Evaluation of Spanish policy concerning legal and illegal drug consumption and its impact on the general population.





## Challenges

**Epidemiology and patterns of drug use:**

- Incidence and patterns of cocaine use.
- Incidence and patterns of heroin use.
- Prevalence of cocaine, heroin and alcohol.

**Health problems associated to drug use:**

- Aggressive and violent attitudes and behaviour in young cocaine users.

- Quality of life in users with psychiatric comorbidity.
- Use of services among young heroin, cocaine and alcohol users.
- Factors associated with retention in treatment programmes for cocaine and alcohol addiction.
- Mortality and its determinants in cohorts of alcohol and cocaine-dependent subjects.
- Factors associated with acute health problems following cocaine use.
- Analysis of differential social and

health determinants among immigrants who use illegal drugs.

**Evaluation of health policies:**

- Evaluation of supervised drug consumption rooms and other policies to reduce harm.
- Study of social inequalities in evaluating results and adherence to treatment.
- Evaluation of brief motivational intervention programmes as an alternative to disciplinary measures in teenagers who consume psychoactive substances.

## Active grants

- Brugal, M., Guitart, A. Evaluation of the effectiveness of early treatment intervention for and cigarette and cannabis smoking cessation in young people. Expedient: PND 2009/046.

- Brugal, M., Espelt, A. Monitoring of HIV, HCV and other STIs and risk behaviours in IDUs recruited in harm-reduction centres in Catalonia (REDAN). Expedient: CEEISCAT/ICO.

- Brugal, M., Espelt, A., Guitart, A. Addictive Disorders Network: clinical and epidemiological evaluation of drugs of abuse (partner centre). Expedient: 06/0001/1018.

\*TIF: 20.387 \*\*MIF: 2.548

## Scientific production

**INDEXED PUBLICATIONS**

- 01 Domingo-Salvany A., Brugal M.T., Barrio G., Gonzalez-Saiz F., Bravo M.J., de la Fuente L. Gender differences in health related quality of life of young heroin users. *Health Qual. Life Outcomes*; 8  
**IF: 1.86**
- 02 Bravo M.J., Llorens N., Barrio G., Brugal M.T., Santos S., Sordo L., de la Fuente L. Methadone maintenance treatment: A protective factor for cocaine injection in a street-recruited cohort of heroin users. *Drug Alcohol Depend.*; 112(1-2):62-68  
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- 03 Santos S., Molist G., Barrio G., Pulido J., Bravo M.J., Fernandez-Cuenca R., de la Fuente L. Classification of illicit drug-induced deaths in Spain: Toward the adoption of the European standard criteria. *Gac. Sanit.*; 24(4):309-313  
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- 04 Pulido Manzanero J., Lardelli P., De La Fuente L., Flores V.M., Vallejo F., Regidor E. Impact of the demerit point system on road traffic accident mortality in Spain. *J. Epidemiol. Community Health*; 64(3):274-276  
**IF: 2.983**
- 05 Dalmau-Bueno A., Garcia-Altes A., Mari-Del'Olmo M., Perez K., Espelt A., Kunst A.E., Borrell C. Trends in socioeconomic inequalities in cirrhosis mortality in an urban area of Southern Europe: A multilevel approach. *J. Epidemiol. Community Health*; 64(8):720-727  
**IF: 2.983**
- 06 Espelt A., Font-Ribera L., Rodriguez-Sanz M., Artazcoz L., Ferrando J., Plaza A., Borrell C. Disability among older people in a southern european city in 2006: Trends in gender and socioeconomic inequalities. *J. Womens Health*; 19(5):927-933  
**IF: 1.454**

- 07 Garrido-Cumbrera M., Borrell C., Palencia L., Espelt A., Rodriguez-Sanz M., Pasarin M., Kunst A. Social class inequalities in the utilization of health care and preventive services in Spain, a country with a national health system. *Int. J. Health Serv.*; 40(3):525-542  
**IF: 0.869**
- 08 Palencia L., Espelt A., Rodriguez-Sanz M., Puigpinos R., Pons-Vigues M., Pasarin M.I., Spadea T., Kunst A.E., Borrell C. Socio-economic inequalities in breast and cervical cancer screening practices in Europe: Influence of the type of screening program. *Int. J. Epidemiol.*; 39(3):757-765  
**IF: 5.759**

 \* Total Impact Factor  
 \*\* Mean Impact Factor



# Primary Care Research

TEAM



**Researchers**

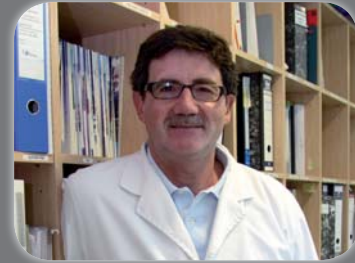
Núria Soriano

EAP Sardenya

**Technicians**

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**Coordinator**

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Main lines of research

- Health-related quality of life in patients with stroke.
- Implementation of cardiovascular risk prevention guidelines in clinical practice.
- Systematic review of clinical practice guidelines for cardiovascular risk prevention.
- Health related quality of life in patients with cardiovascular disease.

Challenges

- Enlarge the research team by linking up with other primary care centres associated with the ACEBA Family Medicine Teaching Unit.
- Work with other research teams in IIB Sant Pau.
- Work with other European institutions in implementing projects on risk prevention and health promotion in primary care settings.

Active grants

- Brotons, C. Prevalence of obesity, impaired glucose metabolism and metabolic syndrome and its relationship with ethnic and psychosocial factors in the immigrant population in Spain. Period: January 2008-July 2010. Expedient: PI07/90263.
- Brotons, C. Evaluation study of primary care management of patients with stroke. Period: January 2007-September 2010. Expedient: 056/13/2006.
- Brotons, C. Attitudes to preventive services and to life style: the views of patients. Europrew Team. Period: January 2007-August 2010. Expedient: 056/13/2006.

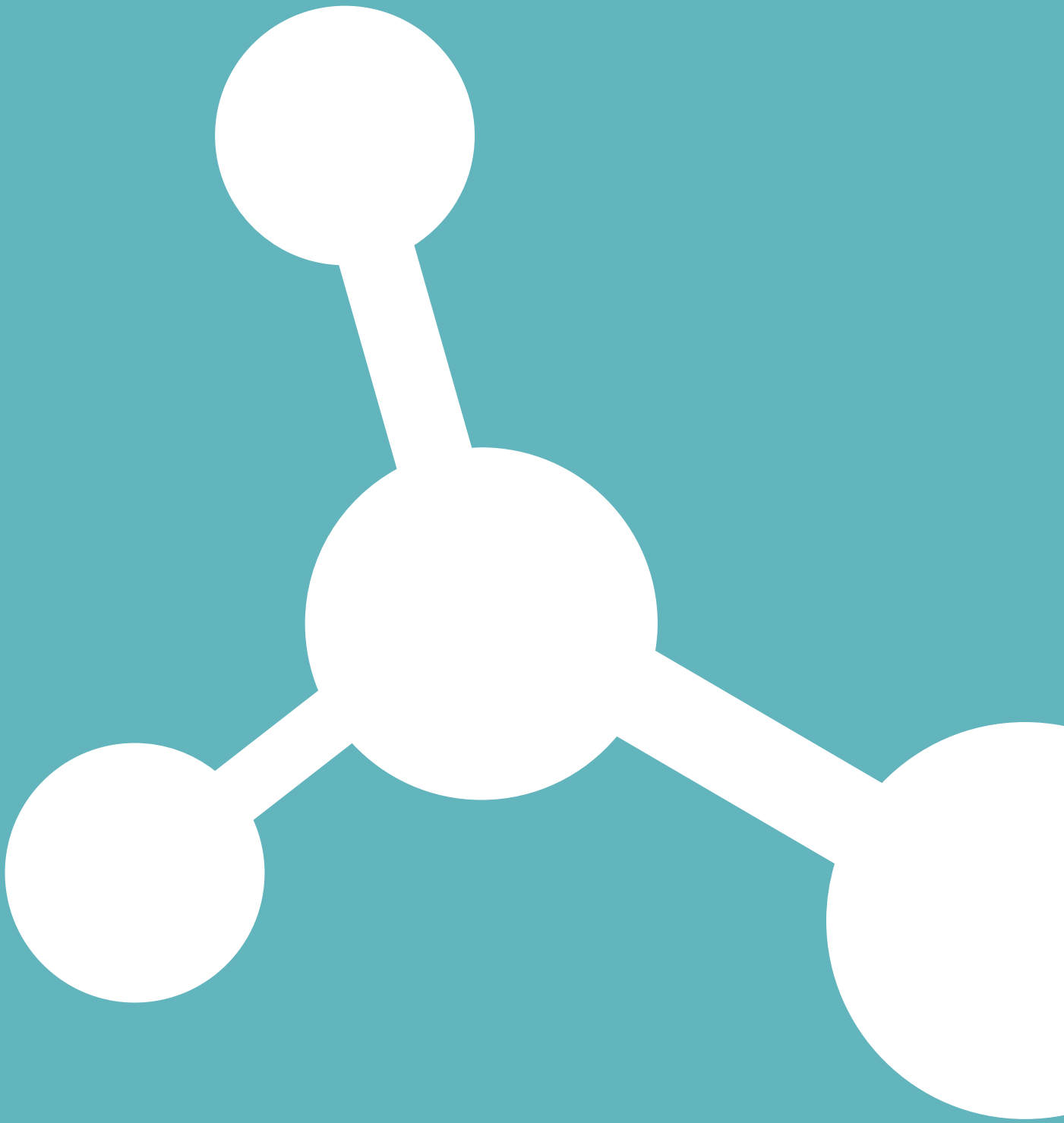


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- 01** Pladevall M., Brotons C., Gabriel R., Arnau A., Suarez C., De La Figuera M., Marquez E., Coca A., Sobrino J., Divine G., Heisler M., Williams L.K. Multicenter cluster-randomized trial of a multifactorial intervention to improve antihypertensive medication adherence and blood pressure control among patients at high cardiovascular risk (The COM99 Study). *Circulation*; 122(12):1183-1191  
**IF: 14.429**
- 02** Soriano N., Ribera A., Marsal J.R., Brotons C., Cascant P., Permanyer-Miralda G. Improvements in health-related quality of life of patients admitted for heart failure. The HF-QoL study. *Rev. Esp. Cardiol*; 63(6):668-676  
**IF: 2.157**
- 03** Ferrer A., Formiga F., Almeda J., Alonso J., Brotons C., Pujol R. Health-related quality of life in nonagenarians: gender, functional status and nutritional risk as associated factors. *Med. Clin.*; 134(7):303-306  
**IF: 1.413**
- 04** Brotons Cuixart C., Moral Pelaez I. Primary prevention of cardiovascular disease with aspirin: What do the guidelines say? *Aten. Prim.*; 42(9):470-481  
**IF: 0.619**
- 05** Maiques Galan A., Brotons Cuixart C. Therapeutic drug option for dyslipaemia. *Aten. Prim.*; 42(2):115-120  
**IF: 0.619**
- 06** Monteserin R., Brotons C., Moral I., Altimir S., Jose A.S., Santaeugenia S., Sellares J., Padros J. Effectiveness of a geriatric intervention in primary care: A randomized clinical trial. *Fam. Pr.*; 27(3):239-245  
**IF: 1.709**

\*TIF: 20.946 \*\*MIF: 3.491

\* Total Impact Factor  
\*\* Mean Impact Factor



**AREA T2**

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

*Genomics of Complex Diseases ..... 158*

*Molecular Bases of Disease ..... 160*

*Pharmacokinetic/Pharmacodynamic  
Modelling and Simulation ..... 162*

*Generation of Advanced Therapy Medicines..... 164*



## AREA T2

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

# Genomics of Complex Diseases

### TEAM



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#### Administrative staff

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Olga Solà IR-HSCSP

### Main lines of research

Genetic epidemiology and bioinformatics.

#### Genomic of Complex Diseases:

- Genetic Analysis of Idiopathic Thrombophilia (GAIT).
- Genetic Analysis of Osteoporosis (GAO).
- Genetic determinants of

diabetes type 2 in the Spanish population.

- Genetics of Chronic Venous Insufficiency.

#### Pharmacogenomics:

Macular degeneration associated with age (DMAE). Markers of genetic susceptibility and pharmacogenomics.

### Challenges

- Consolidate the genetic epidemiology and bioinformatics research lines.
- Increase human and material resources so as to achieve the goals defined for different projects.
- Coordinate an international cardiovascular genomic project.
- Establish pharmacogenomic agreements with biopharmaceutical companies.

### Active grants

- Arbesu, I. Contracts for young researchers. Period: January 2008-December 2010. Expedient: AGAUR 2008FI-B.
- García, C. Contracts for health professionals who have completed specialized health training period. Period: February 2008-January 2011. Expedient: FIS CM07/00126.
- López, S. Sara Borrell Postdoctoral Research Contract. Period: January 2009-December 2012. Expedient: FIS CD08/00059.
- Soria, JM. A genome-wide mapping and functional genomics approach to elucidating PRecO-

ciuous Artery DISEase (PROCARDIS). Period: April 2007-September 2011. Expedient: 07/LSHM-CT037273.

- Soria, JM. Genetic Analysis of Idiopathic Thrombosis (GAIT II). Period: December 2008-May 2011. Expedient: 07/2R01 LH070751-05.
- Soria JM. Genetic Analysis Linked to an International Action on Thrombosis (GALIA-Thromb), XXV Anniversary of Spanish Society of Thrombosis and Haemostasis (SETH). January 2010-December 2011.
- Soria, JM. Identification of genetic factors determining the variability of the FVIII levels and their implication in thromboembolic disease. Period: January 2009-December 2011. Expedient: FIS PI08/0420.

- Soria, JM. Agreement with the Health Department. Gencat. Stabilization of researchers. January 2008-December 2010. 06/DPT SALUT.
- Soria, JM. Support Funds to Catalanian Research Groups. Unit of Genomics of Complex Diseases. Period: September 2009-December 2013. Expedient: 2009SGR 1240.



## INDEXED PUBLICATIONS

**01** Buil A., Tregouet D.-A., Souto J.C., Saut N., Germain M., Rotival M., Tiret L., Cambien F., Lathrop M., Zeller T., Alessi M.-C., De Cordoba S.R., Munzel T., Wild P., Fontcuberta J., Gagnon F., Emmerich J., Almasy L., Blankenberg S., Soria J.-M., Morange P.-E. C4BPB/C4BPA is a new susceptibility locus for venous thrombosis with unknown protein S-independent mechanism: Results from genome-wide association and gene expression analyses followed by case-control studies. *Blood*; 115(23):4644-4650  
**IF: 10.558**

**02** Sabater-Lleal M., Chillón M., Mordillo C., Martínez A., Gil E., Mateo J., Blangero J., Almasy L., Fontcuberta J., Soria J.M. Combined cis-regulator elements as important mechanism affecting FXII plasma levels. *Thromb. Res.*; 125(2):e55-e60  
**IF: 2.372**

**03** Vila L., Martínez-Pérez A., Camacho M., Buil A., Alcolea S., Pujol-Moix N., Soler M., Anton R., Souto J.-C., Fontcuberta J., Soria J.-M. Heritability of thromboxane A2 and prostaglandin E2 biosynthetic machinery in a Spanish population. *Arterioscler. Thromb. Vasc. Biol.*; 30(1):128-134  
**IF: 7.215**

\*TIF: 33.080 \*\*MIF: 6.616

**04** Brunel H., Gallardo-Chacon J.-J., Buil A., Vallverdu M., Soria J.M., Caminal P., Perera A. MISS: A non-linear methodology based on mutual information for genetic association studies in both population and sib-pairs analysis. *Bioinformatics*; 26(15):1811-1818  
**IF: 4.877**

**05** Calafell F., Almasy L., Sabater-Lleal M., Buil A., Mordillo C., Ramírez-Soriano A., Sikora M., Souto J.C., Blangero J., Fontcuberta J., Soria J.M. Sequence variation and genetic evolution at the human F12 locus: mapping quantitative trait nucleotides that influence FXII plasma levels. *Hum. Mol. Genet.*; 19(3): 517-525.  
**IF: 8.058**

\* Total Impact Factor  
 \*\* Mean Impact Factor



**AREA T2**

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

# Molecular Bases of Disease

**TEAM**



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**Collaborators**  
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**Main lines of research**

**General studies of structure and function, focusing at present on:**

- Coagulation cascade factors, emphasizing processes for generating thrombin from the Va Va-Xa complex and thrombin interaction with physiological substrates (fac-

tors V/VIII and protease-activated receptors) and inhibitors.

- Proteins associated with neurodegenerative diseases (currently SMN, a protein directly associated with spinal muscular atrophy).
- Factors in the innate immune

system mediated by toll-like receptors and also linked to cancerigenic processes and, in particular, the role of the MyD88 adaptor protein.

**Challenges**

To locate our research in a privileged position among HSCSP Research Institute and the IIB Sant Pau research lines in which protein structure information is particularly relevant, including but not limited to projects to identify new DNA mutations, polymorphisms and small deletions as causes or modulators of specific diseases. In particular, we aim to create and consolidate a spearheading international group to study coagulation cascade factors and their impact on cardiovascular diseases and haemophilia.

**Active grants**

- Fuentes, P. Thrombus stabilization as a therapeutic target: in vitro studies and animal models. Period: March 2009-March 2012. Expedient: 08/2231.
- Fuentes, P. Programme i3. General Research Directorate. Period: January 2009-December 2011. Expedient: 09/I3.
- Fuentes, P. National Programme for Basic Research Projects. Period: October 2007-October 2010. Expedient: SAF2007-64140.





\*TIF: 16.945 \*\*MIF: 5.648

#### INDEXED PUBLICATIONS

- 01 Martin-Salces M., Vencesla A., Alvarez-Roman M.T., Rivas I., Fernandez I., Butta N., Baena M., Fuentes-Prior P., Tizzano E.F., Jimenez-Yuste V. Clinical and genetic findings in five female patients with haemophilia A: Identification of a novel missense mutation, p.Phe2127Ser. *Thromb. Haemost.*; 104(4):718-723  
**IF: 4.701**
- 02 Bernal S., Alias L., Barcelo M.J., Also-Rallo E., Martinez-Hernandez R., Gamez J., Guillen-Navarro E., Rosell J., Hernando I., Rodriguez-Alvarez F.J., Borrego S., Millan J.M., Hernandez-Chico C., Baiget M., Fuentes-Prior P., Tizzano E.F. The c.859G>C variant in the SMN2 gene is associated with types II and III SMA and originates from a common ancestor. *J. Med. Genet.*; 47(9):640-642  
**IF: 7.037**
- 03 Corral-Rodriguez M.A., MacEdo-Ribeiro S., Barbosa Pereira P.J., Fuentes-Prior P. Leech-derived thrombin inhibitors: From structures to mechanisms to clinical applications. *J. Med. Chem.*; 53(10):3847-3861  
**IF: 5.207**

\* Total Impact Factor  
 \*\* Mean Impact Factor



# Pharmacokinetic/Pharmacodynamic Modelling and Simulation

## TEAM



### Technicians

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IR-HSCSP



### Coordinator

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## Main lines of research

- Populational pharmacokinetic analysis aimed at establishing the pharmacokinetic characteristics of medical products and at differentiating and quantifying the degree of intra- and inter-individual variability.
- Continuous response analysis aimed at the analysis of effects (in the presence or absence of drugs) where the variable being evaluated changes values gradually.
- Non-continuous response analysis, for responses most frequently observed in clinical practice and including categorical responses and categorical survival, frequency and censored responses.
- Simulation of clinical trials and therapy applications, aimed at assisting with the planning of clinical trials from the perspectives of developing new drugs and of maximizing data yield and also aimed at studying the therapeutic application of narrow-therapeutic-margin drugs.

## Challenges

- Obtain recognition as an emerging group for the Pharmacokinetic/Pharmacodynamic Modelling and Simulation Group.
- Maintain existing external cooperation agreements.
- Establish new cooperation agreements within the Hospital de la Santa Creu i Sant Pau Research Institute.
- Generate sufficient financial resources to maintain and expand the number of staff in the group.
- Communicate our activities.

## Active grants

- Valle, M. Development of populational pharmacokinetic models of protease inhibitors boosted with ritonavir. Period: February 2006-March 2010. Expedient: 05/36465 FIPSE.
- Valle, M. Pharmacokinetic-pharmacodynamic approach to evaluating the interaction between delta-9-tetrahydrocannabinol and cannabidiol in healthy volunteers after oral administration: pharmacokinetic, antinociceptive and subjective effects. Period: February 2008-December 2011. Expedient: 70710.
- Valle, M. Quantification of unwanted effects following administration of delta-0 tetrahydrocannabinol and cannabidiol: Evaluation of interaction and establishment of risk/ benefit relationship via populational pharmacokinetic/ pharmacodynamic modelling. Period: January 2009-December 2011. Expedient: PI08/0471.
- Valle, M. Pharmacological interaction between *Ecchinacea* sp. and darunavir/ritonavir. Period: January 2010-December 2010. Expedient: TRA-067.
- Valle, M. Effect of reducing the ritonavir booster dose on plasma concentrations and atazanavir safety. Period: January 2010-December 2010. Expedient: TRA-076.
- Valle, M. SNS researcher contracts. Renewal. Period: March 2005-March 2011. Expedient: CP04/00121.



\*TIF: 13.655 \*\*MIF: 3.413

## INDEXED PUBLICATIONS

- 01** Molto J., Valle M., Santos J.R., Miranda C., Cedeno S., Negredo E., Yritia M., Videla S., Clotet B. Efficacy and safety of ritonavir dose reduction based on the tipranavir inhibitory quotient in HIV-infected patients on salvage antiretroviral therapy with tipranavir/ritonavir. *Aids Res. Hum. Retrovir.*; 26(11):1191-1196  
**IF: 2.082**
- 02** Molto J., Sanz-Moreno J., Valle M., Cedeno S., Bonal J., Bouarich H., Clotet B. Minimal removal of raltegravir by hemodialysis in HIV-infected patients with end-stage renal disease. *Antimicrob. Agents Chemother.*; 54(7):3047-3048  
**IF: 4.672**
- 03** Molto J., Valle M., Santos J.R., Mothe B., Miranda C., Cedeno S., Negredo E., Yritia M., Videla S., Barbanj M.J., Clotet B. Treatment simplification to once daily darunavir/ritonavir guided by the darunavir inhibitory quotient in heavily pretreated HIV-infected patients. *Antivir. Ther.*; 15(2):219-225  
**IF: 3.774**
- 04** Molto J., Deig E., Valle M., Maria Llibre J., Miranda C., Cedeno S., Valero S., Negredo E., Clotet B. Effect of nevirapine on the steady-state trough concentrations of atazanavir in HIV-infected patients receiving atazanavir/ritonavir. *Ther. Drug Monit.*; 32(1):93-96  
**IF: 3.127**

\* Total Impact Factor  
\*\* Mean Impact Factor



**AREA T2**

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

# Generation of Advanced Therapy Medicines

**TEAM**



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Ruth Coll	BST	Luis Vidal	BST
Núria de la Fuente	BST	Joaquim Vives	BST

<b>Technicians</b>	
Isabel González	BST
Mireia Lloret	BST
Silvia Marín	BST
Miriam Requena	BST

**Main lines of research**

- Bio-processing for cell and tissue production.
- Regeneration of locomotor systems.
- Stem cell therapy for the lymphohematopoietic system.
- Stem cell therapy for multiple sclerosis.

**Challenges**

Create a section within the BST with the structure of a pharmaceutical enterprise and able to develop, assay, register and commercialize advanced therapeutic drugs.

**Active grants**

- Codinach, M. Stem cells from amniotic fluid applied to neural and bone regeneration in foetal repair of ovine foetal myelomeningocele. Period: 2008-2011. Expedient: 08/2749.
- Garcia, J. FACTOCEL. Expansion of the facilities of a factory producing cellular drugs for regenerative medicine. Period: 2009-2011. Expedient: PLE2009-0092.
- Garcia, J. REDONTAP. Continuous Proliferation & Simultaneous Maturation of Haematopoietic Stem Cells into Blood Cell Lineages. Period: 2010-2014. Expedient: FP7-NMP-2008-SMALL-2.
- Garcia, J. Advanced medical therapies: cellular and tissue engineering products. Period: 2010-2013. Expedient: IPT-300000-2010-17.

**\*TIF: 1.587 \*\*MIF: 1.587**

**Scientific production**

**INDEXED PUBLICATIONS**

- 01 Garcia J. Allogeneic unrelated cord blood banking worldwide: An update. *Transfus. Apher. Sci.*; 42(3):257-263  
**IF: 1.587**

\* Total Impact Factor  
\*\*Mean Impact Factor





# Associated Groups

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# Emerging Processes in Prevalent Diseases

TEAM

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Miquel Barcons	HSCSP	Héctor Hernández	HSCSP
Marta Blázquez	HSCSP	Sergio Herrera	HSCSP
Fancisco Caballero	HSCSP	Leopoldo Higa	HSCSP
Noemí Cerdán	HSCSP	Miriam Mateo	HSCSP
Andrés Ceresuela	HSCSP	Albert Mauri	HSCSP
Ana Coloma	HSCSP	J.A. Montiel	HSCSP
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		Mireia Puig	HSCSP

Josep Ris	HSCSP
Miquel Santaló	HSCSP
Sonia Serradell	HSCSP
Olga Trejo	HSCSP
Miquel Turbau	HSCSP
Esther Vendrell	HSCSP

Main lines of research

**Emerging processes in prevalent diseases:**

The general aim is to study and analyse processes that are frequently observed in emergency departments so as to transfer the results to clinical practice and so 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.

**Organ and tissue transplantation.****Organ and tissue donation:**

Francisco Caballero.

**Respiratory system disorders:**

Salvador Benito.

- Respiratory pattern analysis in the return to spontaneous breathing. PI: Iván Díaz.
- Ventilatory pattern analysis in heart failure. PI: Sergio Herrera.
- Pneumonia in the emergency department. PI: Miriam Mateo.

**Cardiovascular system:**

Miquel Santaló.

- Acute coronary syndrome in elderly patients. PI: Josep Antoni Montiel.

- Acute coronary syndrome in women. PI: Marta Blázquez.
  - Ultrasensitive markers in acute coronary syndrome. PI: Leopoldo Higa.
  - Complications in patients implanted with an ICD. PI: Olga Trejo.
  - Cardiac failure. PI: Aitor Alquézar.
  - Supraventricular arrhythmias. PI: Aitor Alquézar.
- Drug abuse-HIV:**
- HCV in patients with HIV. PI: Josep M. Guardiola.
  - Medical complications associated with drug abuse. PI: Daniel Fuster.





## INDEXED PUBLICATIONS

- 01** Caminal P, Giraldo B.F., Vallverdu M, Benito S., Schroeder R., Voss A. Symbolic dynamic analysis of relations between cardiac and breathing cycles in patients on weaning trials. *Ann. Biomed. Eng.*; 38(8):2542-2552  
**IF: 2.374**
- 02** Garde A., Schroeder R., Voss A., Caminal P, Benito S., Giraldo B.F. Patients on weaning trials classified with support vector machines. *Physiol. Meas.*; 31(7):979-993  
**IF: 1.567**
- 03** Vispo E., Labarga P, Guardiola J.M., Barreiro P, Miralles C., Rubio R., Miralles P, Aguirrebengoa K., Portu J., Morello J., Rodriguez-Novoa S., Soriano V. Preemptive erythropoietin plus high ribavirin doses to increase rapid virological responses in HIV patients treated for chronic hepatitis C. *Aids Res. Hum. Retrovir.*; 26(4):419-424  
**IF: 2.082**
- 04** Domingo P., Cabeza M.C., Pruvost A., Salazar J., Maria D.M.G., Mateo M.G., Domingo J.C., Fernandez I., Villarroya F., Munoz J., Vidal F., Baiget M. Relationship between HIV/highly active antiretroviral therapy (HAART)-associated lipodystrophy syndrome and stavudine-triphosphate intracellular levels in patients with stavudine-based antiretroviral regimens. *Clin. Infect. Dis.*; 50(7):1033-1040  
**IF: 8.186**
- 05** Baggish A.L., Van Kimmenade R.R.J., Pinto Y., Richards A.M., Lainchbury J., Bayes-Genis A., Santalo M., Ordonez-Llanos J., Januzzi J.L. New york heart association class versus amino-terminal pro-B type natriuretic peptide for acute heart failure prognosis. *Biomarkers*; 15(4):307-314  
**IF: 2.09**
- 06** Amaya-Villar R., Garcia-Cabrera E., Sulleiro-Igual E., Fernandez-Viladrich P, Fontanals-Aymerich D., Catalan-Alonso P, Rodrigo-Gonzalo de Liria C., Coloma-Conde A., Grill-Diaz F., Guerrero-Espejo A., Pachon J., Prats-Pastor G. Three-year multicenter surveillance of community-acquired listeria monocytogenes meningitis in adults. *BMC Infect. Dis.*; 10  
**IF: 2.825**
- 07** Rodriguez-Bano J., Picon E., Gijon P., Hernandez J.R., Cisneros J.M., Pena C., Almela M., Almirante B., Grill F., Colomina J., Molinos S., Oliver A., Fernandez-Mazarrasa C., Navarro G., Coloma A., Lopez-Cerero L., Pascual A. Risk factors and prognosis of nosocomial bloodstream infections caused by extended-spectrum- $\beta$ -lactamase-producing *Escherichia coli*. *J. Clin. Microbiol.*; 48(5):1726-1731  
**IF: 4.22**
- 08** Rodriguez-Bano J., Picon E., Gijon P., Hernandez J.R., Ruiz M., Pena C., Almela M., Almirante B., Grill F., Colomina J., Gimenez M., Oliver A., Horcajada J.P., Navarro G., Coloma A., Pascual A. Community-onset bacteremia due to extended-spectrum  $\beta$ -lactamase-producing *Escherichia coli*: Risk factors and prognosis. *Clin. Infect. Dis.*; 50(1):40-48  
**IF: 8.186**
- 09** Domingo P., Cabeza M.C., Pruvost A., Salazar J., Maria D.M.G., Mateo M.G., Domingo J.C., Fernandez I., Villarroya F., Munoz J., Vidal F., Baiget M. Relationship between HIV/highly active antiretroviral therapy (HAART)-associated lipodystrophy syndrome and stavudine-triphosphate intracellular levels in patients with stavudine-based antiretroviral regimens. *Clin. Infect. Dis.*; 50(7):1033-1040  
**IF: 8.186**
- 10** Vispo E., Labarga P, Guardiola J.M., Barreiro P, Miralles C., Rubio R., Miralles P, Aguirrebengoa K., Portu J., Morello J., Rodriguez-Novoa S., Soriano V. Preemptive erythropoietin plus high ribavirin doses to increase rapid virological responses in HIV patients treated for chronic hepatitis C. *Aids Res. Hum. Retrovir.*; 26(4):419-424  
**IF: 2.082**

\*TIF: 41.798 \*\*MIF: 4.179

\* Total Impact Factor  
\*\* Mean Impact Factor



# Radiophysics and Radioprotection

TEAM



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| Teresa Eudaldo | HSCSP |
| Núria Jornet   | HSCSP |
| Agustín Ruiz   | HSCSP |

Main lines of research

**External beam radiotherapy:**

- Characterization of various "in vivo" dose measurement detectors for radiation therapy treatments (RT) with intensity modulation (IMRT).
- Validation of dose calculation algorithms for external beam radiotherapy planning systems.

**Biologic dosimetry:**

- In cooperation with the Autonomous University of Barcelona team led by Dr. María Rosa Caballín:
- Cytogenetic evaluation of the relative biological efficacy of low-energy X-rays.

Challenges

- Optimization of QA procedures for IMRT treatments.
- Index dose assessment on multislices CAT.

\*TIF: 1.316 \*\*MIF: 1.316

Scientific production

**INDEXED PUBLICATIONS**

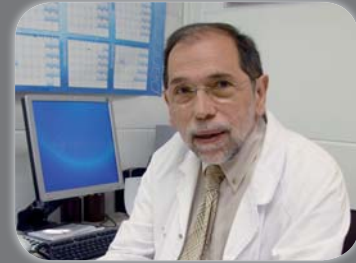
- 01 Eudaldo T, Olsen K. The European Federation of Organisations for Medical Physics. Policy Statement No. 12: The present status of Medical Physics Education and Training in Europe. New perspectives and EFOMP recommendations. Phys. Medica; 26(1):1-5  
**IF: 1.316**

\* Total Impact Factor  
\*\*Mean Impact Factor



# Paediatrics

TEAM



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Gemma Carreras	HSCSP	Montserrat Torrent	HSCSP
Jerónimo Ferrés	HSCSP	Sergio Flores	HSCSP
Gloria M <sup>a</sup> Fraga	HSCSP	M <sup>a</sup> José García	HSCSP

<b>Collaborators</b>	
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Marta García	Fundació Enriqueta Villavechia
Juan Ramis	Fundació Enriqueta Villavechia

Main lines of research

- Acute lymphoblastic leukaemia: Study of the TEL-AML1 subpopulation of children with Down syndrome. Post-chemotherapy sequelae: kidney function studies of patients undergoing chemotherapy with high doses of methotrexate.
  - Erythropoietin as an alternative to transfusion in paediatrics.
  - Denosumab for giant-cell bone tumours. Phase 2 multicentre study.
  - Chronic functional constipation: Treatment with PEG.
  - Celiac disease: Atypical forms and lymphocyte sub-populations in the intestinal mucosa.
  - Prevention of staphylococcal septicaemia: Phase 2b/3 multicentre, randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of injectable pagibaximab in newborn infants with very low birth weights.
- Neonatology:**
- Prospective multicentre study of infants with very low body weight (<1500 g). Database called SEN 1500 aimed at collecting and disseminating information on the epidemiological situation of infants with very low body weight. Under the auspices of the Spanish Neonatology Society. Morbidity and mortality studies and followup at the age of 2 years.
  - National and European prospective studies of exogenous surfactant treatment of respiratory distress in premature infants. EURONEONET.
  - Prospective multicentre studies of RSV infection in ex-premature infants in Spain. IRIS Group (Infant Respiratory Infection by RSV).
  - Clinical application of peritoneal drainage in the treatment of enterocolitis in infants.

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).
  - Apply adaptive cell immunotherapy for tumours.
  - Implement the phase 2 trial: Antiangiogenic factor applicability to paediatric tumours.
- Neonatology:**
- Intervention in post-asphyxia neuronal damage in asphyctic infants by applying therapeutic hypothermia (in the context of a Catalan network).

Scientific production

\*TIF: 2.433 \*\*MIF: 2.433

INDEXED PUBLICATIONS

- 01 Salt preference of nursing mothers is associated with earlier cessation of exclusive breastfeeding 2010. *Appetite*; 54(1):233-236  
IF: 2.433

\* Total Impact Factor  
\*\* Mean Impact Factor



# Chronic Respiratory Diseases

TEAM



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Main lines of research

**Asthma:**

- Inflammatory and genetic exacerbation mechanisms in severe asthma.
- Role of the toll-like receptors.
- Changes in exhaled air temperature as a non-invasive measure of inflammation.
- Studies in education and allergies, meta-analysis and clinical practice guidelines.

**COPD and respiratory failure:**

- New techniques of weaning from home-based non-invasive ventilation and their viability.
- Correlation of lung function and imaging techniques in patients with neuromuscular disorders.
- Respiratory rehabilitation studies.
- Inflammatory mechanisms (PCR) and severity.
- Coordination between care levels (primary and hospital care) for COPD and aneurysm and COPD.

**SAHS:**

- Physiology and clinical, diagnostic and therapeutic consequences of SAHS.
- Obesity-hypoventilation syndrome.
- Airway inflammation and SAHS.

**Bronchoscopy:**

Cryowave Efficacy in obtaining lung biopsies from patients with interstitial disease.

Active grants

- Güell, Maria. Long-term respiratory rehabilitation programmes for COPD: evaluation of cost-effectiveness. Period: January 2007-December 2010. Expedient: PI06/0792.
- Giner, J. Effectiveness of quality control methods for primary care spirometry. Period: January 2010-December 2012. Expedient: PI09/0686.

- Mayos, M. Systemic effects of the sleep apnoea syndrome: Analysis using animal models and human studies. Period: January 2009-December 2011. Expedient: PI08/1211.
- Sibila, O. Study of lung defence mechanisms in severe COPD and its relationship to airway infection. Period: January 2010-December 2012. Expedient: PI09/2567.

- Solanes, I. Impact of a multidisciplinary coordinated primary care-hospital programme to improve COPD care in a health area. Period: June 2007-May 2011. Expedient: 06/SEPAR.



## Challenges

- Enhance basic research into obstructive respiratory diseases.
- Recruit young researchers to the team.
- Cooperate with other research groups and hospital departments in setting up research groups in a local multidisciplinary network and in other Spanish centres (inclusion in CIBERES) and European centres (joint studies).

## Awards

- Best Article of the Year Award for Fraga-Iriso, R., Nunez-Naveira, L., Brienza, N.S., Centeno-Cortes, A., Lopez-Pelaez, E., Vereza, H., and Ramos-Barbon, D.. Development of a murine model of airway inflammation and remodelling in experimental asthma. Arch Bronconeumol; 45(9):422-428.

## Scientific production

## INDEXED PUBLICATIONS

- 01** Barbe F., Duran-Cantolla J., Capote F., De La Pena M., Chiner E., Masa J.F., Gonzalez M., Marin J.M., Garcia-Rio F., De Atauri J.D., Teran J., Mayos M., Monasterio C., Del Campo F., Gomez S., De La Torre M.S., Martinez M., Montserrat J.M. Long-term effect of continuous positive airway pressure in hypertensive patients with sleep apnea. Am. J. Respir. Crit. Care Med.; 181(7):718-726  
**IF: 10.191**
- 02** Samolski D., Tarrega J., Anton A., Mayos M., Marti S., Farrero E., Guell R. Sleep hypoventilation due to increased nocturnal oxygen flow in

hypercapnic COPD patients. Respirology; 15(2):283-288

**IF: 1.865**

- 03** Martinez-Olondris P., Sibila O., Agusti C., Rigol M., Soy D., Esquinas C., Piner R., Luque N., Guerrero L., Quera M.A., Marco F., De La Bellacasa J.P., Ramirez J., Torres A. An experimental model of pneumonia induced by methicillin-resistant Staphylococcus aureus in ventilated piglets. Eur. Resp. J.; 36(4):901-906  
**IF: 5.922**
- 04** Dweik R.A., Sorkness R.L., Wenzel S., Hammel J., Curran-Everett D., Comhair S.A.A., Bleecker E., Busse W., Calhoun W.J., Castro M., Chung K.F., Israel E., Jarjour N., Moore W., Peters

S., Teague G., Gaston B., Erzurum S.C., National Heart, Lung, and Blood Institute Severe Asthma Research Program (col. Torrego A.) Use of exhaled nitric oxide measurement to identify a reactive, at-risk phenotype among patients with asthma. Am. J. Respir. Crit. Care Med.; 181(10):1033-1041

**IF: 10.191**

- 05** Canet J., Gallart L., Gomar C., Paluzie G., Valles J., Castillo J., Sabate S., Mazo V., Briones Z., Sanchis J. Prediction of postoperative pulmonary complications in a population-based surgical cohort. Anesthesiology; 113(6):1338-1350  
**IF: 5.486**

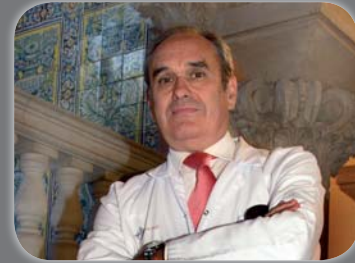
**\*TIF: 33.655 \*\*MIF: 6.731**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Ophthalmology

TEAM



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Main lines of research

- Exploration of the physiopathological and genetic bases that condition the pathological development of wet age-related macular degeneration and response to treatment with anti-VEGF.
- Optimization of the functional rehabilitation of patients after cataract surgery using multifocal intramuscular 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.
- Therapeutic action of anti-VEGF in macular oedema refractory to conventional treatments using bevacizumab in repeated intravitreal injections.

Active grants

- Buil, J. Randomized, open study of the efficacy, safety and tolerability of repeated doses of intravitreal bevacizumab in patients with refractory uveitic macular edema. Period: January 2009-February 2011. Expedient: EC08/00119.
- Buil, J. Development of a new 1.98 micron emitting thulium laser for medical-surgical applications. Period: October 2010-December 2010. Expedient: PI09/90048.

Scientific production

\*TIF: 2.942 \*\*MIF: 2.942

## INDEXED PUBLICATIONS

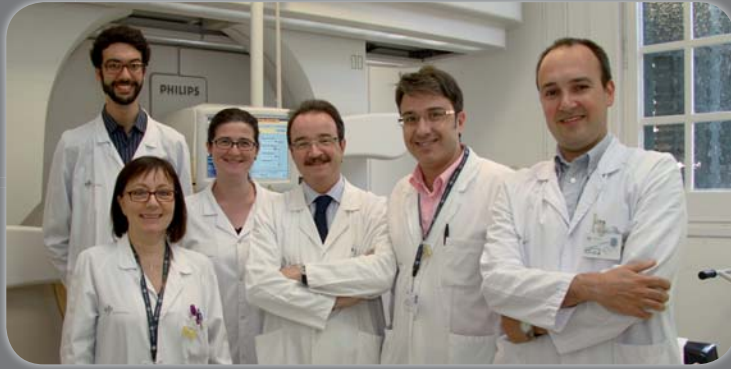
01 Vela J.I., Andreu D., Diaz-Cascajosa J., Buil J.A. Intra-ocular lens dislocation after whole-body vibration. J. Cataract. Refract. Surg.; 36(10):1790-1791  
**IF: 2.942**

\* Total Impact Factor  
 \*\*Mean Impact Factor



# Nuclear Medicine

TEAM



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Albert Flotats HSCSP

Main lines of research

**Oncology:**

- Design of new diagnostic methods based on identifying and visualizing molecular targets from metabolic mechanisms, receptor systems, hypoxia, angiogenesis and apoptosis.
- Development of new applications for sentinel ganglion and radio-guided 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 and determining applications.

**Functional neuroimaging:**

- Development of new functional imaging methods for evaluating neurodegenerative diseases whether or not they involve dementia (Parkinson, Parkinson-Plus, Alzheimer and DCL).
- Dopaminergic system studies using IBZM and Datscan.

Challenges

Introduce new technologies to clinical research. Imaging techniques are evolving very rapidly towards multimodal systems that integrate biological, molecular, anatomical and functional information in a single examination. The group aims to include these technologies, mainly PET/CT and PET/MR, in its own and the hospital's research activities.

**New molecular imaging techniques:**

Date the group has developed pre-clinical and clinical molecular imaging models using SPECT and conventional nuclear medicine technologies. In the next 5 years, the group plans to develop new hybrid molecular imaging technologies, mainly PET/CT and PET/MR.

**PET imaging biomarkers:**

The group uses radioactive tracers to view in vivo diagnostic and therapeutic targets. In the next 5 years, the group plans to develop new PET radioactive tracers to be used as biomarkers in new imaging techniques.



## Active grants

- Carrió, I. Development of a high-resolution Anger camera for diagnosis and staging of cancer diseases based on state of the art detector technology (HI-CAM). Period: March 2007-February 2010. Expedient: 06/LSHC-CT037737.
- Flotats, A. EVINCI: Evaluation of Integrated Cardiac Imaging for the Detection and Characterization of ischaemic heart disease. 7th Framework Programme Health. Period: January 2009-December 2011. Expedient: 08/UE222915.

\*TIF: 47.2 \*\*MIF: 3.630

## Scientific production

## INDEXED PUBLICATIONS

- 01 Marquie Sayagues M., Da Silva Alves L., Molina-Porcel L., Alcolea Rodriguez D., Sala Matavera I., Sanchez-Saudinos M.B., Camacho Marti V., Estorch Cabrera M., Blesa Gonzalez R., Gomez-Isla T., Lleo Bisa A. 123I-MIBG myocardial scintigraphy in the diagnosis of Lewy body dementia. *Neurologia*; 25(7):414-421  
IF: 0.589
- 02 Carrio I. Editorial: Farewell to Anneliese Sand. *Eur. J. Nucl. Med. Mol. Imaging*; 37(9):1815  
IF: 5.036
- 03 Flotats A., Carrio I. Emerging role of nuclear cardiology in heart failure. *Q. J. Nucl. Med. Mol. Imag*; 54(2):201-212  
IF: 2.537
- 04 Estorch Cabrera M., Camacho Marti V., Artigas Guix C., Duch Renom J., Flotats Giralt A., Carrio Gasset I. Ga-67 citrate SPECT-CT of a giant renal cyst. *Rev. Esp. Med. Nucl.*; 29(5):268-269  
IF: 0.77
- 05 Flotats A., Carrio I., Agostini D., Le Guludec D., Marcassa C., Schaffers M., Somsen G.A., Unlu M., Verberne H.J. Proposal for standardization of 123I-metaiodobenzylguanidine (MIBG) cardiac sympathetic imaging by the EANM Cardiovascular Committee and the European Council of Nuclear Cardiology. *Eur. J. Nucl. Med. Mol. Imaging*; 37(9):1802-1812  
IF: 5.036
- 06 Camacho V., Rodriguez-Revuelto A., Flotats A., Duch J., Artigas C., Carrio I., Estorch M. Skin metastasis of follicular thyroid carcinoma. *Eur. J. Nucl. Med. Mol. Imaging*; 37(6):1237  
IF: 5.036
- 07 Fernandez A., Duch J., Flotats A., Camacho V., Estorch M., Carrio I. CT-PET and evaluation of therapy response. Is the size really important? *Rev. Esp. Med. Nucl.*; 29(4):184-188  
IF: 0.77
- 08 Carrio I. The Spanish Journal of Nuclear Medicine enters the competitive scene of global scientific communication. *Rev. Esp. Med. Nucl.*; 29(5):229  
IF: 0.77
- 09 Carrio I., Flotats A. Cardiac sympathetic imaging with mIBG: A tool for better assessment of the diabetic heart. *Eur. J. Nucl. Med. Mol. Imaging*; 37(9):1696-1697  
IF: 5.036
- 10 Carrio I. Expanding the scope of EJNMMI in the era of electronic publishing. *Eur. J. Nucl. Med. Mol. Imaging*; 37(12):2229-2230  
IF: 5.036
- 11 Carrio I., Cowie M.R., Yamazaki J., Udelson J., Camici P.G. Cardiac Sympathetic Imaging With mIBG in Heart Failure. *JACC-Cardiovasc. Imag.*; 3(1):92-100  
IF: 5.528
- 12 Marwick T.H., Raman S.V., Carri I., Bax J.J. Recent developments in heart failure imaging. *JACC-Cardiovasc. Imag.*; 3(4):429-439  
IF: 5.528
- 13 Flotats A., Carri I. Is cardiac autonomic neuropathy the basis of nonischemic diabetic cardiomyopathy? *JACC-Cardiovasc. Imag.*; 3(12):1216-1218  
IF: 5.528

\* Total Impact Factor  
\*\*Mean Impact Factor





# Intensive Medicine

TEAM



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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.
- **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.
- Obtain private funding to conduct initial studies and continue research in any of the research areas listed below.
- **New molecular imaging techniques:**  
 Date the group has developed pre-clinical and clinical molecular imaging models using SPECT and conventional nuclear medicine technologies. In the next 5 years, the group plans to develop new hybrid molecular imaging technologies, mainly PET/CT and PET/MR.
- **PET imaging biomarkers:**  
 The group uses radioactive tracers to view in vivo diagnostic and therapeutic targets. In the next 5 years, the group plans to develop new PET radioactive tracers to be used as biomarkers in new imaging techniques.



## INDEXED PUBLICATIONS

- 01** Brochard L., Maggiore S.M., Richard J.-C.M., Abroug F., Diehl J.L., Antonelli M., Sauder P., Mancebo J., Ferrer M., Lellouche F., Lecourt L., Beduneau G. A multicenter, randomized trial of noninvasive ventilation with helium-oxygen mixture in exacerbations of chronic obstructive lung disease. *Crit. Care Med.*; 38(1):145-151  
**IF: 6.254**
- 02** Iotti G.A., Polito A., Belliato M., Pasero D., Beduneau G., Wysocki M., Brunner J.X., Braschi A., Brochard L., Mancebo J., Ranieri V.M., Richard J.-C.M., Arthur S. Slutsky Adaptive support ventilation versus conventional ventilation for total ventilatory support in acute respiratory failure. *Intensive Care Med.*; 36(8):1371-1379  
**IF: 4.996**
- 03** Rodriguez Lopez M., Roglan Piqueras A. Early diagnosis of acute renal failure [Diagnóstico precoz del fracaso renal agudo]. *Med. Intensiv.*; 34(5):291-293  
**IF: 1.496**
- 04** Alvarez-Lerma F., Mariscal F., Quintana E., Rialp G., Diaz-Reganon J., Perez San Jose M.J., Alvarez-Sanchez B., Lopez F., Carrasco N., Nolla J., Martinez F., Nieto M., De La Calle B., Gutierrez P., Solillo J.C., Blanco C., Puente T., Escorsell A., Castro P., Aragon C., Lander A., Pinilla C., Gonzalez F.J., Maillo L., Moreno M., Cisneros C., Garcia R.M., Blanco A., De La Torre M.V., Navarro A., Mesalles E., Gomez J., Caceres J.J., Santana N., Garcia J., Nicolas-Francis S., Casado R., Sanduende Y., Anton J.L., Ballesteros J.C., Medina P.J. Impact of the administration of liposomal amphotericin B in patients with renal function impairment at initiation of treatment. *J. Chemother.*; 22(4):285-287  
**IF: 1.145**
- 05** Cabello B., Thille A.W., Roche-Campo F., Brochard L., Gomez F.J., Mancebo J. Physiological comparison of three spontaneous breathing trials in difficult-to-wean patients. *Intensive Care Med.*; 36(7):1171-1179  
**IF: 4.996**
- 06** Carreras-Gonzalez E., Marruecos-Sant L. Pro general hospital. *Med. Intensiv.*; 34(3):194-197  
**IF: 1.496**
- 07** Gattinoni L., Carlesso E., Taccone P., Polli F., Guerin C., Mancebo J. Prone positioning improves survival in severe ARDS: A pathophysiologic review and individual patient meta-analysis. *Minerva Anestesiol.*; 76(6):448-454  
**IF: 2.581**
- 08** Sud S., Friedrich J.O., Taccone P., Polli F., Adhikari N.K.J., Latini R., Pesenti A., Guerin C., Mancebo J., Curley M.A.Q., Fernandez R., Chan M.-C., Beuret P., Voggenreiter G., Sud M., Tognoni G., Gattinoni L. Prone ventilation reduces mortality in patients with acute respiratory failure and severe hypoxemia: Systematic review and meta-analysis. *Intensive Care Med.*; 36(4):585-599  
**IF: 4.996**
- 09** Azoulay E., Mancebo J., Brochard L. Surviving the night in the ICU: Who needs senior intensivists? *Am. J. Respir. Crit. Care Med.*; 182(3):293-294  
**IF: 10.191**
- 10** Antonelli M., Azoulay E., Bonten M., Chastre J., Citerio G., Conti G., De Backer D., Lemaire F., Gerlach H., Hedenstierna G., Joannidis M., MacRae D., Mancebo J., Maggiore S.M., Mebazaa A., Preiser J.-C., Pugin J., Wernerman J., Zhang H. Year in review in intensive care medicine 2009: I. Pneumonia and infections, sepsis, outcome, acute renal failure and acid base, nutrition and glycaemic control. *Intensive Care Med.*; 36(2):196-209  
**IF: 4.996**
- 11** Antonelli M., Azoulay E., Bonten M., Chastre J., Citerio G., Conti G., De Backer D., Lemaire F., Gerlach H., Hedenstierna G., Joannidis M., MacRae D., Mancebo J., Maggiore S.M., Mebazaa A., Preiser J.-C., Pugin J., Wernerman J., Zhang H. Year in review in Intensive Care Medicine 2009: II. Neurology, cardiovascular, experimental, pharmacology and sedation, communication and teaching. *Intensive Care Med.*; 36(3):412-427  
**IF: 4.996**
- 12** Antonelli M., Azoulay E., Bonten M., Chastre J., Citerio G., Conti G., De Backer D., Lemaire F., Gerlach H., Hedenstierna G., Joannidis M., MacRae D., Mancebo J., Maggiore S.M., Mebazaa A., Preiser J.-C., Pugin J., Wernerman J., Zhang H. Year in review in intensive care medicine 2009. Part III: Mechanical ventilation, acute lung injury and respiratory distress syndrome, pediatrics, ethics, and miscellanea. *Intensive Care Med.*; 36(4):567-584  
**IF: 4.996**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Pharmacy

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Ainhoa Rodríguez-Arias IR-HSCSP  
Amelia Romero IR-HSCSP

Main lines of research

- Pharmaceutical care.
- Artificial nutrition.
- Oncohaematology.
- Independent clinical trials.

Challenges

- Evaluate the impact on effectiveness and safety of pharmacological treatments in different pharmaceutical care programmes: clinical pharmacokinetics, health education for outpatients, medicine reconciliation and identification and prevention of medication-related problems.
- Evaluate the impact of artificial nutrition on the clinical evolution of patients.
- Study the stability of cytostatics in different conditions of use.
- Predict response to anti-tumour treatment in a number of tumoural processes.
- Develop focal adhesion inhibitors, e.g., antitumour agents.
- Actively cooperate in independent clinical trials performed in the Hospital de Sant Pau.

\*TIF: 5.224 \*\*MIF: 5.224

Awards

Third Prize of the 16th Seminar of the Catalan Clinical Pharmacy Society for Masip M., Juanes A., Tuneu L., Mangués M.A. Medication reconciliation at a tertiary hospital: seamless pharmacotherapy.

Scientific production

INDEXED PUBLICATIONS

- 01 Cespedes M.V., Larriba M.J., Pavon M.A., Alamo P., Casanova I., Parreno M., Feliu A., Sancho F.J., Munoz A., Mangués R. Site-dependent E-cadherin cleavage and nuclear translocation in a metastatic colorectal cancer model. *Am. J. Pathol.*; 177(4):2067-2079  
IF: 5.224

\* Total Impact Factor  
\*\* Mean Impact Factor



# Dermatology

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Eulàlia Baselga	HSCSP	Esther Serra	HSCSP
Joan Dalmau	HSCSP	Eva Vilarrasa	HSCSP
Joan Ramon Garcés	HSCSP		

**Technicians**  
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Main lines of research

- New psoriasis treatments: efficacy study of Enbrel at different doses.
- Medical treatment options for vascular tumours.
- Psychopathological studies of patients with chronic dermatological disorders.

Challenges

Conduct studies on quality of life for patient with dermatological disorders.

\*TIF: 54.010 \*\*MIF: 3.600

Scientific production

## INDEXED PUBLICATIONS

- |  |  |  |
|--|--|--|
| <p><b>01</b> Development and validation of a questionnaire on 'Satisfaction with dermatological treatment of hand eczema' (DermaSat) 2010. Health Qual. Life Outcomes; 8<br/><b>IF: 1.86</b></p> <p><b>02</b> Acquired bullous dermatosis associated with IgA multiple myeloma: A case report 2010. J. Cutan. Pathol.; 37(11):1174-1177<br/><b>IF: 1.744</b></p> <p><b>03</b> Treatment of acrodermatitis continua of Hallopeau with TNF-blocking agents: Case report and review 2010. Dermatology; 220(2):154-158<br/><b>IF: 2.714</b></p> <p><b>04</b> Treatment of psoriasis with anti-</p> | <p>TNF drugs during pregnancy: Case report and review of the literature 2010. Dermatology; 220(1):71-76<br/><b>IF: 2.714</b></p> <p><b>05</b> Prospective study of spinal anomalies in children with infantile hemangiomas of the lumbosacral skin 2010. J. Pediatr.; 157(5):789-794<br/><b>IF: 4.042</b></p> <p><b>06</b> Risk for PHACE syndrome in infants with large facial hemangiomas 2010. Pediatrics; 126(2):e418-e426<br/><b>IF: 5.391</b></p> <p><b>07</b> Hereditary cutaneomucosal venous malformations are caused by TIE2 mutations with widely variable hyper-phosphorylating effects 2010. Eur. J. Hum. Genet.;</p> | <p>18(4):414-420<br/><b>IF: 4.38</b></p> <p><b>08</b> EADV preceptorship: Advances in dermatology 2010. J. Eur. Acad. Dermatol. Venereol.; 24(SUPPL. 5):2-24<br/><b>IF: 3.309</b></p> <p><b>09</b> Psoriasis and systemic inflammatory diseases: Potential mechanistic links between skin disease and co-morbid conditions 2010. J. Invest. Dermatol.; 130(7):1785-1796<br/><b>IF: 6.27</b></p> <p><b>10</b> Treatment of acrodermatitis continua of Hallopeau with TNF-blocking agents: Case report and review 2010. Dermatology; 220(2):154-158<br/><b>IF: 2.714</b></p> |
|--|--|--|


**Scientific production**

- 11** Treatment of psoriasis with anti-TNF drugs during pregnancy: Case report and review of the literature 2010. *Dermatology*; 220(1):71-76  
**IF: 2.714**
- 12** Multiple genetic copy number alterations in oral squamous cell carcinoma: Study of MYC, TP53, CCDN1, EGFR and ERBB2 status in primary and metastatic tumours 2010. *Br. J. Dermatol.*; 163(5):1028-1035  
**IF: 4.351**
- 13** Grover disease: A reappraisal of histopathological diagnostic criteria in 120 cases 2010. *Am. J. Dermatopathol.*; 32(6):541-549  
**IF: 1.263**
- 14** Folliculotropic mycosis fungoides: Clinicopathological features and outcome in a series of 20 cases 2010. *J. Am. Acad. Dermatol.*; 62(3):418-426  
**IF: 4.274**
- 15** Oligonucleotide array-cgh identifies genomic subgroups and prognostic markers for tumor stage mycosis fungoides 2010. *J. Invest. Dermatol.* ; 130(4):1126-1135  
**IF: 6.27**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Anaesthesiology

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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.
- Systematic review of intraoperative active warming systems.

**Rational use of perioperative blood products:**

- Usefulness of thromboelastography in postoperative bleeding in cardiac surgery.
- Critical evaluation of the reliability of point-of-care systems in the management of perioperative blood count.

**Perioperative medicine:**

- VISION Study: Evaluation of vascular complications in patients undergoing major non-cardiac surgery.
- POISE Study I: Clinical trial of metoprolol versus placebo in patients scheduled for non-cardiac

surgery with moderate or high risk of experiencing perioperative cardiac events.

- POISE Study II: Factorial clinical trial of clonidine and aspirin in patients undergoing non-cardiac surgery with moderate or high risk of experiencing perioperative cardiac events.
- GLUCOVISION Study: Evaluation of glucose as a predictor of vascular events in patients undergoing non-cardiac surgery.
- Systematic review of intraoperative active warming systems.
- ECT: Anaesthetic alternatives to enhance therapeutic effect.

**New health service delivery systems:**

- Bronchial cryobiopsies.
- Professional team preoperative evaluations.

**Physiology, pharmacology and anaesthetic techniques:**

- Intraoperative respiratory physiology.

- Efficacy and safety of levosimendan in postoperative refractory heart failure.

**Acute and chronic pain (neuroscience research group):**

- Stride Study (E05-CL-3001). Open arm multicentre study of repeated administration of Qutenza for the treatment of peripheral neuropathic pain.
- Evaluation of the effectiveness, safety and tolerability of extended-release tapentadol versus a combination of extended-release tapentadol and pregabalin in patients with severe chronic lower back pain with a neuropathic pain component (KF5503/58).
- Application of high-field MRI and its analysis tools to the evaluation of brain alterations in patients with chronic pain compared to acute pain and a control group (PI08/0678).



### Challenges

- Critical analysis of new clinical technologies.
- Rationalization of perioperative transfusions.
- Perioperative medicine.
- Development of new health service systems.
- Clinical and preclinical research into physiology, pharmacology and anaesthetic/analgesic techniques.

### Awards

Best Article Award for Transbronchial lung biopsy using cryoprobes. Arch Bronconeumol; 46(3):111-115.

**\*TIF: 13.628 \*\*MIF: 3.407**

### Scientific production

#### INDEXED PUBLICATIONS

- 01** Pajares V., Torrego A., Puzo C., Lerma E., Gil De Bernabe M.A., Franquet T. Transbronchial lung biopsy using cryoprobes. Arch Bronconeumol; 46(3):111-115  
**IF: 1.438**
- 02** Canet J., Gallart L., Gomar C., Paluzie G., Valles J., Castillo J., Sabate S., Mazo V., Briones Z., Sanchis J., the ARISCAT group (col. Moral M.V.). Prediction of postoperative pulmonary complications in a population-based surgical cohort. Anesthesiology; 113(6):1338-1350  
**IF: 5.486**
- 03** Valles J., Guilera M., Briones Z., Gomar C., Canet J., Alonso J., the ARISCAT group (col. Campos J.M.). Validity of the spanish 8-item short-form generic health-related quality-of-life questionnaire in surgical patients: A population-based study. Anesthesiology; 112(5):1164-1174  
**IF: 5.486**
- 04** De Quintana-Schmidt C., Casajuana-Garreta E., Molet-Teixido J., Garcia-Bach M., Roig C., Clavel-Laria P., Rodriguez-Rodriguez R., Oliver-Abadal B., Bartumeus-Jene F. Stimulation of the occipital nerve in the treatment of drug-resistant cluster headache. Rev. Neurologia; 51(1):19-26  
**IF: 1.218**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Anaesthesiology (Pain and Neurosciences)

TEAM



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**Coordinator**

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Main lines of research

- Involvement of brain areas and release of substances in chronic pain (in conjunction with HSCSP neuroradiology unit and the Autonomous University of Barcelona.
- Adverse effects of epidural steroids administered for lumbar spine pathologies.
- Effectiveness of topical long-term treatment with high-dose capsaicin of peripheral neuropathic pain.
- Sleep disturbance on initiating systemic opioid treatment in patients with severe chronic pain and altered sleep patterns.

Active grants

Català, E. Application of high-field MRI and its analysis tools to evaluating brain alterations in patients with chronic pain compared to acute pain and a control group. Period: January 2009-December 2011. Expedient: PI08/0678.

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.
- Determine if the intensity of chronic neuropathic pain assessed by the patient is correlated with the patient's psychopathology, essentially, anxiety, depression and catastrophizing.
- Determine the duration and intensity of undesirable effects of epidural steroids and establish early diagnostic criteria.
- Determine the profile of patients who would benefit from treatment with major systemic opioids in relation to night rest and establish the recommendable opioid.





# Palliative Care

## TEAM



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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 and euthanasia.
- Psychosocial care for patients and families: adaptation to the terminal situation, grief, spiritual needs.
- Training in palliative care: training needs and outcomes.

## 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.

**\*TIF: 4.053 \*\*MIF: 2.026**

## Scientific production

### INDEXED PUBLICATIONS

- 01 Gomez-Batiste X, Porta-Sales J, Espinosa-Rojas J, Pascual-Lopez A, Tuca A, Rodriguez J. Effectiveness of palliative care services in symptom control of patients with advanced terminal cancer: A Spanish, multicenter, prospective, quasi-experimental, pre-post study. *J. Pain Symptom Manage.*; 40(5):652-660  
**IF: 2.64**
- 02 Tuca A, Martinez E, Guell E, Gomez Batiste X. Malignant bowel obstruction. *Med. Clin.*; 135(8):375-381  
**IF: 1.413**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Cardiac Imaging

TEAM



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Main lines of research

- Participation in the development of clinical follow-up databases that determine the diagnostic value and cost-benefit of new cardiac imaging techniques.
- Computer modelling of electromechanical activation and cardiac ventricular function.

**Non-invasive multidetector CT coronary angiography:**

- Validation of the technique.
- Development of software to characterize and quantify coronary artery lesions.
- Studies of clinical usefulness in primary prevention.

**Cardiac Magnetic Resonance Imaging:**

- Quantification of myocardial perfusion in ischaemic heart disease.
- Myocardial tagging study of heart mechanics.
- Optimization of diffusion tensor sequences for the identification of myocardial fibers.
- Development of 4D sequences for viewing intra-vascular flow direction.

Challenges

- Non-invasive multidetector CT coronary angiography: to consolidate use in clinical practice by improving viewing and quantification tools that confirm its diagnostic value for cardiology.
- Cardiac Magnetic Resonance Imaging: to improve physiopathological knowledge of ischaemic heart disease, cardiomyopathies and heart failure.
- To explore and understand heart mechanics and to study ventricular function.
- To design ventricular electro-mechanical computer-models.
- To improve cardiac imaging diagnostic techniques for a complete non-invasive assessment of heart diseases.

Active grants

Carreras, F. Advanced information technologies for the healthcare sector (CARE4ME. Cooperative Advanced Research for Medical Efficiency). Period: January 2010-February 2011. Expedient: TSI-020400-2009-83.



## INDEXED PUBLICATIONS

- 01 Cabello B., Borrás X., Carreras F., Thomas B., Leta R., Pons-Llado G. Improvement in the measurement technique of pulmonary artery pressure by Doppler echocardiography with contrast in chronic obstructive pulmonary disease. *Med. Intensiv.*; 34(8):506-512  
IF: 1.496
- 02 Li C.H., Carreras F., Leta R., Carbal-leira L., Pujadas S., Pons-Llado G. Mechanical left ventricular dyssyn-chrony detection by endocardium

displacement analysis with 3D speckle tracking technology. *Int. J. Cardiovasc. Imaging*; 26(8):867-870  
IF: 2.539

- 03 Pujadas S., Vidal-Perez R., Hidalgo A., Leta R., Carreras F., Barros A., Bayes-Genis A., Subirana M.T., Pons-Llado G. Correlation between myocardial fibrosis and the occurrence of atrial fibrillation in hypertrophic cardiomyopathy: A cardiac magnetic resonance imaging study. *Eur. J. Radiol.*; 75(2):e88-e91  
IF: 2.941

\*TIF: 10.521 \*\*MIF: 2.630

- 04 Garcia-Barnes J., Gil D., Badiella L., Hernandez-Sabate A., Carreras F., Pujades S., Marti E. A normalized framework for the design of feature spaces assessing the left ventricular function. *IEEE Trans. Med. Imaging*; 29(3):733-745  
IF: 3.545

\* Total Impact Factor  
\*\* Mean Impact Factor



# Plastic Surgery

TEAM



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Main lines of research

### Perforator microsurgery:

- Application of imaging techniques to preoperative studies of perforators using MRI without contrast (in collaboration with Clínica Creu Blanca radiology department).
- Anatomical studies of the variability of perforators in the following regions: internal mammary artery, descending genicular artery, inferior epigastric system and internal superficial circumflex system (in collaboration with the University of Barcelona human anatomy department).
- Locating new donor anatomical areas for morphological and functional reconstruction of oncology post-surgery defects.

### Lymphoedema:

- Study and characterization of the anatomy and pathophysiology of the superficial and deep lymphatic system.
- Preoperative magnetic resonance study of the lymphatic system in order to define surgical indication patterns.
- Preoperative magnetic resonance study of the surgical effectiveness of lymphatic-venous anastomosis.
- Lymphogenesis study in experimental animals (sheep) after vascularized lymph node tissue transplantation (popliteal lymph nodes).

### Regenerative surgery:

- Industry-funded research project (BIOMET): Application of growth factors in tissue regeneration in irradiated head and neck surgery.
- Development of regenerative lymphatic system surgery in the context of primary lymphoedema through specific lymphatic system growth factors (VEGF-C and VEGF-D).

### Breast cancer surgery:

Industry-funded clinical trials (Allergan Medical, USA). SURE-002 study of Serisc scaffold used in immediate breast reconstructive surgery in a single surgical period.

Challenges

- Consolidation and optimization of preoperative management techniques for locating perforating vessels suitable for each microsurgical flap.
- Development of research into the surgical treatment of both primary and secondary lymphoedema.
- Development of research into

- preventive surgery of secondary lymphoedema in breast cancer by total breast anatomy restoration (TBAR).
- Development of research into regenerative surgery using specific growth factors.
- Consolidation of facial paralysis functional surgical reconstruction

- by microsurgical transfer of innervated flaps.
- Development of multidisciplinary protocols for the treatment of vascular malformations.
- Collaboration with other research groups both in the HSCSP and internationally to establish a multidisciplinary research network.

**\*TIF: 1.66 \*\*MIF: 0.83**

Scientific production

**INDEXED PUBLICATIONS**

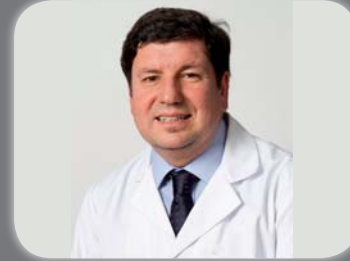
- 01 Masia J., Kosutic D., Clavero J.A., Larranaga J., Vives L., Pons G. Preoperative computed tomographic angiogram for deep inferior epigastric artery perforator flap breast reconstruction. J. Reconstr. Microsurg.; 26(1):21-28  
**IF: 0.83**
- 02 Masia J., Kosutic D., Cervelli D., Clavero J.A., Monill J.M., Pons G. In search of the ideal method in perforator mapping: Non-contrast magnetic resonance imaging. J. Reconstr. Microsurg.; 26(1):29-35  
**IF: 0.83**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Andrology

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Main lines of research

**Infertility and preimplantation genetic diagnosis:**

- We are presently developing a project on the genetic causes of cryptorchidism in humans. Besides, we have been awarded a FIS grant for a project on genetic alterations of the Y chromosome. Results from both projects may have clinical implications. Members of the service also collaborate in external FIS projects (with the University of Barcelona, Vall d'Hebron) studying genetic anomalies, spermatogenesis and preimplantation genetic diagnosis.

**Male sexual dysfunction:**

- As a referral centre it is essential to extend investigation into the mechanisms that trigger endothelial damage and erectile dysfunction so as to develop new treatment strategies.
- We are presently developing an animal model of erectile dysfunction (cavernous nerve injury in rats). This will later allow research on the mechanisms of endothelial damage and erectile dysfunction in different situations, substances and/or surgeries, with a focus on identifying preventive strategies and transferring results to research in humans.

Challenges

The strategic plan is to develop basic and clinical research projects in andrology for the period 2009-2012, with emphasis on translational research to the clinical arena.

Active grants

Krausz, C. Gene dosage of the AZFc region of chromosome Y: clinical implications and spermatozoid-gene expression profile. Period: January 2009-December 2011. Expedient: PI 08/1138.

Awards

- Best Video Award at the 26th Conference of the Iberoamerican Pediatric Urology Society (SIUP) for C. Palma, J. Sarquella, J. Masià, G. Pons, D. García, J. Caffaratti, E. Ruiz-Castañé. Reconstructive surgery for severe penile inadequacy: phalloplasty with a free forearm flap in bladder exstrophy.
- Gamete Analytics Award for Top Quality Research by a Trainee of the International Symposium on Genetic of Male Infertility for D. Lo Giacco, E. Ars, Ll. Bassas, O. Rajmil, JM. Garat, E. Ruiz-Castañé, C. Krausz. Genetic risk factors in non syndromic cryptorchidism: the T222P mutation of RXFP2 and the (TA)<sub>n</sub> polymorphism of ESR1 in Mediterranean populations.

\*TIF: 10.62 \*\*MIF: 3.54

Scientific production

**INDEXED PUBLICATIONS**

- Aston K.I., Krausz C., Laface I., Ruiz-Castane E., Carrell D.T. Evaluation of 172 candidate polymorphisms for association with oligozoospermia or azoospermia in a large cohort of men of European descent. Hum. Reprod.; 25(6):1383-1397  
IF: 4.357
- Havasi V., Rowe S.M., Kolettis P.N., Dayangac D., Ahin A., Grangeia A., Carvalho F., Barros A., Sousa M., Bassas L., Casals T,

Sorscher E.J. Association of cystic fibrosis genetic modifiers with congenital bilateral absence of the vas deferens. Fertil. Steril.; 94(6):2122-2127  
IF: 3.122

- Terribas E., Bonache S., Garcia-Arevalo M., Sanchez J., Franco E., Bassas L., Larriba S. Changes in the expression profile of the meiosis-involved mismatch repair genes in impaired human spermatogenesis. J. Androl.; 31(4):346-357  
IF: 3.141

\* Total Impact Factor  
\*\* Mean Impact Factor



# Urology

## TEAM



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## Main lines of research

### Tissue engineering:

Application in urological oncology and congenital urogenital malformations. In 2002 we began this line of research focusing on vesicular reconstruction. The endpoints have high clinical translational potential as the objective is organ procurement for genitourinary reconstruction, especially in urology pediatrics.

### New techniques (surgical techniques and healthcare products):

- Application in urological oncology and benign urogenital pathology (e.g. incontinence, benign hyperplasia of the prostate, lithiasis).
- The Puigvert Foundation is a referral centre for treatment of urological disorders. It performs a high number of studies, particularly at a clinical level, aiming to determine the best techniques for diagnosis and treatment of these disorders.

### Genetics (diagnostic and prognostic markers):

Application in urological oncology. In 2003, when the molecular biology lab was set up, the objective was to identify diagnostic and prognostic markers of urological cancers. Results from this line of study led to a patent in cancer of the bladder. We are now developing studies on the prostate. Besides our own work we collaborate with other centres and universities and with biotechnology labs (Progenika, Oryzon, Neocodex) to develop new diagnostic and prognostic markers in blood, urine and tissues that will optimize patient management in oncology.

## Challenges

The Service of Urology has a multidisciplinary team of professionals who develop translational research in the field of diagnosis and treatment of urological disorders. To further our knowledge about kidney disorders and thereby improve health care for patients 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 inside and outside our centre.



## Awards

- Best Video Award at the 26th Conference of the Iberoamerican Pediatric Urology Society (SIUP) for C. Palma, J. Sarquella, J. Masià, G. Pons, D. García, J. Caffaratti, E. Ruiz-Castañé. Reconstructive surgery for severe penile inadequacy: phalloplasty with a free forearm flap in bladder exstrophy.
- Best Video Award at the 26th Conference of the Iberoamerican Pediatric Urology Society (SIUP) for A. Bujons, J. Caffaratti, A. Domínguez, L. Gausa, G. Doñate, J.M. Garat. Radical prostatectomy in a child of three years.
- Rafael Gutiérrez del Pozo Award for the Best Surgery Audiovisual at the 75th National Urology Conference, for A. Rosales, J. Salvador, M. Montlleó, J. Caffaratti, J. Ponce de León, A. Breda, H. Villavicencio. Uretero-ureterostomy in transplanted urethral stricture.
- Actas Urológicas Best Paper Award 2009-Scientific and Clinical Letters Section, of the 75th National Urology Conference, for V. Monllau, A. Rosales, F. Rodríguez, S. Esquena, H. Villavicencio. Partial laparoscopic nephrectomy in a kidney transplant.
- Rising Stars in Urology Best Poster Award, second prize for E. Cordeiro, J. Palou, O. Rodríguez, F. Algaba, A. Rosales, R. Jiménez, J. Santillana, F. Millán, H. Villavicencio. Disease specific survival is not related to stage in patients with positive lymphovascular invasion in cystectomy specimens.
- 8th European Urology Residents Education Programme (EUREP) HOT (Hands-on-Training) Olympus Award for follow-up basic laparoscopic training, for E. Cordeiro at the Olympus Medial Training Centre in Hamburg.

\*TIF:100.133 \*\*MIF: 3.576

## Scientific production

## INDEXED PUBLICATIONS

- 01 Palou J. Advances in Prostate Cancer Management: The First Once-Yearly Luteinising Hormone-Releasing Hormone Agonist. *Eur. Urol. Suppl.*; 9(8):693-694  
IF: 2.139
- 02 Villavicencio H., Rodriguez Faba O., Palou J., Gausa L., Algaba F., Marcuello E. Bladder preservation strategy based on combined therapy in patients with muscle-invasive bladder cancer: Management and results at long-term follow-up. *Urol.Int.*; 85(3):281-286  
IF: 0.924
- 03 del Rey J., Prat E., Ponsa I., Lloreta J., Gelabert A., Algaba F., Camps J., Miro R. Centrosome clustering and cyclin D1 gene amplification in double minutes are common events in chromosomal unstable bladder tumors. *BMC Cancer*; 10  
IF: 3.153
- 04 Prat E., del Rey J., Ponsa I., Nadal M., Camps J., Plaja A., Campillo M., Algaba F., Gelabert A., Miro R. Comparative Genomic Hybridization Analysis Reveals New Different Subgroups in Early-stage Bladder Tumors. *Urology*; 75(2):347-355  
IF: 2.334
- 05 Esquena S., Sanchez-Martin F.M., Palou Redorta J., Rosales Bordes A., Rodriguez-Faba O., Villavicencio Mavrich H. Critical review of use of radiation as initial treatment for localized prostate cancer. *Actas Urol. Esp.*; 34(1):6-9  
IF: 0.274
- 06 Chaux A., Velazquez E.F., Algaba F., Ayala G., Cubilla A.L. Developments in the pathology of penile squamous cell carcinomas. *Urology*; 76(SUPPL. 2):S7-S14  
IF: 2.334
- 07 Ruppen I., Grau L., Orenes-Pinero E., Ashman K., Gil M., Algaba F., Bellmunt J., Sanchez-Carbayo M. Differential protein expression profiling by iTRAQ-two-dimensional LC-MS/MS of human bladder cancer EJ138 cells transfected with the metastasis suppressor KiSS-1 gene. *Mol. Cell. Proteomics*; 9(10):2276-2291  
IF: 8.354
- 08 Schito G.C., Gualco L., Naber K.G., Botto H., Palou J., Mazzei T., Marchese A. Do different susceptibility breakpoints affect the selection of antimicrobials for treatment of uncomplicated cystitis? *J. Chemother.*; 22(5):345-355  
IF: 1.145
- 09 Hayn M.H., Hellenthal N.J., Hussain A., Andrews P.E., Carpentier P., Castle E., Dasgupta P., Davis R., Thomas R., Khan S., Kibel A., Kim H., Manoharan M., Menon M., Motttrie A., Ornstein D., Peabody J., Pruthi R., Palou Redorta J., Vira M., Schanne F., Stricker H., Wiklund P., Wilding G., Guru K.A. Does previous robot-assisted radical prostatectomy experience affect outcomes at robot-assisted radical cystectomy? Results from the international robotic cystectomy consortium. *Urology*; 76(5):1111-1116  
IF: 2.334
- 10 Pizzocaro G., Algaba F., Horenblas S., Solsona E., Tana S., Van Der Poel H., Watkin N.A., European Association of Urology (EAU) Guidelines Group on Penile Cancer EAU penile cancer guidelines 2009. *Eur. Urol.*; 57(6):1002-1012  
IF: 8.843
- 11 Pena Gonzalez J.A., Pascual Queralt M., Salvador Bayarri J.T., Rosales Bordes A., Palou Redorta J., Villavicencio Mavrich H. Evolution of open versus laparoscopic/robotic surgery: 10 years of changes in urology. *Actas Urol. Esp.*; 34(3):223-231  
IF: 0.274
- 12 Canesin G., Gonzalez-Peramato P., Palou J., Urrutia M., Cordon-Cardo C., Sanchez-Carbayo M. Galectin-3 expression is associated with bladder cancer progression and clinical outcome. *Tumor Biol.*; 31(4):277-285  
IF: 2.026
- 13 Mengual L., Buset M., Ribal M.J., Ars E., Marin-Aguilera M., Fernandez M., Ingelmo-Torres M., Villavicencio H., Alcaraz A. Gene expression signature in urine for diagnosing and assessing aggressiveness of bladder urothelial carcinoma. *Clin. Cancer Res.*; 16(9):2624-2633  
IF: 7.338
- 14 Algaba F. Grading of urologic tumors: is it still useful? *Int. J. Surg. Pathol.*; 18(3 Suppl):1125-1175  
IF: 1.134
- 15 Algaba F., Montironi R. Impact of prostate cancer multifocality on its biology and treatment. *J. Endourol.*; 24(5):799-804  
IF: 1.729





- 16 Rodriguez Faba O., Breda A., Rosales A., Palou J., Algaba F., Maroto Rey P., Villavicencio H. Neoadjuvant temsirolimus effectiveness in downstaging advanced non-clear cell renal cell carcinoma. *Eur. Urol.*; 58(2):307-310  
**IF: 8.843**
- 17 Huguet J., Gaya J.M., Sabate S., Palou J., Villavicencio H. Radical cystectomy in patients with non-muscle invasive bladder cancer who fail BCG therapy. *Actas Urol. Esp.*; 34(1):63-70  
**IF: 0,274**
- 18 Algaba F. Rereading the renal cell tumors. *Int. J. Surg. Pathol.*; 18(3 Suppl):945-975  
**IF: 1.134**
- 19 Palou Redorta J., Gaya J.M., Breda A., Gausa L., Rodriguez O., Villavicencio H. Robotic Cystectomy Versus Open Cystectomy: Are We There Yet? *Eur. Urol. Suppl.*; 9(3):433-437  
**IF: 2.139**
- 20 Arce Terroba Y., Algaba-Arrea F., Villavicencio Maverich H. Segmental infarct of testicle: An infrequent pseudotumor. *Actas Urol. Esp.*; 34(2):194-200  
**IF: 0.274**
- 21 Orenes-Pinero E., Barderas R., Rico D., Casal J.I., Gonzalez-Pisano D., Navajo J., Algaba F., Piulats J.M., Sanchez-Carbayo M. Serum and tissue profiling in bladder cancer combining protein and tissue arrays. *J. Proteome Res.*; 9(1):164-173  
**IF: 5.46**
- 22 Hayn M.H., Hussain A., Mansour A.M., Andrews P.E., Carpentier P., Castle E., Dasgupta P., Rimington P., Thomas R., Khan S., Kibel A., Kim H., Manoharan M., Menon M., Motttrie A., Ornstein D., Peabody J., Pruthi R., Palou Redorta J., Richstone L., Schanne F., Stricker H., Wiklund P., Chandrasekhar R., Wilding G.E., Guru K.A. The learning curve of robot-assisted radical cystectomy: Results from the international robotic cystectomy consortium. *Eur. Urol.*; 58(2):197-202  
**IF: 8.843**
- 23 Lopez-Beltran A., Amin M.B., Oliveira P.S., Montironi R., Algaba F., McKeeney J.K., De Torres I., Mazerolles C., Wang M., Cheng L. Urothelial carcinoma of the bladder, lipid cell variant: Clinicopathologic findings and LOH analysis. *Am. J. Surg. Pathol.*; 34(3):371-376  
**IF: 4.106**
- 24 Carlos E., Fernando R.-E., Cristina G., Carlos B., Pedro A., Humberto V. A re-adjustable sling for female recurrent stress incontinence and sphincteric deficiency: Outcomes and complications in 125 patients using the Remeex sling system. *Neurourol. Urodyn.*; 29(8):1429-1432  
**IF: 2.903**
- 25 Hellenthal N.J., Hussain A., Andrews P.E., Carpentier P., Castle E., Dasgupta P., Kaouk J., Khan S., Kibel A., Kim H., Manoharan M., Menon M., Motttrie A., Ornstein D., Palou J., Peabody J., Pruthi R., Richstone L., Schanne F., Stricker H., Thomas R., Wiklund P., Wilding G., Guru K.A. Surgical Margin Status After Robot Assisted Radical Cystectomy: Results From the International Robotic Cystectomy Consortium. *J. Urol.*; 184(1):87-91  
**IF: 3.862**
- 26 Pena Gonzalez J.A., Pascual Queralt M., Salvador Bayarri J.T., Rosales Bordes A., Palou Redorta J., Villavicencio Mavrich H. Evolution of open versus laparoscopic/robotic surgery: 10 years of changes in urology. *Actas Urol. Esp.*; 34(3):223-231  
**IF: 0.274**
- 27 Rosales A., Salvador J.T., Urdaneta G., Patino D., Montlleo M., Esquena S., Caffaratti J., de Leon J.P., Guirado L., Villavicencio H. Laparoscopic Kidney Transplantation. *Eur. Urol.*; 57(1):164-167  
**IF: 8.843**
- 28 Witjes J.A., Redorta J.P., Jacqmin D., Sofras F., Malmstrom P.-U., Riedl C., Jocham D., Conti G., Montorsi F., Arentsen H.C., Zaak D., Mostafid A.H., Babjuk M. Hexaminolevulinate-Guided Fluorescence Cystoscopy in the Diagnosis and Follow-Up of Patients with Non-Muscle-Invasive Bladder Cancer: Review of the Evidence and Recommendations. *Eur. Urol.*; 57(4):607-614  
**IF: 8.843**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Radiation Oncology

TEAM



**Researchers**  
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Main lines of research

The Radiation Oncology Group's research is conducted on the premises of the Transnational Research Laboratory of the Catalan Oncology Institute (ICO)-IDIBELL under a framework agreement between the HSCSP and the ICO. The Main lines of research are:

- 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.

Challenges

- Establishment of relatively radioresistant cell lines compared with the parental cells from which they derive (by clonal selection).
- Determination of the resistant phenotype in cultures and xenografts.
- Determination of molecular radioresistance.
- Evaluation of the effect on carcinomas of SRC and HMG-CoA reductase inhibitors in combination with anti-EGFR.
- Explore signal transduction changes in EGFR-MAPK pathway and SRC-EGFR/SRC-STAT3 cooperation induced by SRC and HMG-CoA reductase inhibitors.

\*TIF: 7.414 \*\*MIF: 7.414

Scientific production

## INDEXED PUBLICATIONS

- 01 Pueyo G., Mesia R., Figueras A., Lozano A., Baro M., Vazquez S., Capella G., Balart J. Cetuximab may inhibit tumor growth and angiogenesis induced by ionizing radiation: A preclinical rationale for maintenance treatment after radiotherapy. *Oncologist*; 15(9):976-986  
IF: 7.414

\* Total Impact Factor  
\*\* Mean Impact Factor



# Locomotor System Research

## TEAM



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Ignasi Proubasta	HSCSP	Álex del Arco	HSCSP
José Carlos González	HSCSP	Óscar García	HSCSP
Ana Peiró	HSCSP	Isidre Gracia	HSCSP
		Laura Trullols	HSCSP

## Main lines of research

### Antiresorptives in orthopedic and trauma surgery

Effect of zoledronic acid (Aclasta) on periprosthetic 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 perthrochanteric 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.



## INDEXED PUBLICATIONS

- 01** Gonzalez-Lucena G., Gelber P.E., Pelfort X., Tey M., Monllau J.C. Meniscal allograft transplantation without bone blocks: A 5- to 8-year follow-up of 33 patients. *Arthroscopy*; 26(12):1633-1640+e214  
**IF: 3.317**
- 02** Gelber P.E., Reina F., Torres R., Monllau J.C. Effect of femoral tunnel length on the safety of anterior cruciate ligament graft fixation using cross-pin technique: A cadaveric study. *Am. J. Sports Med.*; 38(9):1877-1884  
**IF: 3.821**
- 03** Monllau J.C., Leal J., Voss C., Pelfort X., Tey M., Pavlovich R.I. Good outcome after meniscal repair using an all-inside suturing system in combination with high-frequency biostimulation. *Orthopedics*; 33(6)  
**IF: 1.098**
- 04** Gelber P.E., Reina F., Torres R., Pelfort X., Tey M., Monllau J.C. Anatomic Single-Bundle Anterior Cruciate Ligament Reconstruction From the Anteromedial Portal: Evaluation of Transverse Femoral Fixation in a Cadaveric Model. *Arthroscopy*; 26(5):651-657  
**IF: 3.317**
- 05** Martinez-Diaz S., Garcia-Giralt N., Lebourg M., Gomez-Tejedor J.A., Vila G., Caceres E., Benito P., Pradas M.M., Nogues X., Ribelles J.L., Monllau J.C. In vivo evaluation of 3-dimensional polycaprolactone scaffolds for cartilage repair in rabbits. *Am. J. Sports Med.*; 38(3):509-519  
**IF: 3.821**
- 06** Ruiz-Gaspa S., Blanch-Rubio J., Ciria-Recasens M., Monfort J., Tio L., Garcia-Giralt N., Nogues X., Monllau J.C., Carbonell-Abello J., Perez-Edo L. Reduced proliferation and osteocalcin expression in osteoblasts of male idiopathic osteoporosis. *Calcif. Tissue Int.*; 86(3):220-226  
**IF: 2.759**

**\*TIF: 18.133 \*\*MIF: 3.022**

\* Total Impact Factor  
\*\* Mean Impact Factor



# Multiple Sclerosis and Epilepsy Research

TEAM



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| Alejandro Martínez | IR-HSCSP |
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Main lines of research

- Neuropsychological impairment in patients with multiple sclerosis.
- Pharmacogenetics in epilepsy.
- Neuropsychological impairment in juvenile myoclonic epilepsy.

Challenges

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

Active grants

Querol, L. Río Hortega contract. Period: January 2010-January 2013. Expedient: Project CM09/00017.

\*TIF: 3.52 \*\*MIF: 1.76

Scientific production

INDEXED PUBLICATIONS

- Otero S., Batlle J., Bonaventura I., Brieva Ll., Bufill E., Cano A., Carmona O., Escartín A., Marco M., Moral E., Munteis E., Nos C., Pericot I., Perkal H., Ramio-Torrenta Ll., Ramo-Tello C., Saiz A., Sastre-Garriga J., Tintore M., Vaque J., Montalban X. Multiple sclerosis epidemiological situation update: Pertinence and set-up of a population based registry of new cases in Catalonia. Rev. Neurologia; 50(10):623-633  
IF: 1.218
- Ben-Menachem E., Gabbai A.A., Hufnagel A., Maia J., Almeida L., Soares-da-Silva P. Eslicarbazepine acetate as adjunctive therapy in adult patients with partial epilepsy. Epilepsy Res.; 89(2-3):278-285  
IF: 2.302

\* Total Impact Factor  
\*\* Mean Impact Factor



# Reproductive Health (Prenatal Diagnosis and Treatment)

TEAM



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Main lines  
of research

- Qualitative study of foetal motility by means of 2D ultrasound in foetuses with spinal muscular atrophy.
- Value of foetal nuchal translucency as a marker of neuromuscular diseases and other monogenic diseases.
- Utility of Doppler ultrasound of the umbilical artery during the second trimester as a discriminator of pregnancies at high risk of poor perinatal outcomes.
- Cut off 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 the HSCSP genetics department concerning possible early clinical manifestations detectable using 2D and 4D ultrasound in foetuses affected by genetic diseases, particularly neuromuscular disorders, given that HSCSP is a referral centre for a particular group of rare diseases.
- Early screening 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.



# Reproductive Health (Reproduction Endocrinology)

TEAM



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Main lines  
of research

### Hormonal alteration with reproductive and metabolic implications:

- Polycystic ovary syndrome is characterized by the frequent coexistence of alterations of the reproductive system and metabolic control of carbohydrates. This relationship determines changes in ovulation, given that insulin acts on the steroidogenic cells of the ovarian theca.

- The consequences of this situation ranges from androgenetic cutaneous manifestations at puberty (acne, hirsutism, etc.) to infertility, obesity, gestational diabetes and subsequent development of type 2 diabetes or metabolic syndrome.
- The working group headed by Dr. Espinós focuses on research into factors that promote these synergies and interventions that can positively alter evolution

### Disorders related to hypo-oestrogenism:

For some time the group has been active in clinical research (especially clinical trials) related to physiological hypo-oestrogenism in menopause and its consequences. It is currently finalizing a prospective randomized trial on the possible role of phytotherapy in menopausal symptoms in a multicentre study designed in collaboration with the Iberoamerican Cochrane Centre.

Challenges

### Hormonal alteration with reproductive and metabolic implications:

- The project to assess the impact of changes induced by exercise and diet on the results of in vitro fertilization opens new perspectives for identifying mediators between obesity and fertility control.
- The group has obtained a grant to coordinate a state wide multi-centre study on the impact of lifestyle on fertility, confirming the strength of metabolic-reproductive life-styles as a key directions of research into reproduction.
- One goal is to advance research

into study methodologies and incentives for patients to adopt healthy life styles and so strengthen the capacities of the group. Explored is the possibility of using tools developed for external and self-control of physical activity when assessing the degree of compliance of patients advised to include regular exercise in their weight loss programme.

- We also plan to continue with optimization programmes for controlled stimulation and multiple follicular development, the preservation of fertility in young cancer patients and the application of pre-implantation genetic diagnoses.

### Disorders related to hypo-oestrogenism:

Because of the ongoing ageing of the population, new fields for the study of hypo-oestrogenism are emerging. The increasing survival for oncological diseases in young people and preventive measures in families at risk of hormone-dependent cancers (especially preventive ovariectomy) opens new fields such as the preservation of fertility or hormone replacement in this type of patient.



\*TIF: 65.247 \*\*MIF: 16.311

## Scientific production

## INDEXED PUBLICATIONS

01 Espinos J.J., Calaf J., Estadella J., Checa M.A. Hirsutism scoring in polycystic ovary syndrome: Concordance between clinicians' and patients' self-scoring. *Fertil. Steril.*; 94(7):2815-2816  
IF: 3.122

02 Audi L., Fernandez-Cancio M., Carrascosa A., Andaluz P., Toran N., Piro C., Vilaro E., Vicens-Calvet E., Gussinye M., Albisu M.A., Yeste D., Clemente M., Hernandez De La Calle I., Del Campo M., Vendrell T., Blanco A., Martinez-Mora J., Granada M.L., Salinas I., Forn J., Calaf J., Angerri O., Martinez-Sopena M.J., Del Valle J., Garcia E., Gracia-

Bouthelie R., Lapunzina P., Mayayo E., Labarta J.I., Lledo G., Sanchez Del Pozo J., Arroyo J., Perez-Aytes A., Beneyto M., Segura A., Borrás V., Gabau E., Caimari M., Rodriguez A., Martinez-Aedo M.J., Carrera M., Castano L., Andrade M., Bermudez De La Vega J.A. Novel (60%) and recurrent (40%) androgen receptor gene mutations in a series of 59 patients with a 46,XY disorder of sex development. *J. Clin. Endocrinol. Metab.*; 95(4):1876-1888  
IF: 6.495

03 Cummings S.R., Ensrud K., Delmas P.D., LaCroix A.Z., Vukicevic S., Reid D.M., Goldstein S., Sriram U., Lee A., Thompson J., Armstrong R.A., Thompson D.D., Powles T., Zanch-

etta J., Kendler D., Neven P., Eastell R. (col. Calaf J.). Lasofoxifene in postmenopausal women with osteoporosis. *N. Engl. J. Med.*; 362(8):686-696  
IF: 53.484

04 Chico A., Saigi I., Garcia-Patterson A., Santos M.D., Adelantado J.M., Ginovart G., De Leiva A., Corcoy R. Glycemic control and perinatal outcomes of pregnancies complicated by type 1 diabetes: Influence of continuous subcutaneous insulin infusion and lispro insulin. *Diabetes Technol. Ther.*; 12(12):937-945  
IF: 2.146

\* Total Impact Factor  
\*\* Mean Impact Factor

## Awards

- Jury Award for the Best Poster at the 10th European Meeting of the French Gynaecology Society (Paris, 13-16 October 2010), for "Preimplant diagnosis in cases of BRCA".





# Translational Molecular Oncology

## TEAM



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UAB



### Coordinator

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## Main lines of research

The Main lines of research are focused on basic mechanism of human neoplasias, as follows:

- Identification of prognostic and predictive markers in patients with locally advanced HNSCC with poor clinical outcome. In collaboration with the Oncogenes and Antitumour Drugs Group and the Ear, Nose, Throat Cancer Group.
- Study "in vitro" and "in vivo" by genetic manipulation of putative biomarkers of poor prognosis in

HNSCC in tumor progression and as potential therapeutic targets. Now the studies are focused in genes of the Wnt signaling and/or induced by hypoxia.

- Development and improvement of a xerograph mouse model of head and neck carcinoma, based on the orthotopic implantation of human primary and recurrent tumor of HNSCC in the tongue of the mice, with the objective to study populations of cancer stem cells, their role in the tumor

progression and the resistance to treatment. This work is being carried out in collaboration with Alberto Villanueva of the Translational Research Laboratory of the Catalan Institute of Oncology (ICO)-IDIBELL, Purificación Muñoz (PEBC-IDIBELL), and the Ear, Nose, Throat Cancer Group.

- Establishment of an experimental model of leukemogenesis in collaboration with Josep Nomdèdeu (Haematology Laboratory).

## Challenges

- To evaluate the survival pathways, epithelial-mesenchymal transition (EMT), enrichment of cancer stem cell and the resistance to chemotherapeutic treatment in which the study genes are involved.
- To obtain a preclinical model for studying new anti-tumor drugs or alternative treatment to improve survival in patient with recurrent tumors and progression

of the disease in HNSCC, and its use in personalized therapy.

- To reinforce and to encourage the translational research in tumor progression and tumor initiating cells through the collaboration with internal and external groups of research.
- To be consolidated as a group of research through obtaining new research staff and new financed projects.

## Active grants

- Parreño, M. Study of poor prognosis markers in squamous cell carcinoma of the head and neck and the search for therapeutic alternatives. Period: January 2010-December 2012. Expedient: PI09/0334.
- Parreño, M. Agreement with the Department of Health: SNS

researcher stabilization. Period: January 2008-December 2012.

- Parreño, M. Prediction of tumour response to treatment in locally advanced squamous cell carcinoma of head and neck. Role of the DNA-PK complex. Period: April 2007-April 2010. Expedient: 07/FMM.

\*TIF: 5.224 \*\*MIF: 5.224

## INDEXED PUBLICATIONS

- 01 Cespedes M.V., Larriba M.J., Pavon M.A., Alamo P., Casanova I., Parreño M., Feliu A., Sancho F.J., Munoz A., Mangués R. Site-dependent E-cadherin cleavage and nuclear translocation in a metastatic colorectal cancer model. (2010) Am. J. Pathol.; 177(4): 2067-2079  
IF: 5.224.

## Scientific production

\* Total Impact Factor  
\*\* Mean Impact Factor



# Nursing Care Research

TEAM



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**Nursing researchers**

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Rafael Calvo	HSCSP	Maria Lacueva	HSCSP	Alicia Sánchez	HSCSP
Maria Cardús	HSCSP	Laura López	HSCSP	Montserrat Serra	HSCSP
Queralt Cebrià	HSCSP	Maika Peñalba	HSCSP	Amalia Sillero	HSCSP
Laura de la Cueva	HSCSP	M. José Pirla	HSCSP	Maria Solà	HSCSP
Dolores Gil	HSCSP	Maite Ricart	HSCSP		
		Gemma Robleda	HSCSP		

Main lines of research

- The group develops independent research projects focused on care. The active projects are grouped under the following lines:
  - 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 quantitative methods, text analysis and text analysis and discourse.
  - Patient satisfaction with nursing care.
  - Attention to the family.
  - Pain.
  - Technological innovations in nursing care.

Challenges

- Strengthen implemented care 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 analysis of text and discourse as tools in health science research.
- Create the synergies necessary to consolidate the group's activities.

Active grants

- García Mantas, A., Sánchez, A., Peñalba, M., Clemente, A. Assessing the impact of a clinical pathway for care of patients diagnosed with a fractured femur. Period: January 2010-December 2010.
- Juandó, C. Economic and cultural inequalities faced by women with breast cancer: Barriers and facilitators in the use of health services. Period: January 2009-December 2011. Expedient: PI08/0888.
- Juandó, C. Dissemination and evaluation of the virtual nurse with elderly people. Period: January 2010-December 2010. Expedient: PR-5175/09.
- Robleda, G., Juandó, C., Roche, F., Rivilla, M.T., Solà, M., Castillo, A., Sendra, M.A., Navarro, M., Sánchez, J., Ligeró, I., Bayod, M., Roura, I. Double-blind randomized placebo controlled clinical trial to evaluate the efficacy and safety of opioid agents as preventive treatment for pain associated with nursing care of critically ill patients on mechanical ventilation. Period: March 2010.









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