

2016

# Annual scientific report

Institut d'Investigació Biomèdica de Girona  
Dr. Josep Trueta



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**Gi**

Institut  
d'Investigació  
Biomèdica  
de Girona  
Dr. Josep Trueta



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# PRESENTATION

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The Girona Biomedical Research Institute (IDIBGI) is a public research centre that aims to be at the center of translational biomedical and health research in the province of Girona. IDIBGI belongs to the Catalan Network of Research Centres of the Generalitat de Catalunya (CERCA).

IDIBGI's mission is to support and develop quality research in biomedical and health sciences, promoting its translation into everyday practice with the objective of responding to the health needs of the community. We aspire to become a leading player in biomedical research by producing and transferring knowledge that has a significant impact on the health and quality of life of everybody in our society.

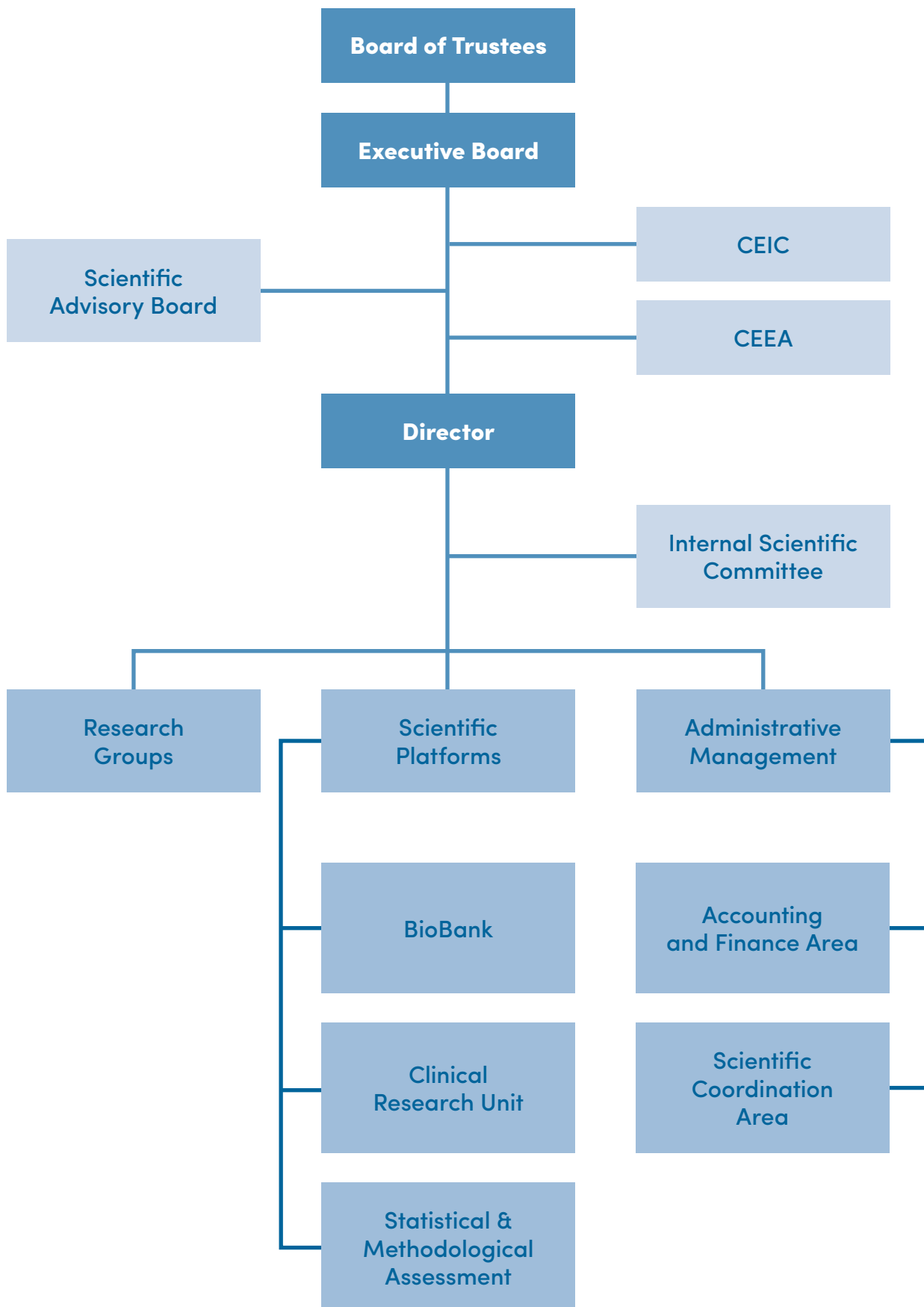
IDIBGI is the umbrella organization for investigators from different institutions: the ICS - Dr. Josep Trueta University Hospital, the Health Care Institute (IAS), the Catalan Institute of Oncology (ICO), the Institute of Diagnostic Imaging (IDI) and the Institute of Primary Care (IDIAP Jordi Gol) and since 2016, the University of Girona (UdG) in those groups related to health and biomedical research.

The activity of the IDIBGI's investigators is organized in four main areas: cardiovascular diseases, inflammation and metabolism, neurosciences, and onco-hematology. In addition, there are associated groups from UdG, bringing together 28 research groups. In 2016, IDIBGI had a staff of 86 people and worked with about 250 investigators from the different collaborating institutions. In this same year, IDIBGI managed 49 national and international research projects, had more than 366 clinical research studies in progress, participated in different scientific networks, and was part of the biobank platform of the Instituto de Salud Carlos III (ISCIII). In the last three years, it has published 742 papers in international journals with an average impact factor of 4,22 and 51,89% in the first quartile of the specialty.

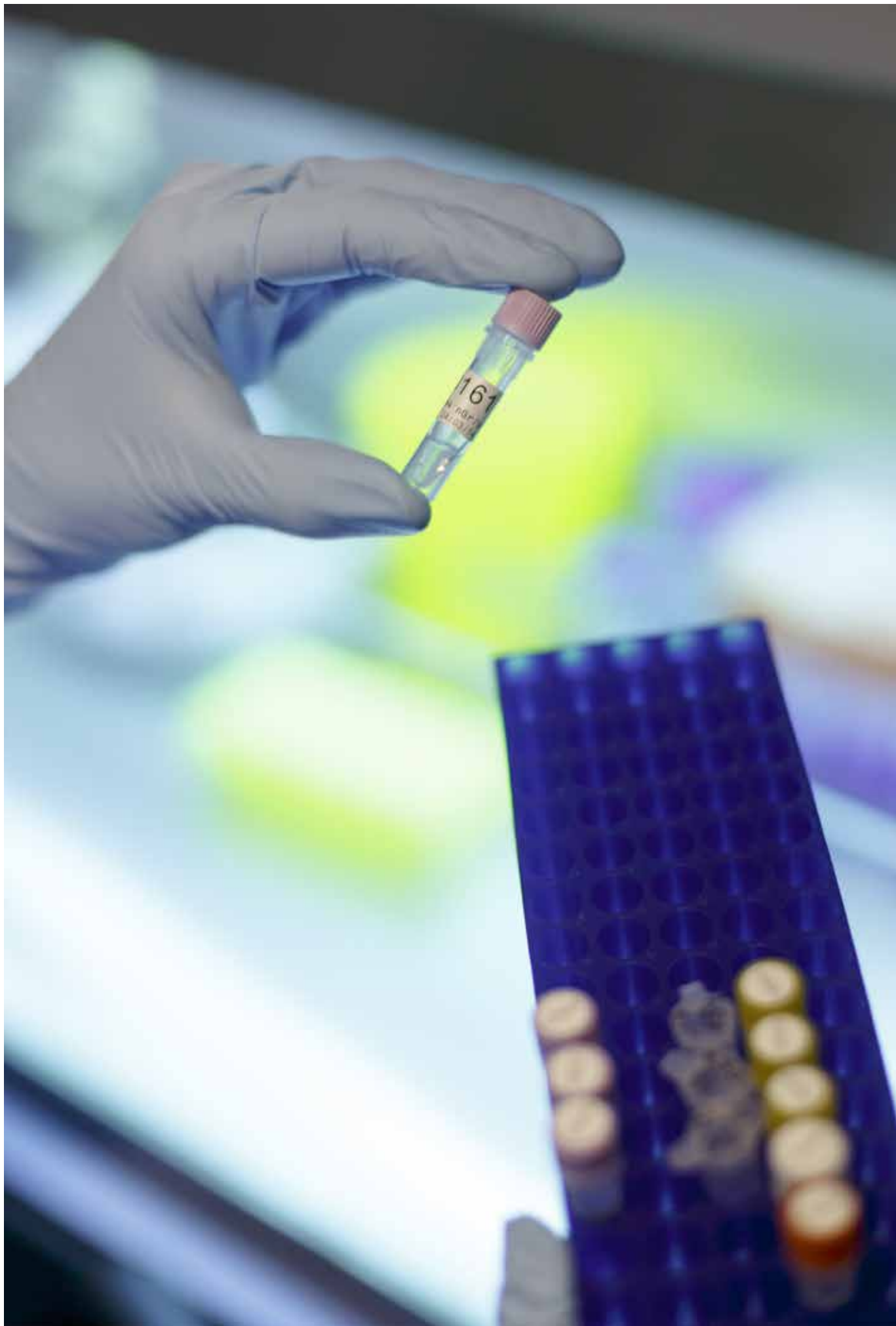
The combination of investigators with different expertise and backgrounds enables the creation of powerful synergies and the creation of multidisciplinary teams focused on the search for solutions to the main health problems and on training new professionals for the future. IDIBGI is well positioned to face new and future health challenges by undertaking innovative translational biomedical research in Girona.



# IDIBGI'S ORGANIZATION







# BOARD OF TRUSTEES

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## President

**Antoni Comín Olivares**  
Minister for Health – Catalan Government

## 1st Vice-President

**Jordi Baiget Cantons**  
Minister for Economy and Knowledge – Catalan Government

## 2nd Vice-President

**Sergi Bonet Marull**  
Dean of the University of Girona

## Members

**Francesc Ramón Subirada Curcó**  
Director General of Research, Catalan Government

**Antoni Andreu Périz**  
Director General of Health Research and Innovation

**Jaume Reventós Puigjaner**  
Delegat of Health Department

**Miquel Carreras Massanet**  
Regional Delegate

**Arcado Navarro Cuartiellas**  
Secretary of University and Research

**Iolanda Font de Rubinat**  
Director General of Research

**Lluís Rovira Pato**  
Director of the Cerca – Catalan Government

**Fàtima Calvo Rojas**  
Manager of the University of Girona

**Ramon Moreno Amich**  
Vice-Dean for Planning, Innovation and Business at the University of Girona

**Jordi Freixenet i Bosch**  
Vice-Dean for Research at the University of Girona

**Joaquim Casanovas Lax**  
Catalan Health Institute (ICS) and Healthcare Institute (IAS) Regional Manager for Girona

**Glòria Padura Esnarriaga**  
Hospital Director at the University Hospital of Girona Dr. Josep Trueta

**Joan Profitós Tuset**  
President IAS (Healthcare Institute) Girona

**Josep M<sup>a</sup> Vilà Cortasa**  
ICO Managing Director

## Secretary

**Joaquim Casanovas Lax**  
Catalan Health Institute (ICS) and Healthcare Institute (IAS) Regional Manager for Girona

# EXECUTIVE BOARD

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## President

**Antoni Andreu Périz**

Director General of Research and Innovation in Health, Catalan Government

## Members

**Francesc Ramon Subirada Curco**

Director General of Research, Catalan Government

**Lluís Rovira i Pato**

Director of the Cerca – Catalan Government

**Fàtima Calvo Rojas**

Manager of the University of Girona

**Ramon Moreno Amich**

Vice-Dean for Planning, Innovation and Business at the University of Girona

**Joaquim Casanovas Lax**

Catalan Health Institute (ICS) and Healthcare Institute (IAS) Regional Manager for Girona

**Joan Profitós Tuset**

President IAS (Healthcare Institute) Girona

## Secretary

**Joaquim Casanovas Lax**

Catalan Health Institute (ICS) and Healthcare Institute (IAS) Regional Manager for Girona

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## SCIENTIFIC ADVISORY BOARD

### MEMBERS

**Silva Arslanian**

Pediatric Clinical & Translational Research Center Children's Hospital of Pittsburgh

**Angelo Barbato**

Istituto di Ricerche Farmacologiche, Milano

**Angel Carracedo**

Genomic Medicine, University of Santiago de Compostela

**Josep Figueras**

European Observatory on Health Systems and Policies, World Health Organization, Bruxelles

**Carlos Kase**

Department of Neurology, Boston Medical Center

**Blanca Marin**

University of Navarra, Pamplona

**Luis Martí-Bonmatí**

Radiology Department of the Hospital Quirón, Valencia

**Mike Pringle**

Royal College of General Practitioners (RCGP), UK

**Walter A Rocca**

Epidemiology and Neurology Department, Health Sciences Research Department, Neurology Mayo Clinic, Rochester Minnesota

**Marisol Soengas**

Molecular Pathology Programme, Spanish National Cancer Research Centre, Madrid

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## INTERNAL SCIENTIFIC COMMITTEE

### PRESIDENT

Director of the IDIBGI

### MEMBERS

#### IAS

**Jordi Cid**

Mental Health Group Leader

**Josep Garre**

Aging and Health Group Leader

#### ICS

**José Manuel Fernández-Real**

Nutrition, Eumetabolism and Health Group Leader

**Rafel Ramos**

Girona Heart Registry Group Leader

**Joaquín Serena**

Cerebrovascular Pathology Researcher

**Pilar Sole**

Coordinator of Research in Nursing of the University Hospital of Girona

**Montserrat Vendrell**

Bronchiectasys Group Leader

#### ICO

**David Gallardo**

Hematology Group Leader

**Rafel Marcos-Gragera**

Descriptive epidemiology, genetics and cancer prevention Group Leader

**Begoña Martín**

ICO Clinical Research Unit Coordinator

**Javier Menéndez**

Molecular Oncology Group Leader

#### IDI

**Salvador Pedraza**

Medical Imaging Group Leader

#### UdG

**Ramon Brugada**

Cardiovascular Genetics Group Leader

**Dolors Juvinyà**

Health and Health Care Group Leader

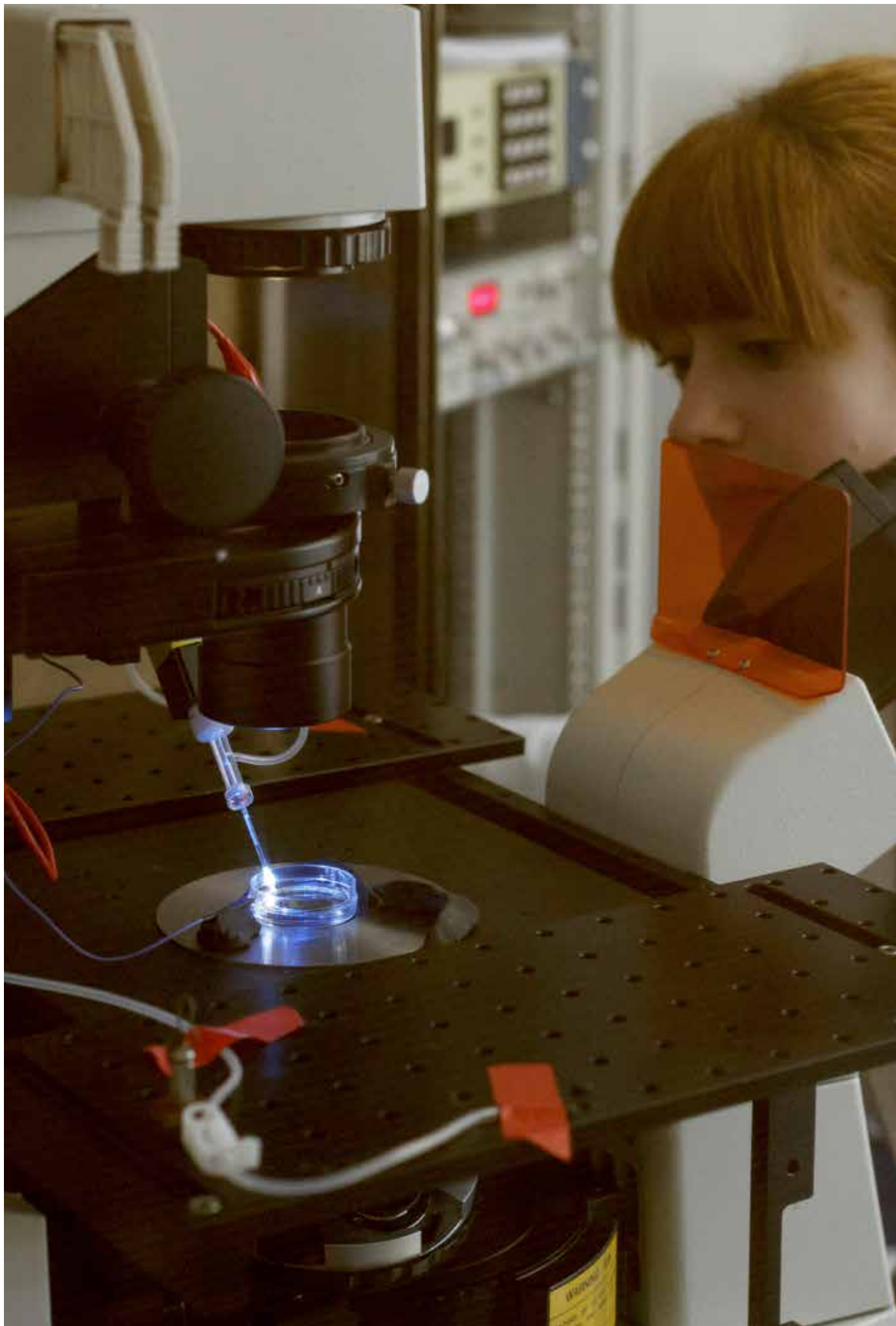
### SECRETARY

**Guillem Pérez Sánchez**

Scientific Coordinator



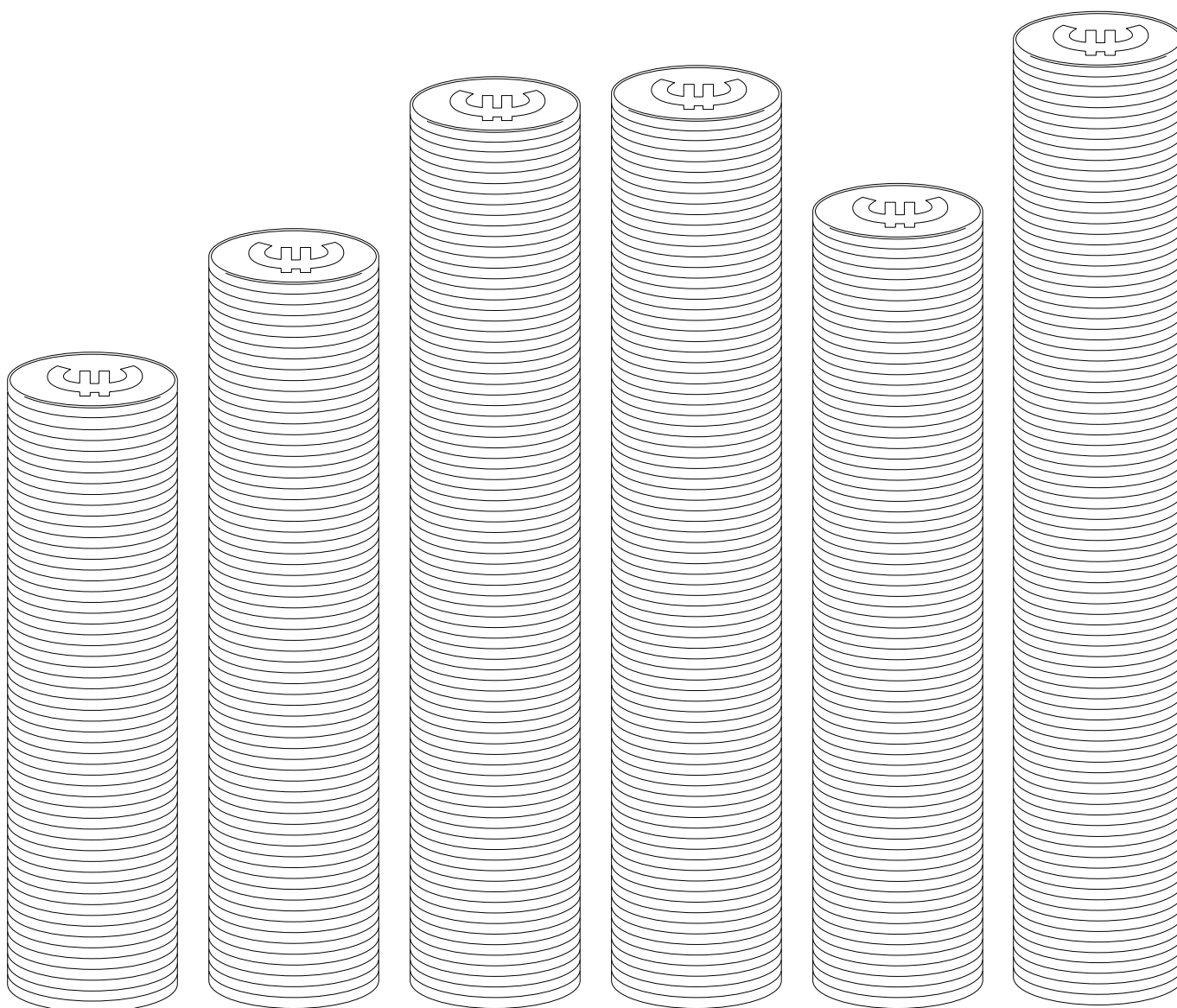
# Facts and figures



# MANAGEMENT REPORT

## ANNUAL BUDGET

6.000.000 €



2011

2012

2013

2014

2015

2016

3.504.806,91€

4.220.438,92€

5.061.407,16€

5.120.649,38€

4.471.022,95€

5.397.585,04 €



## FUNDS SOURCES AND EXPENSES

## 2016 Expenses

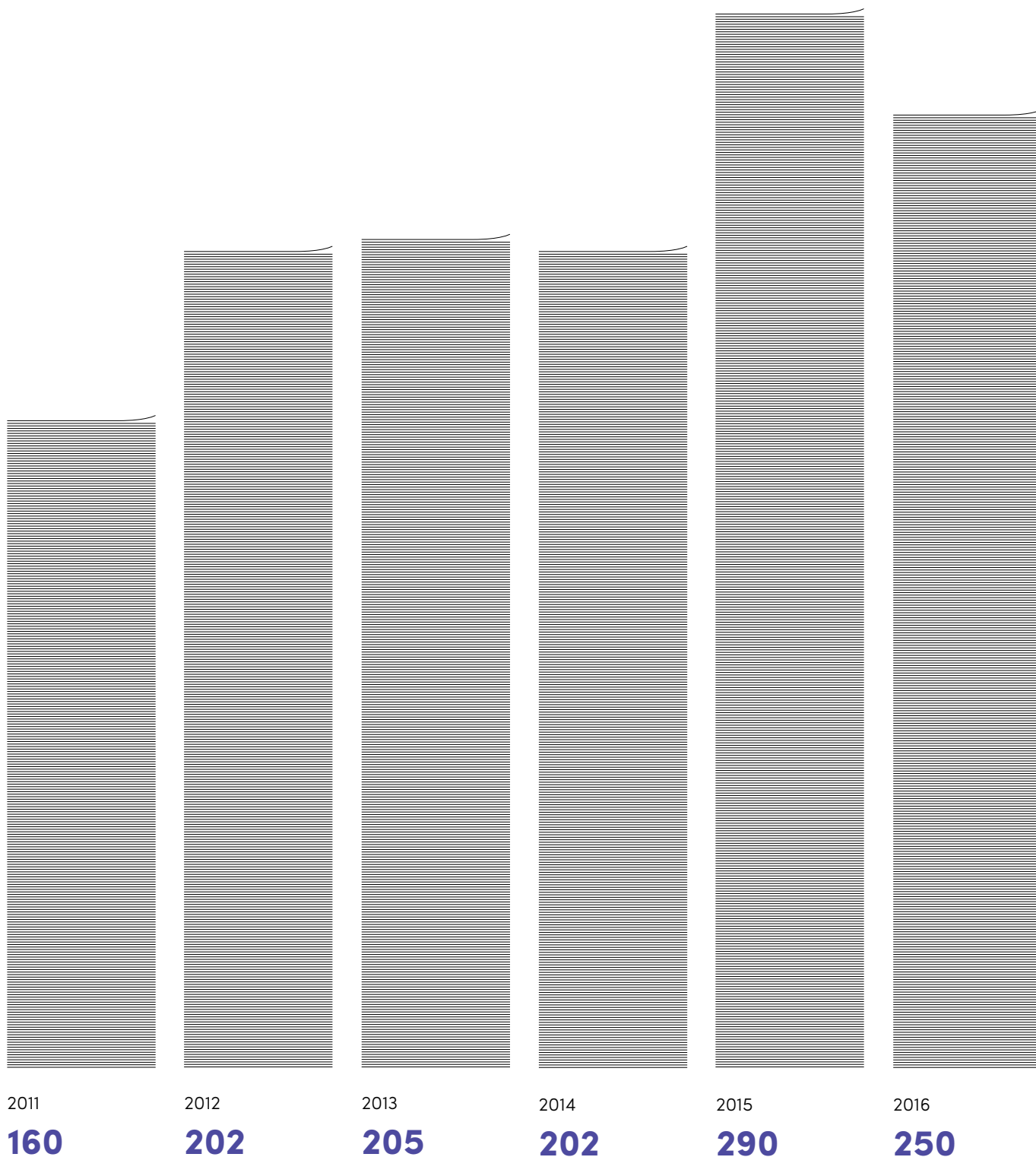
27,8%	Human Resources: <b>1.494.257,43 €</b>
18,3%	Medical consumables & external works: <b>976.330,43 €</b>
4,8%	Collaborations: <b>243.774,97 €</b>
2,2%	Publications & academic training: <b>164.859,40 €</b>
1,8%	Travelling costs: <b>101.770,57 €</b>
3,5%	Other Services: <b>165.149,42 €</b>
1,9%	Transfers to other public institutions: <b>179.392,00 €</b>
25,3%	Equipment: <b>153.086,78 €</b>
4,3%	Running costs: <b>255.497,41 €</b>
6,7%	Administration office: <b>308.266,08 €</b>
4,5%	Research support office: <b>231.610,37 €</b>
	<b>TOTAL: 4.273.994,86 €</b>

## 2016 Funds Source

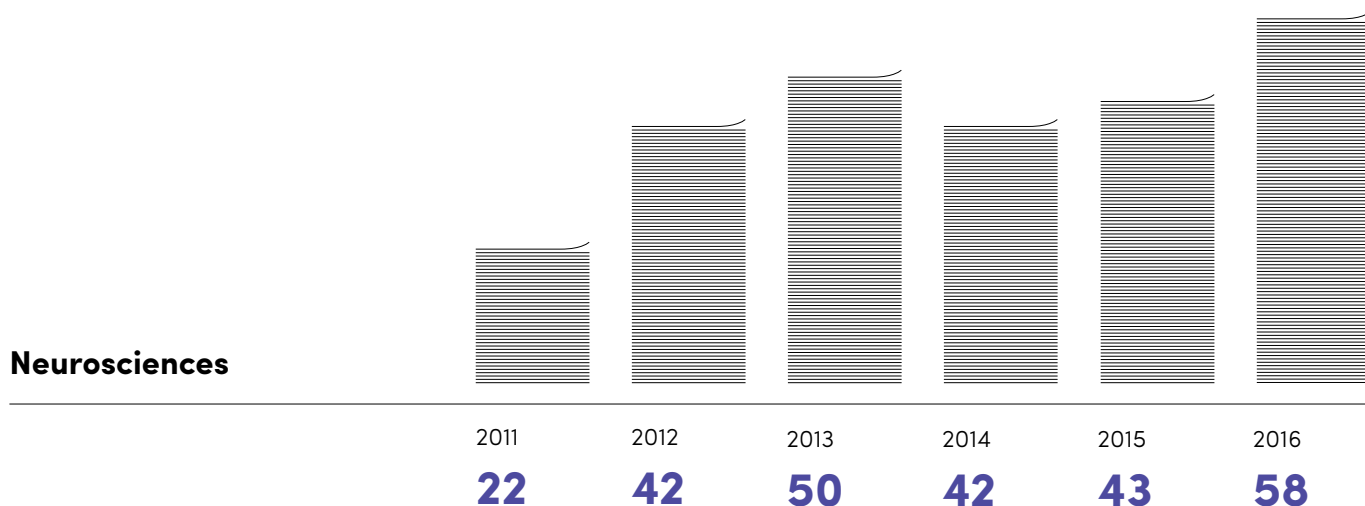
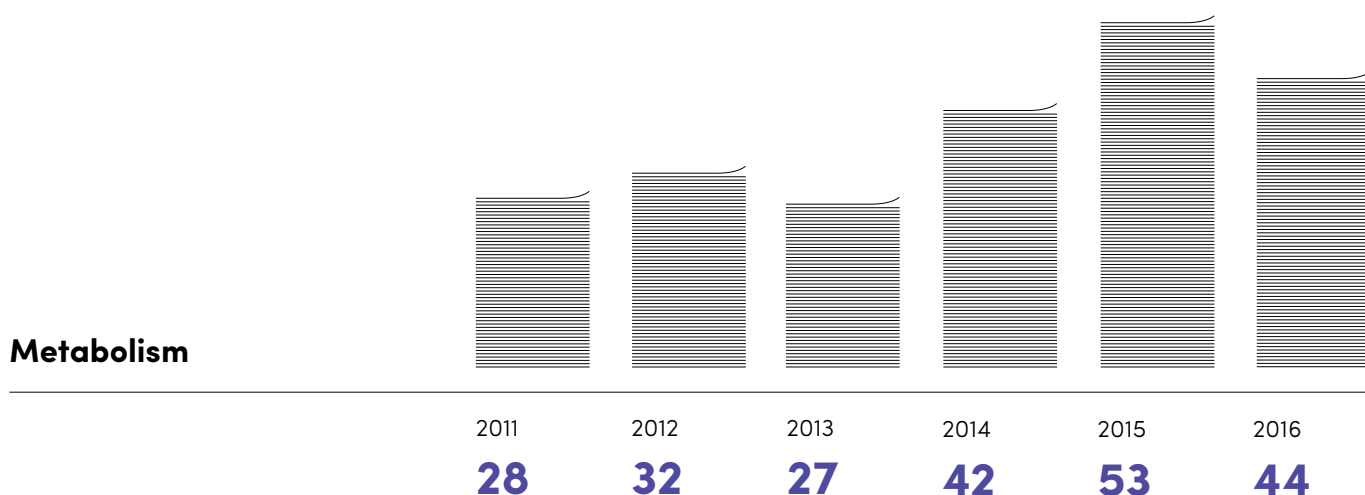
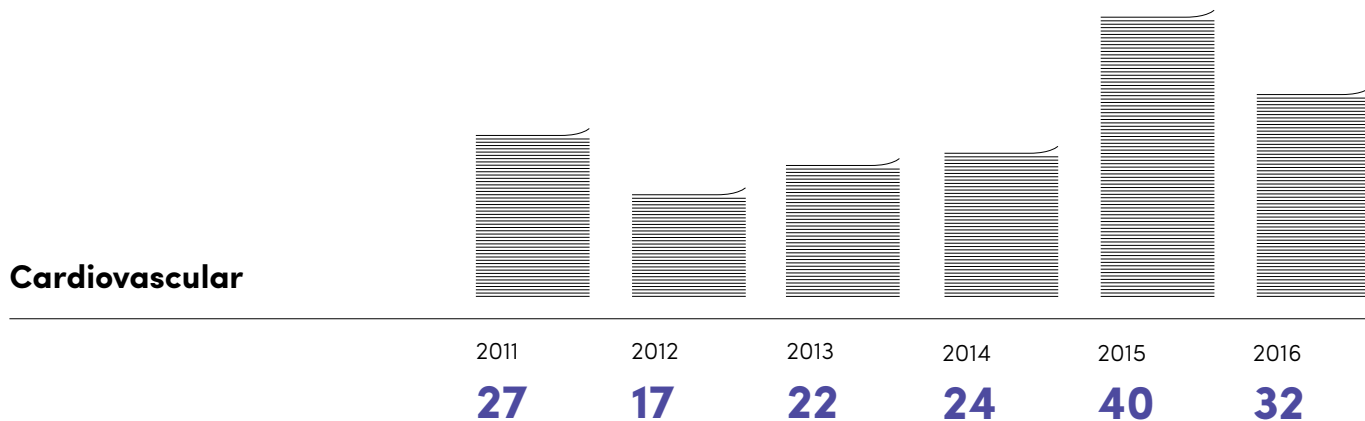
31,7%	Pharmaceutical companies: <b>1.772.193,19 €</b>
6,3%	Patronage & donations: <b>372.048,02 €</b>
8,5%	Other privat funds: <b>54.306,04 €</b>
13,6%	ISCIII: <b>749.989,16 €</b>
3,0%	MICINN: <b>331.860,47 €</b>
2,5%	Other public funds: <b>111.147,05 €</b>
11,2%	Generalitat de Catalunya: <b>450.000,00 €</b>
2,9%	La Caixa Foundation: <b>500.000,00 €</b>
13,0%	La Marató de TV3 Foundation: <b>191.448,30 €</b>
1,7%	Other associations & foundations: <b>303.903,78 €</b>
5,6%	European funds (FP7-EU): <b>115.507,02 €</b>
1,7%	Financial income: <b>17.345,27 €</b>
	<b>TOTAL BUDGET: 5.397.585,04 €</b>

# SCIENTIFIC OUTPUT

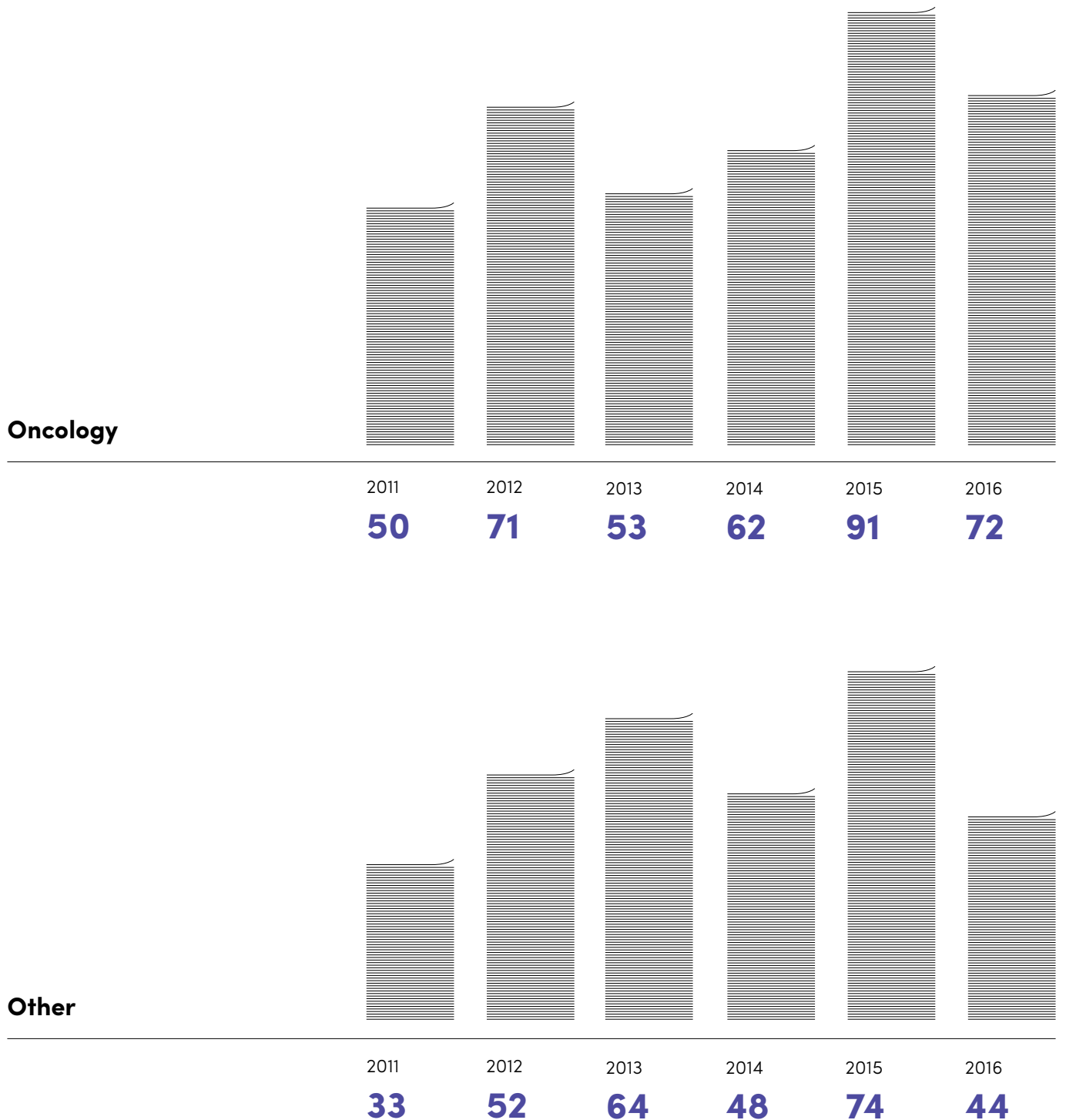
NUMBER OF ARTICLES



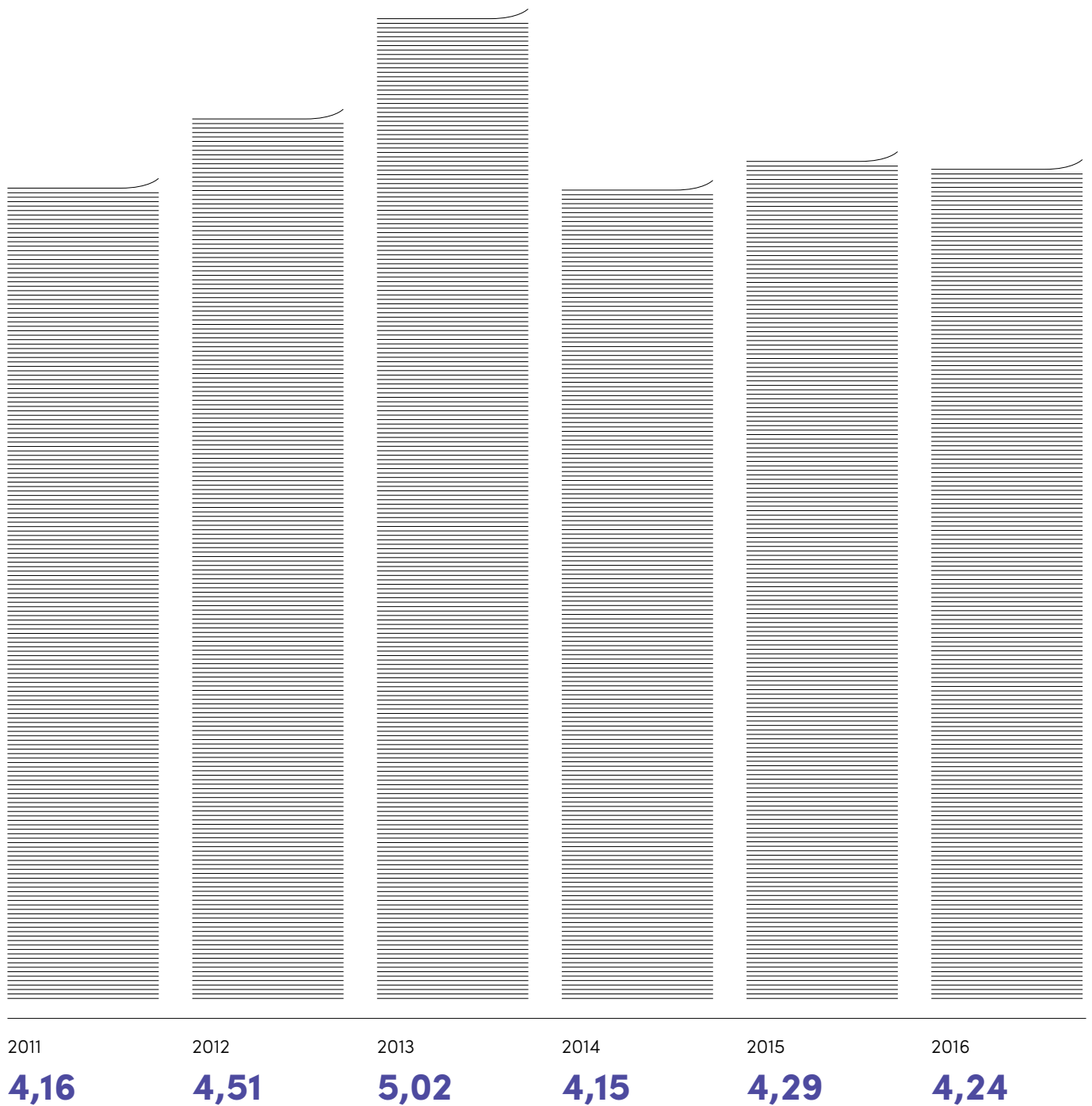
ARTICLES BY AREA



ARTICLES BY AREA



## IMPACT FACTOR PER ARTICLE



## FACTS AND FIGURES

This list reflects all the journals in which investigators of the IDIBGI have published articles during 2016. The journals on Decile 1 are highlighted.

JOURNAL	Total Articles Published	IF	QUARTILE
ACCIDENTAL	1	-	-
ACTA DIABETOLOGICA	1	3,074	2
ACTAS DERMOSIFILIOGRAFICAS	1	-	-
ACTAS UROLÓGICAS ESPAÑOLAS	1	0,964	4
AGING US	1	3,979	2
AMERICAN JOURNAL OF ALZHEIMER'S DISEASE AND OTHER DEMENTIAS	1	1,614	3
AMERICAN JOURNAL OF HEMATOLOGY	1	5	1
AMERICAN JOURNAL OF KIDNEY DISEASES	1	6,269	1
ANNALS DE MEDICINA	1	-	-
ANNALS OF EPIDEMIOLOGY	1	2,335	2
ANNALS OF MEDICINE	1	3,76	1
ANNALS OF THE AMERICAN THORACIC SOCIETY	1	-	-
ARCHIVOS DE BRONCONEUMOLOGIA	1	1,771	3
ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY	1	5,969	1
AUSTRALIAN CRITICAL CARE	1	1,479	4
BLOOD	3	11,847	1
BLOOD REVIEWS	1	6,627	1
BMC CANCER	1	3,265	2
BMC CARDIOVASCULAR DISORDERS	2	1,916	3
BMC GERIATRICS	1	2,371	2
BMC INFECTIOUS DISEASES	1	2,69	2
BMC SYSTEMS BIOLOGY	1	2,208	1
BONE MARROW TRANSPLANTATION	1	3,636	2
BREAST CANCER RESEARCH	1	5,211	1
BREAST CANCER RESEARCH AND TREATMENT	2	4,085	2
BREAST CARE	1	1,645	4
BRITISH JOURNAL OF HAEMATOLOGY	1	5,812	1
BRITISH JOURNAL OF NUTRITION	1	3,311	2
CANCER EPIDEMIOLOGY	3	2,644	3
CARDIOVASCULAR DIABETOLOGY	1	4,534	1
CELL CYCLE	2	3,952	2
CELL REPORTS	1	7,87	1
CEREBELLUM	1	2,429	3
CEREBROVASCULAR DISEASES	2	3,359	2
CHEMICAL PHYSICS	1	1,76	3
CHRONIC RESPIRATORY DISEASES	1	2,694	2
CLINICAL SARCOMA RESEARCH	1	-	-
CLINICAL AND TRANSLATIONAL ONCOLOGY	1	2,075	3
CLINICAL CANCER RESEARCH	1	8,738	1
CLINICAL CHEMISTRY	1	7,457	1
CLINICAL ENDOCRINOLOGY	1	3,487	2
CLINICAL GENETICS	1	3,892	2
CLINICAL NUTRITION	1	4,487	1
CLINICAL RHEUMATOLOGY	1	2,042	3
CLINICAL TRANSLATIONAL ONCOLOGY	2	-	-
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE	1	1,862	2
CRITICAL CARE MEDICINE	1	7,422	1
CROATIAN MEDICAL JOURNAL	1	1,483	2
CURRENT DRUG TARGETS	1	3,029	2

**FACTS AND FIGURES**

<b>JOURNAL</b>	<b>Total Articles Published</b>	<b>IF</b>	<b>QUARTILE</b>
CURRENT PSYCHOLOGY	1	0,644	3
DIABETES CARE	1	8,93	1
DIABETES TECHNOLOGY AND THERAPEUTICS	1	2,198	3
DIABETOLOGIA	2	6,206	1
DIAGNOSTIC AND INTERVENTIONAL RADIOLOGY	1	1,406	3
DIGESTIVE AND LIVER DISEASE	1	2,719	3
ECOSYSTEM SERVICES	1	4,307	1
ELECTROPHORESIS	1	2,482	2
ELIFE	1	8,282	1
ENVIRONMENTAL RESEARCH	1	3,088	1
EUROPEAN EATING DISORDERS REVIEW	2	-	-
EUROPEAN JOURNAL OF ENDOCRINOLOGY	1	3,892	1
EUROPEAN JOURNAL OF EPIDEMIOLOGY	1	7,105	1
EUROPEAN JOURNAL OF HAEMATOLOGY	1	2,544	3
EUROPEAN JOURNAL OF NUTRITION	1	3,239	2
EUROPEAN JOURNAL OF SURGICAL ONCOLOGY	2	3,184	2
EUROPEAN JOURNAL OF VASCULAR AND ENDOVASCULAR SURGERY	1	2,91	1
EUROPEAN RESPIRATORY JOURNAL	3	8,332	1
FARMACIA HOSPITALARIA	1	-	-
FERTILITY AND STERILITY	1	4,426	1
FOOD AND CHEMICAL TOXICOLOGY	1	3,584	1
FORENSIC SCIENCE INTERNATIONAL	1	1,95	2
GACETA SANITARIA	4	1,509	3
GENES & DISEASES	1	-	-
GENETICS IN MEDICINE	1	7,329	1
GLOBALIZATION AND HEALTH	1	2,54	2
HEPATOLOGY	1	11,711	1
HIPERTENSIÓN Y RIESGO VASCULAR	1	-	-
HISTOLOGY AND HISTOPATHOLOGY	1	1,875	4
HUMAN MOLECULAR GENETICS	1	6,393	1
INTENSIVE CARE MEDICINE	1	10,125	1
INTERNATIONAL JOURNAL FOR EQUITY AND HEALTH	1	2,378	1
INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN BIOMEDICAL ENGINE	1	1,849	2
INTERNATIONAL JOURNAL OF CANCER	1	5,531	1
INTERNATIONAL JOURNAL OF CARDIOLOGY	4	4,638	1
INTERNATIONAL JOURNAL OF CLINICAL AND EXPERIMENTAL MEDICINE	1	1,075	4
INTERNATIONAL JOURNAL OF COMPUTER GAMES TECHNOLOGY	1	-	-
INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY	1	2,699	2
INTERNATIONAL JOURNAL OF GERIATRYC PSYCHIATRY	2	2,7	2
INTERNATIONAL JOURNAL OF LEGAL MEDICINE	2	2,714	1
INTERNATIONAL JOURNAL OF OBESITY	2	5,337	1
INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY, BIOLOGY, PHYSICS	1	4,495	1
INTERNATIONAL JOURNAL OF STROKE	1	3,044	2
INTERNATIONAL PSYCHOGERIATRICS	2	2,22	3
INTERNATIONAL REVIEW OF CELL AND MOLECULAR BIOLOGY	1	3,752	2
JACC. CARDIOVASCULAR IMAGING	1	7,815	1
JOURNAL OF AFFECTIVE DISORDERS	1	3,57	1
JOURNAL OF ALZHEIMER'S DISEASE	5	3,92	2
JOURNAL OF BIOLOGICAL CHEMISTRY	1	4,258	1

**FACTS AND FIGURES**

<b>JOURNAL</b>	<b>Total Articles Published</b>	<b>IF</b>	<b>QUARTILE</b>
JOURNAL OF BREATH RESEARCH	1	4,177	1
JOURNAL OF CANCER	1	3,609	2
JOURNAL OF CARDIOVASCULAR ELECTROPHYSIOLOGY	1	3,156	2
JOURNAL OF CHROMATOGRAPHY	1	3,926	2
JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM	1	5,53	1
JOURNAL OF CLINICAL LIPIDOLOGY	1	4,906	1
JOURNAL OF CLINICAL NURSING	1	1,384	2
JOURNAL OF ENDOCRINOLOGY	1	4,498	1
JOURNAL OF EPIDEMIOLOGY AND COMMUNITY HEALTH	1	3,865	1
JOURNAL OF MEDICAL SCREENING	1	1,75	2
JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY	1	4,874	1
JOURNAL OF NEUROIMAGING: OFFICIAL JOURNAL OF THE AMERICAN SOCIETY OF NEUROIMAGING	1	1,625	3
JOURNAL OF NEUROLOGY AND NEUROSCIENCE	1	6,431	1
JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY	1	4,785	1
JOURNAL OF ORGANIC CHEMISTRY	1	3,89	1
JOURNAL OF PEDIATRICS	2	3,867	1
JOURNAL OF PROTEOMICS	1	1,669	4
JOURNAL OF STROKE AND CEREBROVASCULAR DISEASE	1	17,76	1
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY	1	3,031	1
JOURNAL OF THE AMERICAN SOCIETY FOR MASS SPECTROMETRY	1	44	1
LANCET	2	2,891	2
LEUKEMIA AND LYMPHOMA	1	1,854	3
MAGNETIC RESONANCE IMAGING CLINICS OF NORTH AMERICA	1	4,565	1
MEDICAL IMAGE ANALYSIS	1	1,193	4
MEDICINA INTENSIVA	3	-	-
MEDICINA PSICOSOMÁTICA Y PSIQUIATRÍA DE ENLACE	1	2,133	2
REVISTA IBEROAMERICANA DE PSICOSOMÁTICA			
MEDICINE	1	1,861	1
MIDWIFERY	1	-	-
MOLECULAR & CELLULAR ONCOLOGY	1	4,551	1
MOLECULAR NUTRITION & FOOD RESEARCH	2	2,465	2
MOLECULES	1	-	0
MULTIPLE SCLEROSIS	1	4,671	1
MULTIPLE SCLEROSIS JOURNAL	1	11,329	1
NATURE COMMUNICATIONS	1	31,616	1
NATURE GENETICS	1	30,357	1
NATURE MEDICINE	1	3,439	1
NEUROBIOLOGY OF LEARNING AND MEMORY	1	2,392	1
NEUROCOMPUTING	1	1,79	3
NEUROLOGIA	3	8,166	1
NEUROLOGY	1	-	-
NEUROLOGY,NEUROIMMUNOLOGY AND NEUROINFLAMMATION	1	1,867	3
NEUROPSYCHIATRIC DISEASE AND TREATMENT	1	2,274	3
NEURORADIOLOGY	1	59,558	1
NEW ENGLAND JOURNAL OF MEDICINE	1	3,614	1
OBESITY	3	7,932	1
ONCOGENE	1	-	-
ONCOSCIENCE	1	-	-



JOURNAL	Total Articles Published	IF	QUARTILE
ONCOSCIENCE	1	5,008	1
ONCOTARGET	8	3,559	1
ORGANIC & BIOMOLECULAR CHEMISTRY	1	0,437	3
OUTLOOK ON AGRICULTURE	1	3,689	1
PEDIATRIC OBESITY	5	1,525	3
PEDIATRIC RADIOLOGY	1	2,761	1
PEDIATRIC RESEARCH	1	-	-
PHYTOTHERAPY RESEARCH	1	3,057	1
PLOS ONE	11	2,89	1
PREVENTIVE MEDICINE	1	1,65	3
PSIQUIATRIA Y SALUD MENTAL	1	4,704	1
PSYCHONEUROENDOCRINOLOGY	1	2,429	2
QUALITY OF LIFE RESEARCH	1	-	-
RADIOLOGIA	3	0,684	4
REVISTA DE NEUROLOGIA	2	0,606	4
REVISTA ESPAÑOLA DE SALUD PÚBLICA	1	5,228	1
SCIENTIFIC REPORTS	3	7,023	1
STEM CELL REPORTS	1	5,787	1
STROKE	6	3,54	1
SURGERY FOR OBESITY AND RELATED DISEASES	1	8,854	1
THERANOSTICS	1	3,784	2
THYROID	1	3,077	2
TRANSLATIONAL ONCOLOGY	1	4,557	1
TRANSLATIONAL RESEARCH	1	1,071	4
TUMORI	1	2,523	2
WORLD JOURNAL OF SURGERY	1	0,579	4
HEROIN ADDICTION AND RELATED CLINICAL PROBLEMS	1	1,333	4
JOURNAL OF CHEMOTHERAPY	1	3,124	2
AMERICAN JOURNAL OF NEURORADIOLOGY	1	3,047	1
FRONTIERS IN NEUROINFORMATICS	1	0	-
JOURNAL OF MEDICAL IMAGING	1	2,142	2
ARTIFICIAL INTELLIGENCE IN MEDICINE	1	-	-
EMERGENCIAS	1	-	-
CLINICAL HEALTH PROMOTION	1	-	-
JOURNAL OF EMERGENCY NURSING	1	-	-
ENFERMERIA INTENSIVA	1	0,838	4
GASTROENTEROLOGÍA Y HEPATOLOGÍA	1	-	-

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## CLINICAL IMPACT

**A Poveda; V Martinez; C Serrano; I Sevilla; M J Lecumberri; RD de Beveridge; A Estival; D Vicente; J Rubió; J Martin-Broto J. SEOM Clinical Guideline for gastrointestinal sarcomas (GIST) (2016).**

Clinical Translational Oncology. Dec;18(12):1221-1228

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## THESES

**Title**

Fenotips delirants en pacients amb esquizofrènia: caracterització clínica i evolució de la simptomatologia psicòtica i adaptativa als 6 mesos.

**Doctorate Thesis Reader**

Domènec Serrano Sarbosa (07/10/2016)

**Research Group**

Aging, fisability and health

**University**

Universitat Autònoma de Barcelona

**Title**

Violència i Psiquiatria: Validació de l'Escala de Valoració de Risc d'Agressivitat (EVRA).

**Doctorate Thesis Reader**

Jordi Font Pujol (02/02/2016)

**Research Group**

Aging, fisability and health

**University**

Universitat de Girona

**Title**

L'envelliment actiu i saludable a la província de Girona i a Europa segons diferents models.

**Doctorate Thesis Reader**

Cristina Bosch Farré (01/07/2016)

**Research Group**

Aging, fisability and health

**University**

Universitat de Girona

**Title**

Paper de la placofilina-2 en la miocardiopatia aritmogènica de ventricle dret: bases genètiques i mecanismes moleculars.

**Doctorate Thesis Reader**

Mireia Alcalde Masegú (20/01/2016)

**Research Group**

Cardiovascular genetics

**University**

Universitat de Girona

**Title**

Determinants moleculars de la mort sobtada cardíaca hereditària en una gran família de les Illes Canàries.

**Doctorate Thesis Reader**

Cristina Bosch Calero (08/03/2016)

**Research Group**

Cardiovascular genetics

**University**

Universitat de Girona

**Title**

Efectes d'un programa de rehabilitació basat en l'exercici aeròbic (PREA) per la millora de la condició física i la qualitat de vida en persones que han patit un ictus.

**Doctorate Thesis Reader**

Bernat-Carles Serdà (10/06/2016)

**Research Group**

Descriptive Epidemiology, genetics and cancer prevention

**University**

Universitat Autònoma de Barcelona

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**Title**

Factors de risc d'incidència de fibril·lació-flutter auricular (FFA) en població hipertensa sense antecedents de malaltia cardiovascular isquèmica, i efectivitat de les estatines en la prevenció primària d'aquesta arítmia.

**Doctorate Thesis Reader**

Lia Alves Cabratosa (16/12/2016)

**Research Group**

Epidemiology and reserach in vascular health

**University**

Universitat de Girona

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**Title**

Identificació de les necessitats de les dones diagnosticades de càncer de mama en diferents períodes des del diagnòstic de la malaltia.

**Doctorate Thesis Reader**

Rocío Jurado Pérez (15/01/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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**Title**

El sentido de coherència y el compromiso laboral de las enfermeras en el ámbito socio sanitario de Girona.

**Doctorate Thesis Reader**

M. del Carme Malagón Aguilera (18/01/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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**Title**

Assaig clínic aleatoritzat sobre l'impacte de l'aïllament acústic ambiental i de la musicoteràpia en el confort del pacient amb ventilació mecànica ingressat en una unitat de cures intensives.

**Doctorate Thesis Reader**

Marina Mateu Capell (19/01/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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**Title**

Mesures de seguretat en els pacients amb traumatismes cranials lleus assistits en el mitjà extrahospitalari

**Doctorate Thesis Reader**

Montserrat Soler Sellarès (25/02/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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**Title**

Apoderament de les persones amb insuficiència renal crònica en la gestió del seu problema de salut.

**Doctorate Thesis Reader**

Carme Puigvert Vilalta (30/03/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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**Title**

Continuïtat assistencial infermera. Una millora en la qualitat i seguretat de les cures infermeres.

**Doctorate Thesis Reader**

Gloria Reig Garcia (11/05/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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**Title**

L'Envelliment actiu i saludable a la província de Girona i a Europa segons diferents models.

**Doctorate Thesis Reader**

Cristina Bosch Ferré (01/07/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

---

**Title**

Els hàbits de salut dels professionals sanitaris d'atenció primària

**Doctorate Thesis Reader**

Iris Forcada Parilla (04/11/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

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## THESES

**Title**

Efectes d'un programa de rehabilitació basat en l'exercici aeròbic (PREA) per la millora de la condició física i la qualitat de vida en persones que han patit un ictus.

**Doctorate Thesis Reader**

Montserrat Grau Pellicer(10/06/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

**Title**

A salutogenic approach to health promotion among immigrant women at risk of social exclusion.

**Doctorate Thesis Reader**

Anna Bonmatí Tomàs (13/12/2016)

**Research Group**

Health and Healthcare

**University**

Universitat de Girona

**Title**

Constraint-based metabolic models and their application in industrial biotechnology.

**Doctorate Thesis Reader**

Yeimy Liceth Morales Pérez (06/2016)

**Research Group**

MICELAB

**University**

Universitat de Girona

**Title**

Modal interval based package for robust control.

**Doctorate Thesis Reader**

Inés Ferrer Mallorquí (05/2016)

**Research Group**

MICELAB

**University**

Universitat de Girona

**Title**

El fenotipo "basal-HER2" en el cáncer de mama: caracterización clínico-molecular e implicaciones terapéuticas.

**Doctorate Thesis Reader**

Begoña Martín Castillo (03/02/2016)

**Research Group**

Molecular Oncology

**University**

Universitat Complutense de Madrid (UCM)

**Title**

Identificación de genes de susceptibilidad en esclerosis múltiple. Descripción clínica y análisis genético de una extensa familia de etnia gitana (Estudio EMGypsy).

**Doctorate Thesis Reader**

René Robles Cedeño (19/07/2016)

**Research Group**

Neurodegeneration and neuroinflammation

**University**

Universitat de Girona

**Title**

Estudi de la concentració circulant de vitamina D3 i l'expressió gènica del receptor de vitamina D a teixit adipós en relació a la hipertensió arterial.

**Doctorate Thesis Reader**

Núria Garriga Bardalet (29/01/2016)

**Research Group**

Nutrition, eumetabolism and health

**University**

Universitat de Barcelona

**Title**

Structural and funcional characterization of Apoptin and design of a monomèric variant with antitumoral activity.

**Doctorate Thesis Reader**

Santiago Ruíz Martínez (08/07/2016)

**Research Group**

Protein engineering

**University**

Universitat de Girona

**Title**

Anàlisi de la selectivitat per a cèl·lules tumorals de ribonucleases citotòxiques i desenvolupament d'eines per augmentar aquesta selectivitat.

**Doctorate Thesis Reader**

Gloria García Galindo (19/07/2016)

**Research Group**

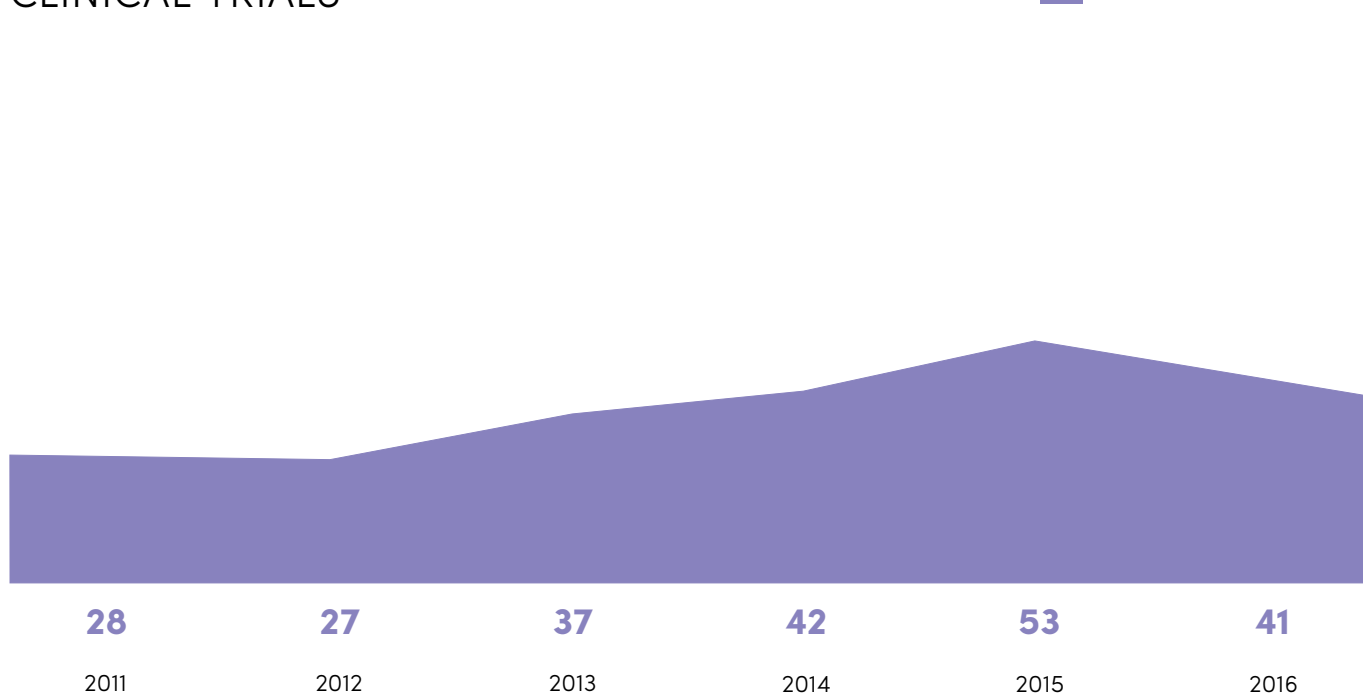
Protein engineering

**University**

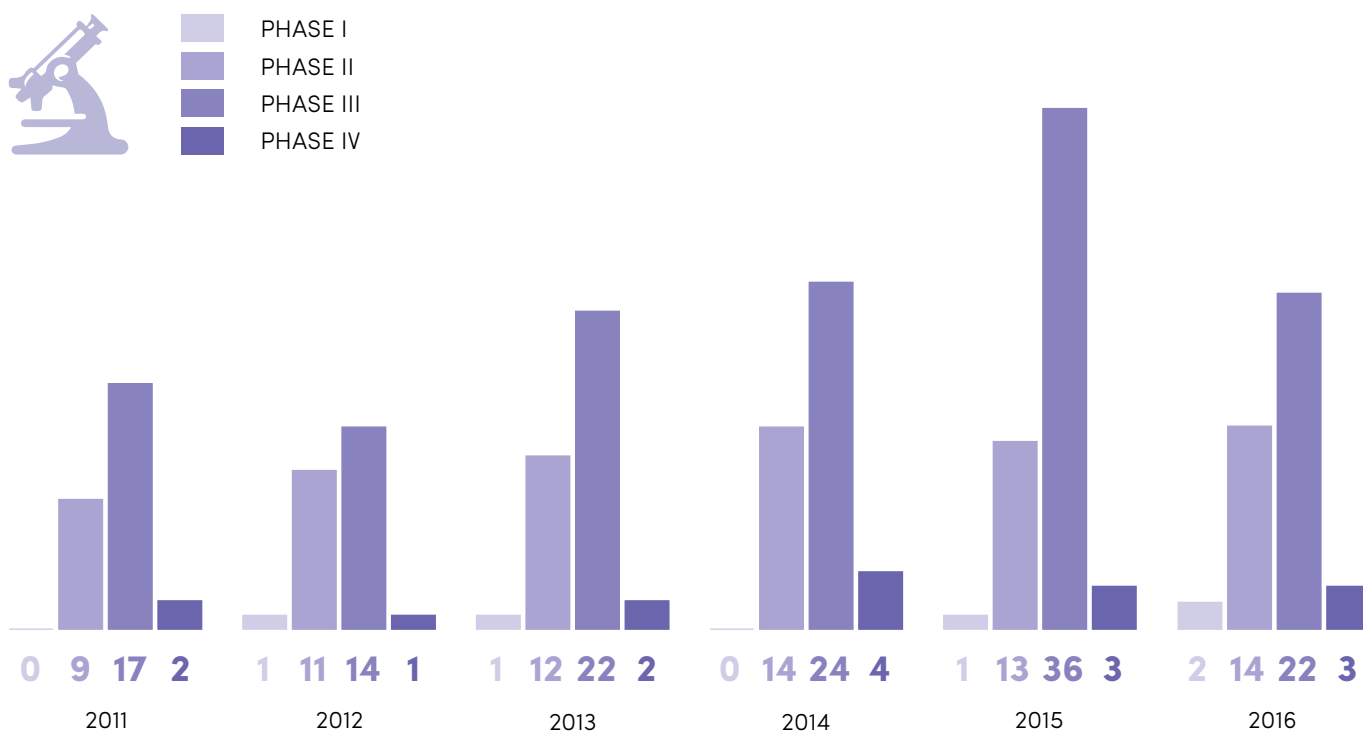
Universitat de Girona

## CLINICAL TRIALS

Clinical Trials



### Clinical Trials by Phase 2011-2016



FEBRUARY 2016

## Un estudi de l'IDIBGI i l'IDIAP confirma les estatines com a mesura de prevenció de la malaltia cardiovascular en pacients amb arteriosclerosi asimptomàtica a les cames



*L'estudi s'acaba de publicar al prestigiós Journal of the American College of Cardiology*

Principals mitjans: La Vanguardia, El Punt Avui, Diari de Girona, ACN, 3/24, Catalunya Informació, Cadena SER, El Garrotxí.cat, Diario Médico, Correo Farmacéutico, Agencia EFE, A tu Salud, InfolCS, Gaceta Médica, Europa Press...

## Un estudi de l'ICO Girona-IDIBGI mostra per primera vegada la capacitat antitumoral en humans de la silibinina, una substància natural



*La silibinina, una substància natural que es troba a la planta Silybum marianum (card marí), és capaç de reduir les metàstasis cerebrals de càncer de pulmó resistents a la quimioteràpia i la radioteràpia.*

Principals mitjans: El Punt Avui, Diari de Girona, Cadena SER Girona, ARA, L'Empordà, Salutgirona, ACN, Europa Press, Diario Médico, Directe.cat, MakeMeFeed, InfolCS...

MARCH 2016

## Un estudi de l'ICO-IDIBGI i el CRM descobreix el mecanisme que connecta el metabolisme i la generació de cèl·lules mare tumorals



*L'estudi s'acaba de publicar a la prestigiosa revista Stem Cell Reports*  
*El descobriment obre una via per a la creació de noves teràpies*

Principals mitjans: Diari de Girona, El Punt/Avui, Cadena SER, Al Dia, Ara Girona, ACN, Europapress, (COFA) Confederación Farmacéutica Argentina, BioTech, Instituto Roche, ASOMEX, BloCat, Frontiers in Oncology, Orbital40, MakeMeFeed...

APRIL 2016

## Ferrallats Armangué i l'IDIBGI creen la beca Armangué d'investigació translacional en càncer



*El grup empresarial gironí aposta per impulsar la col·laboració entre el món empresarial i el científic*  
*Aquesta beca permetrà contractar amb caràcter indefinit un investigador de laboratori especialitzat en la lluita contra el càncer de còlon i de pulmó*

Principals mitjans: Diari de Girona, El Punt/Avui, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, Tot Girona, MakeMeFeed, InfolCS, Boletón de la Fundación para el Fomento en Asturias de la Investigación Científica Aplicada y la tecnología, ACN...

APRIL 2016

## IDIBGI convoca tres noves beques postresidència per potenciar la investigació clínica



*IDIBGI convoca tres noves beques postresidència per potenciar la investigació clínica*

Principals mitjans: Diari de Girona, El Punt/Avui, InfoICS, Salutgirona, Boletín de la Fundación José Luis Castaño - SEQC...

APRIL 2016

## El JCEM, la publicació més prestigiosa de l'àmbit de l'endocrinologia, considera un estudi de l'IDIBGI el Millor Article Publicat el 2015



*S'ha seleccionat entre més de 3.000 articles de tot el món*

Principals mitjans: Diari de Girona, El Punt/Avui, Siete Días Médicos, Corporació Catalana de Mitjans Audiovisuals, IM Médico Hospitalario

JUNE 2016

## Investigadors de l'IDIBGI participen en un estudi que identifica un dels gens de les persones primes



*L'estudi ha estat publicat recentment a la prestigiosa revista Nature Medicine*

*El descobriment obre una via per a la creació de noves teràpies per a pacients amb diabetis tipus 2*

Principals mitjans: Diari de Girona, El Punt/Avui, ACN, Europa Press, Cadena SER Girona, Catalunya Ràdio, Aldia.cat, Butlletí Campus Salut de la UdG, Primera Edición, El Economista, Cilberobn (Centro de Investigación Biomédica en Red), Divulgación Médica y de Salud, Revista Redes, Herencia Genética y Enfermedad...

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JUNE 2016

## IDIBGI atorga tres noves beques postresidència per potenciar la investigació clínica



*Els guardonats han estat la neuròloga Anna Cots, la farmacèutica Mireia Vila i el pneumòleg Eric Rojas, que s'incorporaran a la feina de recerca el proper mes de setembre*

Principals mitjans: Diari de Girona, El Punt/Avui, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, Butlletí del DIPSALUT, MakeMeFeed, Tot Girona, InfoICS, Salutgirona...

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JUNE 2016

## Investigadors de l'IDIBGI participen en el projecte europeu PEPPER per desenvolupar un sistema innovador de bomba d'insulina intel·ligent



*Es tracta d'un projecte transversal en el qual participen professionals de diversos països*

Principals mitjans: Diari de Girona, El Punt/Avui, Info ICS, Butlletí UdG, Butlletí BioCat, web CERCA (Centres de Recerca de Catalunya), web ESHorizonte2020 (Portal español del Programa Marco de Investigación de la Unión Europea), BioTech (Biotecnología en España)...

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JUNE 2016

## El descobriment d'alteracions en l'envelliment que promouen el càncer, projecte destacat de les jornades "Innovem ara, fem futur"



*Avui s'ha celebrat la segona trobada entre l'empresa Innomedyx, Fujitsu i l'IDIBGI per identificar els projectes de recerca gironins més interessants*  
*El projecte guanyador està encapçalat pel doctor Javier A. Menéndez*

Principals mitjans: Diari de Girona, El Punt/Avui, Info ICS, Tot Girona...

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JULY 2016

## El prestigiós rànquing internacional SCIMAGO reconeix l'IDIBGI com a millor centre de recerca en salut de l'Estat



*Aquesta classificació és un recurs per a l'avaluació científica que valora mundialment les universitats i les institucions focalitzades en la recerca*

Principals mitjans: Diari de Girona, El Punt/Avui, Europa Press, ACN, Vilaweb, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, Cadena SER, MakeMeFeed, La Informació, 20 minutos, Info ICS...

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JULY 2016

## El Ministerio de Economía dona llum verda al sistema de detecció de càncer de colon desenvolupat per l'empresa gironina GoodGutprematurs en un programa d'hospitalització domiciliària



*GoodGut és la tercera empresa spin-off de la Universitat de Girona i la primera de l'IDIBGI*  
*Aquest nou sistema s'implementarà com a cribratge en persones majors de 50 anys*

Principals mitjans: Diari de Girona, El Punt/Avui, ARA, 20 minutos, Europa Press, ACN, Cadena SER Girona, Info ICS, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, L'Empordà, Tot Girona, El Economista, Butlletí APTE (Asociación de Parques Científicos y Tecnológicos de España), Butlletí Digestiu Girona, Entremayores.es, MakeMeFeed...



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OCTOBER 2016

### **L'IDIBGI endega la campanya de mecenatge "Empresaris per la Recerca" a les comarques gironines**



*Un grup d'empresaris gironins han visitat les instal·lacions de l'IDIBGI per conèixer de prop la feina dels investigadors. Aquesta iniciativa ha de permetre impulsar la recerca gràcies a la col·laboració entre el món empresarial i el científic.*

Principals mitjans: Diari de Girona, El Punt/Avui, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, MakeMeFeed, Info ICS, Tot Salt...

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OCTOBER 2016

### **Un nou grup d'empreses gironines visiten l'IDIBGI dins la campanya de mecenatge "Empresaris per la Recerca"**



*La visita a les instal·lacions permet els empresaris conèixer de prop la feina dels investigadors. Aquesta iniciativa ha de permetre impulsar la recerca gràcies a la col·laboració entre el món empresarial i el científic.*

Principals mitjans: Diari de Girona, El Punt/Avui, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, MakeMeFeed, Info ICS, Tot Salt...

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NOVEMBER 2016

### **Més empreses gironines visiten l'IDIBGI dins la campanya de mecenatge "Empresaris per la Recerca"**



*La visita a les instal·lacions permet els empresaris conèixer de prop la feina dels investigadors. Aquesta iniciativa ha de permetre impulsar la recerca gràcies a la col·laboració entre el món empresarial i el científic.*

Principals mitjans: Diari de Girona, El Punt/Avui, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, MakeMeFeed, Info ICS, Tot Salt...

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NOVEMBER 2015

### **La Marató de TV3 2015 finançarà quatre projectes de l'IDIBGI per investigar sobre la diabetis i l'obesitat Cardiovascular (IDIBGI-UdG) per investigar malalties cardíaques**



*Els quatre projectes de recerca es repartiran més d'un milió d'euros.*

Principals mitjans: Diari de Girona, El Punt/Avui, ARA, TV3, Catalunya Ràdio, Cadena SER, L'Econòmic.cat, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, MakeMeFeed, Info ICS, Govern.cat

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DESEMBER 2016

## Concentrol, nova "Empresa Protectora" de l'IDIBGI



*L'empresa d'especialitats químiques s'afegeix a la iniciativa "Amics de l'IDIBGI", que pretén captar fons privats per promoure i millorar la recerca a l'àmbit gironí*

Principals mitjans: Diari de Girona, El Punt/Avui, Info ICS, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, MakeMeFeed...

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DESEMBER 2016

## La Fundació Castell de Peralada col·labora amb l'IDIBGI en un estudi sobre la relació entre la microbiota i el ferro



*La Fundació s'afegeix a la iniciativa "Amics de l'IDIBGI", que pretén captar fons privats per promoure i millorar la recerca a l'àmbit gironí*

*L'estudi, en fase preliminar, està encapçalat pel doctor Fernández-Real*

Principals mitjans: Diari de Girona, El Punt/Avui, Catalonia Today, Info ICS, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, MakeMeFeed...

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DESEMBER 2016

## L'IDIBGI organitza un concert solidari per recaptar fons per impulsar la recerca



*El recital, a càrrec del baríton saltenc Silveri de la O i del pianista Mark Hastings, se celebrarà diumenge 8 de gener a les 7 de la tarda a Les Bernardes de Salt*

*Aquest acte s'emmarca dins la campanya de mecenatge iniciada per l'IDIBGI fa uns mesos*

Principals mitjans: Diari de Girona, El Punt/Avui, Cadena SER Girona, Info ICS, Aldia.cat, Butlletí de la Fundació Catalana per a la Recerca i la Innovació, Tot Girona, MakeMeFeed...



# Cardio- vascular Area

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CARDIOVASCULAR GENETICS  
EPIDEMIOLOGY AND RESEARCH IN VASCULAR HEALTH



# CARDIOVASCULAR GENETICS

Recognised as a consolidated research group - 2014SGR2

Team involved in "Red de Enfermedades Cardiovasculares"

Team involved in "Centro de Investigación Biomédica en Red Enfermedades Cardiovasculares" (CIBER-CV)



## Group members

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### Group leader

Ramón Brugada Terradelles

### Senior researchers

Óscar Capuzano

Sara Pagans

Guillermo Pérez

Fabiana Scornik

Marcel Verges

### Clinical researchers

Jaime Aboal Viñas

Mari Núñez

Pablo Loma-Osorio

Isabel Ramió

### Postdoctoral researchers

Mireia Alcalde

Elisabet Selga

Mónica Coll

### Predoctoral researchers

Eric Cortada

Jesus Matés

Bernat del Olmo

Anna Fernández

Mel·lina Pinsach

### Post graduate researchers

Irene Mademont

Alexandra Pérez

### Technicians

Ferran Picó

### Trainees

Heleia Caro

David Carreras

Gemma Dulsat

### Support

Eloi Arias

Anna Iglesias

Laia Noguer

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## Strategic objectives

Reference center on a Spanish level for genetic research and analysis of pathologies associated with Sudden Cardiac Death.

### Research program

- Development of a clinical research program to investigate better diagnostic strategies and sudden cardiac death prevention

### Translational program

- Development of a clinical research program to investigate the best strategies to diagnosis and prevention of sudden death
- Development of a reference laboratory of genetic diagnosis

### Assistance program

- Development of a multidisciplinary program to give specialized medical assistance.
- Development of clinical guides to make clinical decision in context of genetics results.

### Dissemination program

- Development of awareness program about sudden death.
- Development of a training program for students and professionals.

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## Main line of research

Genetic and molecular basis of Sudden Cardiac Death.

## Publications

### Originals:

Guillem MS, Climent AM, Millet J, Berne P, Ramos R, Brugada J, Brugada R. (2016). Spatiotemporal Characteristics of QRS Complexes Enable the Diagnosis of Brugada Syndrome Regardless of the Appearance of a Type 1 ECG. *Journal of Cardiovascular Electrophysiology*, 27(5):563–70. doi: 10.1111/jce.12937. PMID: 26799774.

Campuzano O, Fernández-Falgueras A, Iglesias A, Brugada R. (2016). Brugada Syndrome and PKP2: Evidences and uncertainties. *International Journal of Cardiology*, 214:403–5. doi: 10.1016/j.ijcard.2016.03.194. PMID: 27085656.

Moncayo-Arlandi J, Guasch E, Sanz-de la Garza M, Casado M, Garcia NA, Mont L, Sitges M, Knöll R, Buyandelger B, Campuzano O, Diez-Juan A, Brugada R. (2016). Molecular disturbance underlies to arrhythmogenic cardiomyopathy induced by transgene content, age and exercise in a truncated PKP2 mouse model. *Human Molecular Genetics*, 25(17):3676–3688. doi: 10.1093/hmg/ddw213. PMID: 27412010.

Toro R, Pérez-Serra A, Campuzano O, Moncayo-Arlandi J, Allegue C, Iglesias A, Mangas A, Brugada R. (2016). Familial Dilated Cardiomyopathy Caused by a Novel Frameshift in the BAG3 Gene. *PLoS One*, 11(7):e0158730. doi: 10.1371/journal.pone.0158730. PMID: 27391596.

Sanz-de la Garza M, Grazioli G, Bijnens BH, Sarvari SI, Guasch E, Pajuelo C, Brotons D, Subirats E, Brugada R, Roca E, Sitges M. (2016). Acute, Exercise Dose-Dependent Impairment in Atrial Performance During an Endurance Race: 2D Ultrasound Speckle-Tracking Strain Analysis. *JACC Cardiovascular Imaging*, 9(12):1380–1388. doi: 10.1016/j.jcmg.2016.03.016. PMID: 27544898.

Izquierdo I, Rosa I, Bravo SB, Guitián E, Pérez-Serra A, Campuzano O, Brugada R, Mangas A, García Á, Toro R. (2016). Proteomic identification of putative biomarkers for early detection of sudden cardiac death in a family with a LMNA gene mutation causing dilated cardiomyopathy". *Journal of Proteomics*, 148:75–84. doi:10.1016/j.jprot.2016.07.020. PMID: 27457270.

Oliva A1, Grassi VM, Campuzano O3, Brion M, Arena V, Partemi S, Coll M, Pascali VL, Brugada J, Carracedo A, Brugada R. (2016). Medico-legal perspectives on sudden cardiac death in young athletes. *International Journal of Legal Medicine*. doi: 10.1007/s00414-016-1452-y. PMID: 27654714.

Mademont-Soler I, Pinsach-Abuin ML, Riuró H, Mates J, Pérez-Serra A, Coll M, Porres JM, Del Olmo B, Iglesias A, Selga E, Picó F, Pagans S, Ferrer-Costa C, Sarquella-Brugada G, Arbelo E, Cesar S, Brugada J, Campuzano Ó, Brugada R. (2016). Large Genomic Imbalances in Brugada Syndrome. *PLoS One*, 11(9):e0163514. doi: 10.1371/journal.pone.0163514. PMID: 27684715.

Pérez-Serra A, Toro R, Sarquella-Brugada G, de Gonzalo-Calvo D, Cesar S, Carro E, Llorente-Cortes V, Iglesias A, Brugada J, Brugada R, Campuzano O. (2016). Genetic basis of dilated cardiomyopathy. *International Journal of Cardiology*, 224:461–472. doi:10.1016/j.ijcard.2016.09.068. PMID: 27736720.

Tarradas A, Pinsach-Abuin ML, Mackintosh C, Llorà-Batlle O, Pérez-Serra A, Batlle M, Pérez-Villa F, Zimmer T, Garcia-Bassets I, Brugada R, Beltran-Alvarez P, Pagans S. (2016). Transcriptional regulation of the sodium channel gene (SCN5A) by GATA4 in human heart. *Journal of Molecular and Cellular Cardiology*, 102:74–82. doi: 10.1016/j.yjmcc.2016.10.013. PMID: 27894866. I.F.: 4.87.

Olallo Sanchez , Oscar Campuzano , Anna Fernández-Falgueras, Georgia Sarquella-Brugada, Sergi Cesar, Irene Mademont, Jesus Mates, Alexandra Pérez-Serra, Monica Coll, Ferran Pico, Anna Iglesias, Coloma Tirón, Catarina Allegue, Ramon Brugada. (2016). Natural and Undetermined Sudden Death: Value of Post-Mortem Genetic Investigation. *Plos One*, 8;11(12):e0167358. doi: 10.1371/journal.pone.0167358. PMID: 27930701.

Cristina Bosch, Oscar Campuzano, Georgia Sarquella-Brugada, Sergi Cesar, Alexandra Perez-Serra, Monica Coll, Irene Mademont, Jesus Mates, Bernat del Olmo, Anna Iglesias, Josep Brugada, Volker Petersen, Ramon Brugada. (2016). A novel variant in RyR2 causes familial catecholaminergic polymorphic ventricular tachycardia. *Forensic Science International*, 270:173–177. doi: 10.1016/j.forsciint.2016.12.001 PMID: 27988446.

### Reviews:

de Gonzalo-Calvo D, Quezada M, Campuzano O, Pérez-Serra A, Broncano J, Ayala R, Ramos M, Llorente-Cortes V, Blasco-Turrión S, Morales FJ, Gonzalez P, Brugada R, Mangas A, Toro R. (2016). Familial dilated cardiomyopathy: A multidisciplinary entity, from basic screening to novel circulating biomarkers. *International Journal of Cardiology*, 228:870–880. doi: 10.1016/j.ijcard.2016.11.045. PMID: 27889554.

Campuzano O, Perez-Serra A, Iglesias A, Brugada R. (2016). Genetic basis of Atrial Fibrillation. *Genes and Diseases* 24, 257-262. doi: 10.1016/j.gendis.2016.09.003.

Oliva A, Grassi V, Campuzano O, Brion M, Partemi S, Coll M, Pascali V, Brugada J, Carracedo A, Brugada R. Sudden cardiac death in young athletes: clinical, genetic and forensic implications. *Int J Legal Med.* 2016 Sep 21.

Sarquella-Brugada G, Campuzano O, Cesar S, Iglesias A, Fernandez A, Brugada J, Brugada R. (2016). Sudden infant death syndrome caused by cardiac arrhythmias: only a matter of genes encoding ion channels?. *International Journal of Legal Medicine*, 130(2):415-20. doi: 10.1007/s00414-016-1330-7. PMID: 26872470.

Vergés M. (2016). Retromer in Polarized Protein Transport. *International review of cell and molecular biology*, 3;323:129-79. Doi: 10.1016/bs.ircmb.2015.12.005. PMID: 26944621.

Ali I, Ramage H, Boehm D, Dirk LM, Sakane N, Hanada K, Pagans S, Kaehlcke K, Aull K, Weinberger L, Triebel R, Schnoelzer M, Kamada M, Houtz R, Ott M. (2016). The HIV-1 Tat Protein Is Monomethylated at Lysine 71 by the Lysine Methyltransferase KMT7. *The journal of biological chemistry*, 29;291(31):16240-8. doi: 10.1074/jbc.M116.735415. PMID: 27235396.

**Editorial:**

Campuzano O, Brugada R. Molecular autopsy in sudden cardiac death. *J Foren Path* 2016, 1: e102.

Campuzano O, Fernandez A, Iglesias A, Brugada R. Brugada Syndrome and PKP2: evidences and uncertainties. *Int J Cardiol.* 2016 Apr 7;214:403-405 .

**Books:**

Campuzano O, Brugada R. Capítol: Arrhythmogenic syndromes associated with Sudden Cardiac Death. *Llibre: Sudden Cardiac Death (SCD): Prevalence, Predictors and Clinical Perspectives.* NOVA editorial, 2016

Fernández-Falgueras A, Campuzano O, Iglesias A, Brugada R. Capítol: Genetics of Brugada Syndrome. *Llibre: Recent Advances in Cardiac Arrhythmia.* Avid Science Publications, 2016

Fernández-Falgueras A; Campuzano O, Iglesias A,; Brugada R,. Capítol: Muerte súbita cardíaca: bases genéticas e implicaciones familiares. *Llibre: Arritmias y muerte subita.* 2016

Sarquella-Brugada G, Bautista C, Nascimento A, Ortez C, Campuzano O. *El corazón, un músculo más en las Lamino-patías.* Redacción Médica, 2016.

Campuzano O, Sarquella-Brugada G, Brugada R, Brugada J. Chapter: Brugada Syndrome. *Book: Clinical CardioGenetics.* 2º Edition. Editors: Bert Baars, Pieter Doevendans, Arjan Houweling, Peter van Tintelen, 2016.

Campuzano O, Sarquella-Brugada G, Arbelo E, Brugada R, Brugada J. Capítol: Síndrome de Brugada. *Libro: CARDIO-ARITMIAS,* Grupo CTO, 2016.

**Grants for research in progress**

- Grup de Recerca Reconegut per la Generalitat de Catalunya  
Reference: 2014 SGR 2  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Ramon Brugada
- Ayudas predoctorales de formación en investigación en salud (FI12/00540)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2012 - 2016  
Ramon Brugada  
Beneficiary: Jesús Mates
- Síndromes hereditarios en la muerte súbita inexplicada. Estudio genético. (PI14/01773)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2014 - 2017  
Ramon Brugada/Oscar Campuzano
- PTA2014-10026-I- Tècnic de suport a infraestructures  
Sponsored by: MINECO  
Duration: 2015-2018  
Ramon Brugada  
Beneficiary: Núria Rivera
- Suport a les activitats del grup de recerca  
Sponsored by: AGAUR  
Duration: 2015-2017  
Ramon Brugada
- Paper de les CNVS (copy number variations) en la mort sobtada  
Sponsored by: BASIC SEC2015  
Duration: 2015-2016  
Ramon Brugada



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- Pedi-SUDS. Translational genetic medicine in paediatric sudden death  
Sponsored by: Fundació Daniel Bravo  
Duration: 2015–2018  
Ramon Brugada
  - Genetic and molecular basis of arrhythmogenic right ventricular cardiomyopathy: translation into clinical care  
Sponsored by: La Marató de TV3  
Duration: 2015–2018  
Ramon Brugada
  - Improving diagnosis and treatment of catecholaminergic polymorphic ventricular tachycardia: integrating clinical and basic science (AC15/00032)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016–2018  
Ramón Brugada
  - Early detection and prevention of neonatal sudden death using ECG and massive ultrasequencing genetic analysis  
Sponsored by: La Marató de TV3  
Duration: 2015–2018  
Oscar Campuzano
  - Unravelling the genetic basis of laminopathies: use of Next Generation Sequencing technology and translation into clinical practice. A pilot study  
Sponsored by: Fundación Andrés Marcio  
Duration: 2016  
Oscar Campuzano, Dra Georgia Sarquella-Brugada, Dr Josep Brugada, Dr Ramon Brugada
  - Role of nonexonic regions in Brugada Syndrome (SAF2015-70823-R)  
Sponsored by: Ministerio de Economía y Competitividad, Retos de la Sociedad  
Duration: 2016– 2018  
Sara Pagans, Miquel Duran  
Beneficiary entity: Universitat de Girona
  - Mecanismes epigenètics de regulació de l'expressió del canal de sodi cardíac (MPCUdG2016/039)  
Sponsored by: Ajuts per a la millora de la productivitat científica dels grups de recerca de la Universitat de Girona  
Duration: 2016– 2018  
Guillermo J. Pérez, Sara Pagans  
Beneficiary entity: Universitat de Girona
  - Regulació del tràfic del canal de sodi cardíac dependent de voltatge (MPCUdG2016/138)  
Sponsored by: Ajuts per a la millora de la productivitat científica dels grups de recerca de la Universitat de Girona  
Duration: 2016–2018  
Marcel Vergés  
Beneficiary entity: Universitat de Girona
  - Pathophysiologic and therapeutic in vitro assessment of patient-specific iPS cell-derived cardiomyocytes (Expedient 20153910)  
Duration: 2016–2019  
Fabiana Scornik  
Beneficiary entity: Universitat de Girona
  - Pathophysiologic and therapeutic in vitro assessment of patient-specific iPS cell-derived cardiomyocytes  
Pla: 350130113 Programa de Doctorat en Biologia Molecular, Biomedicina i Salut  
Predoctorate researchers: Rebecca Martínez Moreno  
Duration: 2016–2018  
Director: Fabiana Scornik
  - Cardiovascular Diseases. Factores Genéticos, biológicos y clínicos en el diagnóstico, tratamiento y curso evolutivo de las miocardiopatías, la insuficiencia cardíaca y el trasplante cardíaco (CIBERCV)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016–  
Ramón Brugada

## Patents

- Authors: Ramon Brugada  
Title: Aparato para el entrenamiento del masaje cardíaco  
Patent number: 201431546  
Corporation: Institut d'Investigació Biomèdica de Girona | Universitat de Girona
- Authors: Melanie Ott, Sara Pagans  
Title: Methylated Tat polypeptides and methods to use thereof  
Patent number: 8,031,350  
Corporation: The J. David Gladstone Institutes
- Authors: Melanie Ott, Sara Pagans  
Title: Screening method for the identification of inhibitors of HIV Tat methylation by the lysine methyltransferase Set7/9  
Patent number: US 8,580,492 B2  
Corporation: The J. David Gladstone Institutes

# EPIDEMIOLOGY AND RESEARCH IN VASCULAR HEALTH

Team involved in “Red de Investigación en Actividades Preventivas y Promoción de la Salud” (redIAPP)  
Recognised as a consolidated research group - 2014SGR902

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## Group members

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### Group leader

Rafael Ramos

### Medical researchers

Maria del Mar Garcia

### Post-graduate researchers

Pascual Solanas

Carlos Cerezo

Miquel Quesada

Elisabet Balló

### Technicians

Ruth Martí

Anna Ponjoan

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## Strategic objectives

1. Analyse the role of emerging risk factors and asymptomatic atherosclerosis as well as the co-morbidity of the patient in the prediction of cardiovascular risk.
2. Develop cardiovascular risk functions adapted to specific subpopulation groups (diabetes, patients with a family history of vascular disease, obesity).
3. Evaluate the effectiveness and efficiency of different actions for the prevention and control of atherosclerotic disease in Primary Healthcare using the Information System for the Development of Research in Primary Care (SIDIAP).
4. Analyse the role of cardiovascular risk factors and their control in the incidence of dementias.

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## Main line of research

To improve the detection and control of patients with intermediate cardiovascular risk and the detection of CV disease in the asymptomatic phase and analyse the cost effectiveness of the actions taken for the prevention of cardiovascular disease.

## Publications

### Originals:

Ramos R, Albert X, Sala J, García-Gil M, Elosua R5, Marrugat J, Ponjoan A, Grau M, Morales M, Rubió A, Ortuño P, Alves-Cabreros L, Martí-Lluch R; REGICOR Investigators. (2016) Prevalence and Incidence of Q wave Unrecognized Myocardial Infarction in General Population: Diagnostic Value of the Electrocardiogram. The REGICOR study. *International Journal of Cardiology*, 15;225:300-305. doi: 10.1016/j.ijcard.2016.10.005. PMID: 27744207.

Gomez-Sanchez L, Garcia-Ortiz L, Patino-Alonso MC, Recio-Rodriguez JI, Fernando R, Marti R, Agudo-Conde C, Rodriguez-Sanchez E, Maderuelo-Fernandez JA, Ramos R, Gomez-Marcos MA2,3,9; MARK Group. (2016). Association of metabolic syndrome and its components with arterial stiffness in Caucasian subjects of the MARK study: a cross-sectional trial. *Cardiovascular Diabetology*, 15(1):148. doi: 10.1186/s12933-016-0465-7. PMID: 27776526.

García-Gil M, Parramon D, Comas-Cufí M, Martí R, Ponjoan A, Alves-Cabreros L, Blanch J, Petersen I, Elosua R, Grau M5, Salvador B6, Ramos R. (2016). Role of renal function in cardiovascular risk assessment: A retrospective cohort study in a population with low incidence of coronary heart disease. *Preventive medicine*, 89:200-6. doi: 10.1016/j.ypmed.2016.06.004. PMID: 27287663.

Alves-Cabreros L, García-Gil M, Comas-Cufí M, Martí R, Ponjoan A, Parramon D, Blanch J, Ramos R. (2016). Diabetes and new-onset atrial fibrillation in a hypertensive population. *Annals of medicine*, 48:119-27. doi: 10.3109/07853890.2016.1144930. PMID: 26939743.

Baena-Díez JM, Peñafiel J, Subirana I, Ramos R, Elosua R, Marín-Ibañez A, Guembe MJ, Rigo F, Tormo-Díaz MJ, Moreno-Iribas C, Cabré JJ, Segura A, García-Lareo M, Gómez de la Cámara A, Lapetra J, Quesada M, Marrugat J, Medrano MJ, Berjón J, Frontera G, Gavrila D, Barricarte A, Basora J, García JM, Pavone NC, Lora-Pablos D, Mayorál E, Franch J, Mata M, Castell C, Frances A, Grau M; FRESCO Investigators. (2016). Risk of Cause-Specific Death in Individuals With Diabetes: A Competing Risks Analysis. *Diabetes Care*, 39(11):1987-1995. Doi: 10.2337/dc16-0614. PMID: 27493134.

Velescu A, Clara A, Peñafiel J, Grau M, Degano IR, Martí R, Ramos R, Marrugat J, Elosua R. (2016). Peripheral Arterial Disease Incidence and Associated Risk Factors in a Mediterranean Population-based Cohort. The REGICOR Study.

*European Journal of Vascular and Endovascular Surgery*, 51:696-705. Doi: 10.1016/j.ejvs.2015.12.045. PMID: 26905621.

Ramos R, García-Gil M, Comas-Cufí M, Quesada M, Marrugat J, Elosua R, Sala J, Grau M, Martí R, Ponjoan A, Alves-Cabreros L, Blanch J, Bolívar B. (2016). Statins for Prevention of Cardiovascular Events in a Low-Risk Population With Low Ankle Brachial Index. *Journal of the American College of Cardiology*, 67(6): 630-640. doi: 10.1016/j.jacc.2015.11.052. PMID: 26868687.

García-Ortiz L, Recio-Rodríguez JI, Mora-Simón S, Guillamet J, Martí R, Agudo-Conde C, Rodríguez-Sánchez E, Maderuelo-Fernández JA, Ramos-Blanes R, Gómez-Marcos MA; MARK Group. (2016). Vascular structure and function and their relationship with health-related quality of life in the MARK study. *BMC Cardiovascular Disorders*, 16(1):95. doi: 10.1186/s12872-016-0272-9. PMID: 27177028.

García MD, Blanch J, Comas M, Daunis-Estadella J, Bolívar B, Ponjoan A, Martí R, Alves L, Ramos R. (2016). Patterns of statin use and cholesterol goal attainment in a high risk cardiovascular population; a retrospective study of primary care electronic medical records. *Journal of clinical lipidology*, 76 10(1):134-42. doi: 10.1016/j.jacl.2015.10.007. PMID: 26892130.

Fina F, Medina M, Mendez-Boo L, Herosilla E, Elorza JM, Garcia MD, Ramos R, Bolívar B, Javaid MK, Edwards CJ, Cooper C, Arden NK, Prieto-Alhambra D. (2016). The descriptive epidemiology of rheumatoid arthritis in Catalonia: a retrospective study using routinely collected data. *Clinical Rheumatology*, 35(3):751-7. doi: 10.1007/s10067-014-2801-1. PMID: 25344777.

### Multicentric:

Bentham J, Cesare MD, Stevens GA, Zhou B, Bixby H, Cowan M, ..., Ramos R et al. (2016). A century of trends in adult human height. *Elife* 5 2016; Jul 26;5. pii: e13410. doi: 10.7554/eLife.13410. PMID: 27458798.

Di Cesare M, Bentham J, Stevens GA, Zhou B, Danaei G, Lu Y, Bixby H, Cowan MJ, Riley LM, Hajifathalian K, Fortunato L, Taddei C, Bennett JE, Ikeda N, Khang YH, Kyobutungi C, Laxmaiah A, Li Y, Lin HH, Miranda JJ, Mostafa A, Turley ML, ..., Ramos R et al. (2016). Trends in adult body-mass index in 200 countries from 1975 to 2014: a pooled analysis of 1698 population-based measurement studies with 19.2 million participants. *Lancet*, 387(10026): 1377-1396. doi: 10.1016/S0140-6736(16)30054-X. PMID: 27115820.

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Zhou B, Lu Y, Hajifathalian K, Bentham J, Di Cesare M, Danaei G, Bixby H, Cowan MJ, Ali MK, Taddei C, Lo WC, Reis-Santos B, Stevens GA, Riley LM, Miranda JJ, Bjerregaard P, Rivera JA, Fouad HM, Ma G, Mbanya JC, McGarvey ST, Mohan V, Onat A, Pilav A, ... Ramos R, et al. (2016). Worldwide trends in diabetes since 1980: a pooled analysis of 751 population-based studies with 4.4 million participants. *Lancet*, 387(10027): 1513-1530. doi: 10.1016/S0140-6736(16)00618-8. PMID: 27061677.

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### Grants for research in progress

- Red de Investigación en Actividades Preventivas y Promoción de la Salud: redIAPP (RD12/0005/0002)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2013 - 2015  
Rafael Ramos
- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 902)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Rafael Ramos
- Coste-efectividad y seguridad de la aspirina en la prevención de enfermedad vascular, cáncer y mortalidad en España. Estudio JOANA (Joint of data on Aspirin and heAlth outcomes).  
Sponsored by: Instituto de Salud Carlos III.  
Duration: 2014 - 2016.  
Rafael Ramos



# **Metabolism and Inflammation Area**

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**MICROBIOLOGY AND INFECTION OF CRITICALLY ILL PATIENTS**

**DIGESTIVE DISEASES AND MICROBIOTA RESEARCH GROUP**

**NUTRITION, EUMETABOLISM AND HEALTH**

**OBESITY AND CARDIOVASCULAR RISK IN PEDIATRY**

**MATERNAL AND FETAL METABOLIC RESEARCH**

**RESPIRATORY GROUP: BRONCHIECTASIES  
AND OTHER RESPIRATORY DISEASE**



# MICROBIOLOGY AND INFECTION OF CRITICALLY ILL PATIENTS

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## Group members

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### Group leader

Josep Maria Sirvent

### Medical researchers

Anna Baró

Cristina Murcia

Carolina Lorencio

Patricia Ortiz

Montse Motjé

Abdó Tachés

### Nursing staff

Aaron Castanera

Ana Lobo

Susanna Martín

Nuri Vila

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## Strategic objectives

More than 15 years ago a research group was created in the IdIBGi called "Microbiology and inflammation". This group included all research projects on infections of the University Hospital of Girona Doctor Josep Trueta as well as a group from the University of Girona working in conjunction with them. Also Dr. Sirvent, is involved in CIBER group on respiratory diseases (CibeRes) led by Dr. Antoni Torres (Hospital Clinic)

In order to update the group and suitably redefine the projects and research staff actively involved, we will create an internal specific, dynamic group for the study of infectious diseases in the critically ill patient: Study Group of Microbiology and Infection in Critically ill patients (MI-ICU).

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## Main line of research

- Studies of Microbiology and Infections in the critically ill patient.
- Study of sepsis.
- Study of community-acquired pneumonia.
- Study of sepsis in glycemia
- Nursing procedure in security and sepsis in critical patient



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## **Publications**

### **Reviews:**

Sirvent JM. (2016). Antibiotic prophylaxis against ventilator-associated pneumonia in patients with coma: Where are we now?. *Medicina intensiva*, pii: S0210-5691(16)30190-5. doi: 10.1016/j.medin.2016.09.005. PMID: 27998646.

### **Original:**

Sirvent JM, Gil M, Alvarez T, Martin S, Vila N, Colomer M, March E, Loma-Osorio P, Metje T. (2016). Lean techniques to improve the flow of critically ill patients in a health region with its epicenter in the intensive care unit of a reference hospital. *Medicina intensiva*, 40(5):266-72. doi: 10.1016/j.medin.2015.08.005. PMID: 26560019.

Murcia-Gubianas C, Ching CV, Sirvent JM.(2016). Air embolisms in pulmonary artery, right atrium and portal vein: an unusual case of decompression sickness. *Intensive Care Medicin*, doi: 10.1007/s00134-016-4614-y. PMID: 27826633.

Raurell-Torredà M, Argilaga-Molero E, Colomer-Plana M, Ródenas-Fransico A, Ruiz-Garcia MT, Uya Muntaña J. (2016). Optimising non-invasive mechanical ventilation: Which unit should care for these patients? A cohort study. *Australian critical care*. pii: S1036-7314(16)30078-9. doi: 10.1016/j.aucc.2016.08.005.

Tomasa Irriguible TM, Sabater Riera J, Poch López de Briñas E, Fort Ros J, Lloret Cora MJ, Roca Antònio J, Navas Pérez A, Ortiz Ballujera P, Servià Goixart L, González de Molina Ortiz FJ, Rovira Anglès C, Rodríguez López M, Roglan Piqueras A; Investigadores del estudio REGISFRA. (2016). Current practice in continuous renal replacement therapy: An epidemiological multicenter study. *Medicina Intensiva*. pii: S0210-5691(16)30147-4. doi: 10.1016/j.medin.2016.07.002.

# DIGESTIVE DISEASES AND MICROBIO-TA RESEARCH GROUP

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## Group members

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### Group leaders

Xavier Aldeguer and Jesús Garcia-Gil

### Medical researchers

Esther Fort Martorell

Carlos Huertas Nadal

Virgínia Piñol Sánchez

### Post-doctoral researcher

Anna Bahí Salavedra

### Post-graduate researchers

David Busquets Casals

Josep Oriol Miquel

Mireia Vila Currius

Marta Malagón Rodríguez

Carmen López Niñez

Leyanira Torrealba Medina

Sílvia Virolés

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## Strategic objectives

### 1. Dysbiosis indicators

Working in a wide-range study on the correlation of the indexes developed during the previous period (MC and CRC) with clinical determinants of intestinal diseases to determine risk, pre-screening, diagnosis and monitoring bowel disease.

These tools for monitoring the state of the intestinal microbiota allow to deepen in the concept of healing mucosa (mucosa healing) a condition that involves the reversal of the situation of dysbiosis to baseline or normal situations.

### 2. AIEC

Identify genetic elements involved in "Adherent-Invasive Escherichia coli" pathotype and molecular tools design for their detection in patients with Crohn's disease.

### 3. Hepatopancreatic line

Explore the establishment of a new line in the hepatopancreatic field focused on exploring potential microbiological markers in feces in patients with chronic pancreatitis that evolve into pancreatic cancer and patients with steatosis liver that develop hepatocellular carcinoma.

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## Main line of research

The study of the microbiota in all digestive diseases (inflammatory bowel disease, colorectal cancer, chronic pancreatitis, pancreatic cancer, hepatic steatosis, hepatocarcinoma, etc), in order to find microbial markers as tools prognosis, diagnosis and monitoring and support of these digestive diseases.

## Publications

### Original:

Lopez-Siles M, Martinez-Medina M, Suris-Valls R, Aldeguer X, Sabat-Mir M, Duncan SH, Flint HJ, Garcia-Gil LJ. (2016) .Changes in the Abundance of Faecalibacterium prausnitzii Phylogroups I and II in the Intestinal Mucosa of Inflammatory Bowel Disease and Patients with Colorectal Cancer. *Inflammatory Bowel Diseases*, 22(1):28-41. doi: 10.1097/MIB.0000000000000590. PMID: 2659550.

## Grants for Research in Progress

- Effect of prebiotic FOS on intestinal abundance of Faecalibacterium Prausnitzii in patients with crohn's disease  
Sponsored by: Fundació hospital universitari Vall d'Hebron  
Duration: 2015-  
Xavier Aldeguer Manté
- Evaluación del impacto de lactest en el pensamiento diagnóstico y en el manejo terapéutico del paciente y reproducibilidad (teste-retest), para el diagnóstico de la hipolactasia en adultos y población anciana  
Sponsored by: Venter Pharma SL  
Duration: 2015-  
Xavier Aldeguer Manté
- Effect of mezavant MMX® on microbiota of patients with ulcerative colitis  
Sponsored by: Shire pharmaceutical  
Duration: 2013-  
Xavier Aldeguer Manté
- Inflammatory bowel diseases and intestinal microbiota insights- 1st joint symposia – Catalunya-Israel  
Sponsored by: AGAUR  
Duration: 2015-  
Xavier Aldeguer Manté
- Study the effect of Creon® on intestinal dysbiosis balance in patients with Pancreatic Exocrine Insufficiency (PEI) due to chronic pancreatitis  
Sponsored by: BGP product operations SL  
Duration: 2015-  
Xavier Aldeguer Manté
- Grado de disbiosis bacteriana como nueva herramienta para definir mejor el concepto de remisión profunda en la enfermedad inflamatoria intestinal. Estudio piloto.  
Sponsored by: GETECCU

Duration: 2015-2016  
Xavier Aldeguer Manté

- Desarrollo de un sistema no invasivo para el cribado de cáncer colorrectal basado en marcadores bacterianos en heces (RTC-2016-5017-1)  
Sponsored by: Ministerio de Economía y Competitividad  
Duration: 2016- 2018  
Xavier Aldeguer Manté
- Efecte del Golimumab en la modulació de la Microbiota intestinal. Estudi Pilot.  
Sponsored by: Merck & Co.,Inc.  
Duration: 2016- 2018  
Xavier Aldeguer Manté
- Grado de disbiosis bacteriana como nueva herramienta para definir mejor el concepto de remisión profunda en la enfermedad inflamatoria intestinal. Estudio piloto.  
Sponsored by: GETECCU  
Duration: 2015- 2016  
Xavier Aldeguer Manté

## Patents

- Authors: Xavier Aldeguer Manté; Mariona Serra Pagès; Jesús García Gil; Teresa Mas de Xaxars  
Title: Method for diagnosing colorectal cancer from a human feces sample by quantitative PCR, primers and kit  
Patent number: PXEP1522/2013  
Date granted: 04/03/2014  
Corporation: Institut d'Investigació Biomèdica de Girona | Universitat de Girona  
Spin-Off: GOODGUT SL
- Authors: Xavier Aldeguer, Jesús Garcia-Gil, Margarita Martínez, Mireia López-Siles  
Title: Method for the detection, follow up and/or classification of intestinal diseases  
Patent number: 15382427.1  
Corporation: Institut d'Investigació Biomèdica de Girona | Universitat de Girona  
Spin off: GOODGUT SL

# NUTRITION, EUMETABOLISM AND HEALTH

Team involved in:



Team involved in “Centro de Investigación Biomédica en Red Fisiopatología de la Obesidad y Nutrición” (CIBERObn)  
Recognised as a consolidated research group - 2014 SGR1480

## Group members

### Group leader

José-Manuel Fernández-Real

### Post-doctoral researchers

José María Moreno (CIBERObn)

Francisco José Ortega (CIBERObn)

### Post-graduate researchers

Mariona Esteve

Gemma Xifra

Jéssica Latorre

Lisset de la Vega

### Medical researchers

Josefina Biarnés

David Pérez

Elisabet Costa

Mònica Recasens

Eduardo Esteve

Wifredo Ricart

Merçè Fernández

Lídia Sojo

### Technicians

Isma Ishaq

Yenny Leal

Mónica Sabater

### Nursing staff

Oscar Rovira (CIBERObn)

Anna Pibernat

Emili Loshuertos

### Dietitian

Cristina Planella

## Strategic objectives

- Study of Microbiome Signature of metabolic diseases:
  - Obesity
  - Type-2 diabetes
  - NASH
- Circulating microRNA profile of metabolic diseases
- Epigenomic Signature of metabolic diseases
- New players and mechanisms in adipose tissue physiology
- Small intestine transcriptomic signature of metabolic diseases

## Main line of research

- Inflammation and insulin resistance.
- Proteomics of the adipose tissue.
- Metabolism of iron and insulin resistance.
- Biomarkers for obesity, insulin resistance and Type-2 diabetes.
- Bone as an endocrine organ.
- Vascular disease and inflammation.
- Sulfide biosynthesis in adipose tissue in association with insulin resistance.
- Antimicrobial function of small epithelial intestine and paneth cells in obesity-associated metabolic disturbances.

## Publications

### Originals::

Moreno-Navarrete JM, Blasco G, Xifra G, Karczewska-Kupczewska M, Stefanowicz M, Matulewicz N, Puig J, Ortega F, Ricart W, Strackowski M, Fernández-Real JM. (2016). Obesity Is Associated With Gene Expression and Imaging Markers of Iron Accumulation in Skeletal Muscle. *Journal of clinical endocrinology and metabolism*, 101(3):1282-9. Doi: 10.1210/jc.2015-3303. PMID: 26765579.

Moreno-Navarrete JM, Moreno M, Puig J, Blasco G, Ortega F, Xifra G, Ricart W, Fernández-Real JM. (2016). Hepatic iron content is independently associated with serum hepcidin levels in subjects with obesity. *Clinical Nutrition*, pii: S0261-5614(16)31262-6. doi: 10.1016/j.clnu.2016.09.022. PMID: 27745814.

López Navarro E, Ortega FJ, Francisco-Busquets E, Sabater-Masdeu M, Álvarez-Castaño E, Ricart W, Fernández-Real JM. (2016). Thyroid Hormone Receptors Are Differentially Expressed in Granulosa and Cervical Cells of Infertile Women. *Thyroid*, 26(3):466-73. doi: 10.1089/thy.2015.0416. PMID: 26715425.

de Courten B, Moreno-Navarrete JM, Lyons J, Soldatos G, de Courten M, Dougherty S, Forbes J, Fernández-Real JM. (2016). Contrasting association of circulating sCD14 with insulin sensitivity in non-obese and morbidly obese subjects. *Molecular nutrition & food research*, Jan;60(1):103-9. doi: Thyroid Hormone Receptors Are Differentially Expressed in Granulosa and Cervical Cells of Infertile Women. PMID: 26114238.

Sauchelli S, Jiménez-Murcia S, Sánchez I, Riesco N, Custal N, Fernández-García JC, Garrido-Sánchez L, Tinahones FJ, Steiger H, Israel M, Baños RM, Botella C, de la Torre R, Fernández-Real JM, Ortega FJ, Frühbeck G, Granero R, Tárrega S, Crujeiras AB, Rodríguez A, Estivill X, Beckmann JS, Casanueva FF, Menchón JM, Fernández-Aranda F. (2016). Orexin and sleep quality in anorexia nervosa: Clinical relevance and influence on treatment outcome. *Psychoneuroendocrinology*, 65:102-8. doi: 10.1016/j.psyneuen.2015.12.014. PMID: 26741881.

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Prats-Puig A, Moreno M, Carreras-Badosa G, Bassols J, Ricart W, López-Bermejo A, Fernández-Real JM. (2016). Serum Ferritin Relates to Carotid Intima-Media Thickness in Offspring of Fathers With Higher Serum Ferritin Levels. *Arteriosclerosis Thrombosis and Vascular Biology*, 36(1):174-80. doi: 10.1161/ATVBAHA.115.306396. PMID: 26586658.

Moreno-Navarrete JM, Moreno M, Ortega F, Sabater M, Xifra G, Ricart W, Fernández-Real JM. (2016). C1SD1 in association with obesity-associated dysfunctional adipogenesis in human visceral adipose tissue. *Obesity (Silver Spring)*, 24(1):139-47. doi: 10.1002/oby.21334. PMID: 26692580.

Ortega FJ, Vilallonga R, Xifra G, Sabater M, Ricart W, Fernández-Real JM. (2016). Bariatric surgery acutely changes the expression of inflammatory and lipogenic genes in obese adipose tissue. *Surgery for Obesity and Related Diseases*, 12(2):357-62. Doi: 10.1016/j.soard.2015.08.498. PMID: 26525371

Moreno-Navarrete JM, Blasco G, Xifra G, Karczewska-Kupczewska M, Stefanowicz M, Matulewicz N, Puig J, Ortega F, Ricart W, Strackowski M, Fernández-Real JM. (2016). Obesity Is Associated With Gene Expression and Imaging Markers of Iron Accumulation in Skeletal Muscle. *Journal of clinical endocrinology and metabolism*, 101(3):1282-9. Doi: 10.1210/jc.2015-3303. PMID: 26765579.

Moreno-Navarrete JM, Moreno M, Puig J, Blasco G, Ortega F, Xifra G, Ricart W, Fernández-Real JM. (2016). Hepatic iron content is independently associated with serum hepcidin levels in subjects with obesity. *Clinical Nutrition*, pii: S0261-5614(16)31262-6. doi: 10.1016/j.clnu.2016.09.022. PMID: 27745814.

López Navarro E, Ortega FJ, Francisco-Busquets E, Sabater-Masdeu M, Álvarez-Castaño E, Ricart W, Fernández-Real JM. (2016). Thyroid Hormone Receptors Are Differentially Expressed in Granulosa and Cervical Cells of Infertile Women. *Thyroid*, 26(3):466-73. doi: 10.1089/thy.2015.0416. PMID: 26715425.

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Sauchelli S, Jiménez-Murcia S, Sánchez I, Riesco N, Custal N, Fernández-García JC, Garrido-Sánchez L, Tinahones FJ, Steiger H, Israel M, Baños RM, Botella C, de la Torre R, Fernández-Real JM, Ortega FJ, Frühbeck G, Granero R, Tárrega S, Crujeiras AB, Rodríguez A, Estivill X, Beckmann JS, Casanueva FF, Menchón JM, Fernández-Aranda F. (2016). Orexin and sleep quality in anorexia nervosa: Clinical relevance and influence on treatment outcome. *Psychoneuroendocrinology*, 65:102-8. doi: 10.1016/j.psyneuen.2015.12.014. PMID: 26741881.

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#### **Reviews:**

Steward T, Mestre-Bach G, Agüera Z, Granero R, Martín-Romera V, Sánchez I, Riesco N, Tolosa-Sola I, Fernández-Formoso JA, Fernández-García JC, Tinahones FJ, Casanueva FF, Baños RM, Botella C, Crujeiras AB, de la Torre R, Fernández-Real JM, Frühbeck G, Ortega FJ, Rodríguez A, Jiménez-Murcia S, Menchón JM, Fernández-Aranda F. (2016). Enduring Changes in Decision Making in Patients with Full Remission from Anorexia Nervosa. *European Eating Disorders Review*. 24(6):523-527. doi: 10.1002/erv.2472. PMID: 27578322.

Sauchelli S, Jiménez-Murcia S, Fernández-García JC, Garrido-Sánchez L, Tinahones FJ, Casanueva FF, Baños RM, Botella C, Crujeiras AB, de la Torre R, Fernández-Real JM, Frühbeck G, Granero R, Ortega FJ, Rodríguez A, Zipfel S, Giel KE, Menchón JM, Fernández-Aranda F. (2016). Interaction Between Orexin-A and Sleep Quality in Females in Extreme Weight Conditions. *European Eating Disorders Review*. 24(6):510-517. doi: 10.1002/erv.2484. PMID: 27785902.

**Books:**

Bioquímica de la obesidad y su relación con la diabetes. J.M. Moreno Navarrete, J.M. Fernández-Real, W. Ricart Engel. Capítol 18, Pàgina 157; Tratado de Diabetes Mellitus.

**Grants for research in progress**

- CIBERObn. Centro de Investigación Biomédica en Red- Fisiopatología de la Obesidad y Nutrición. Sponsored by: Instituto de Salud Carlos III  
Duration: 2006 -  
Jose Manuel Fernández-Real
- Grup de Recerca Reconegut per la Generalitat de Catalunya  
Reference: 2014 SGR 1480  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Jose Manuel Fernández-Real
- INFLAMES  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2015- 2017  
Jose Manuel Fernández-Real
- Patient empowerment through personalised decision support  
Sponsored by: European Comission  
Duration: 2016-2019  
Jose Manuel Fernández-Real
- Study of adipose tissue, muscle and brain iron in obese subjects, with gut microbiota and effects of weight loss  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2019  
Jose Manuel Fernández-Real
- Estudi de la biosíntesis de H<sub>2</sub>S en el teixit adipós humà i el seu possible efecte en la fisiologia de l'adipòcit  
Sponsored by: Sociedad Española de diabetes  
Duration: 2016-2017  
José María Moreno Navarrete
- Estudio de la biosíntesis intestinal de LBP y células de Paneth en relación con la sensibilidad a insulina y obesidad (PI16/02173)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2019  
Wifredo Ricart Engel
- Identificació de mediadors moleculars de la senyalització de l'intestí vers la sensibilització a la insulina i el "browning" del teixit adipós: apper de LBP i FGF15/19.  
Sponsored by: La Marató de TV3  
Duration: 2016-2019  
José María Moreno Navarrete (IDIBGI)- Marta Giralt Oms- Universitat de Barcelona



- Rellevància del clúster miR-424(322)/503 en el desenvolupament d'un teixit adipós hiperplàsic.  
Sponsored by: La Marató de TV3  
Duration: 2016-2019  
Francisco José Ortega Delgado (IDIBGI)- David Llobet Navas (Institute of Genetic Medicine, Newcastle University)
- Regulació de l'activitat mitocondrial com a estratègia terapèutica per a l'obesitat i la diabetes de tipus 2.  
Sponsored by: La Marató de TV3  
Duration: 2016-2019  
Wifredo Ricart Engel (IDIBGI)- Julián Aragonés López (Instituto de Investigación Sanitaria, Hospital Universitario de la Princesa Madrid)- Marta Camps Camprubí (Facultat Biologia, Universitat de Barcelona).

## **Patents**

- Authors: Francisco José Ortega Delgado, José Manuel Fernández-Real, Gemma Frühbeck, Josep Maria Mercader, Wifredo Ricart  
Title: Método para el diagnóstico y/o pronóstico de obesidad mórbida  
Patent number: ES2654.4  
Corporation: CIBERObn, IDIBGI, Clínica Universidad de Navarra, Barcelona Supercomputing Center.
- Authors: José Maria Moreno Navarrete, José Manuel Fernández-Real, Francesc Villarroya, Wifredo Ricart, Gemma Frühbeck  
Title: moléculas útiles para el tratamiento y/o prevención de trastornos metabólicos asociados a obesidad y resistencia a insulina  
Patent number: ES2654.7  
Corporation: CIBERObn, IDIBGI, Clínica Universidad de Navarra, Barcelona Supercomputing Center.
- Authors: Remy Burcelin, JM Fernández-Real  
Title: Method for diagnosing hepatic fibrosis  
Patent number: 15720014.8 – 1404  
Corporation: VAIOMER, SL12

# OBESITY AND CARDIOVASCULAR RISK IN PEDIATRY

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## Group members

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### Group leader

Abel López Bermejo

### Post graduate researchers

Montserrat Gispert-Saüch

### Post-doctoral researchers

Gemma Carreras Badosa

Silvi Xargay Torrent

### Nursing staff

Ferran Díaz Roldán

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## Strategic objectives

Our research is aimed at identifying newer markers for early detection of metabolic abnormalities as a result of prenatal programming. We are studying current strategies based on epigenetic markers that may help design novel strategies to prevent metabolic syndrome early in life.

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## Main line of research

Obesity prevention and cardiovascular risk in infancy  
Molecular basis of childhood obesity  
Cardiovascular risk markers in childhood  
Epigenetics of fetal programming

## Publications

### Originals:

Prats-Puig A, Moreno M, Carreras-Badosa G, Bassols J, Ricart W, López-Bermejo A, Fernández-Real JM. Serum Ferritin Relates to Carotid Intima-Media Thickness in Offspring of Fathers With Higher Serum Ferritin Levels. *Arteriosclerosis Thrombosis and Vascular Biology*, 36(1):174-80. doi: 10.1161/ATVBAHA.115.306396. PMID: 26586658.

Prats-Puig A, Soriano-Rodríguez P, Oliveras G, Carreras-Badosa G, Espuña S, Díaz-Roldán F, de Zegher F, Ibáñez L, Bassols J, Puig T, López-Bermejo A. (2016). Soluble CRT3: A Newly Identified Protein Released by Adipose Tissue That Is Associated with Childhood Obesity. *Clinical Chemistry*, 62(3):476-84. doi: 10.1373/clinchem.2015.249136. PMID: 26797688.

Carreras-Badosa G, Prats-Puig A, Diaz-Roldan F, Platero-Gutierrez E, Osiniri I, Riera-Perez E, de Zegher F, Ibañez L, Bassols J, López-Bermejo A. (2016). The macrophage activation product sCD163 is associated with a less favourable metabolic profile in prepubertal children. *Pediatric Obesity*, 11(6):543-550. doi: 10.1111/ijpo.12104. PMID: 26843034.

Prats-Puig A, Gispert-Saüch M, Carreras-Badosa G, Osiniri I, Soriano-Rodríguez P, Planella-Colomer M, de Zegher F, Ibáñez L, Bassols J, López-Bermejo A.  $\alpha$ -Defensins and bacterial/permeability-increasing protein as new markers of childhood obesity. *Pediatric Obesity*. doi: 10.1111/ijpo.12118. PMID: 26929193.

de Zegher F, Díaz M, Lopez-Bermejo A, Ibáñez L. (2016). Recognition of a sequence: more growth before birth, longer telomeres at birth, more lean mass after birth. *Pediatric Obesity*. doi: 10.1111/ijpo.12137. [Epub ahead of print]. PMID: 27071945.

de Zegher F, Pérez-Cruz M, Sebastiani G, Díaz M, López-Bermejo A, Ibáñez L. (2016). Large for Gestational Age Newborns from Mothers Without Diabetes Mellitus Tend to Become Tall and Lean Toddlers. *Journal of pediatrics*, 178:278-280. doi: 10.1038/pr.2016. PMID: 27637280.

## Grants for research in progress

- MoSHCA - My Mobile and Smart Health Care Assistant. ITEA 2 -ip11027  
Sponsored by: Ministerio Economía y Competitividad  
Duration: 2012 - 2016  
Abel López Bermejo
- Marcas epigenéticas del desarrollo prenatal: Asociación con parámetros de riesgo cardiometabólico en pediatría. (PI13/01257)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2014 - 2016  
Abel López Bermejo
- Identification of circulating micrnas in short children born gestational age: relationship with pre- and postnatal growth and metabolic parameters  
Sponsored by: Pfizer  
Duration: 2013 - 2016  
Abel López Bermejo
- NOAH- Neonatologist at home- telemonitorització de nadons prematurs  
Sponsored by: Acció  
Duration: 2015-2016  
Abel López Bermejo
- Vigilancia poscomercialización para controlar la seguridad y la eficacia a largo plazo de Omnitrope® en niños y adolescentes PATRO Children  
Sponsored by: Sandoz  
Duration: 2015-2017  
Abel López Bermejo
- Easypod Connect Observational Study (ECOS)  
Sponsored by: Merck  
Duration: 2015-2017  
Abel López Bermejo
- Efecto de la sobrenutrición materna en las marcas epigenéticas de programación metabólica: identificación y posible reversibilidad farmacológica (PI16/01335)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2019  
Abel López Bermejo

# MATERNAL AND FETAL METABOLIC RESEARCH

## Group members

### Group leader

Judit Bassols Casadevall

### Post-doctoral researchers

Alexandra Bonmatí

José Maria Martínez Calcerrada

### Collaborators

Mercè Montesinos Costa

Lourdes Ibáñez Toda

Bàrbara Teba González

Francis de Zegher

Anna-Cristina Borrell Molins

### Nursing Staff

Estibaliz Platero

## Strategic objectives

Study of prenatal development alterations: of prenatal development: gestational obesity and fetal growth restriction.

Growth postnatal recovery (catch-up).

Metabolic programming during pregnancy

Epigenetics of development

## Main line of research

Identification of metabolic and genetic markers associated with metabolic alterations of pregnancy and offspring, and their relation to pre and postnatal growth.

## Publications

### Originals:

Bassols J, Martínez-Calcerrada JM, Prats-Puig A, Carreras-Badosa G, Díaz-Roldán F, Osiniri I, Riera-Pérez E, de Zegher F, Ibáñez L, López-Bermejo A. (2016). Uric acid, carotid intima-media thickness and body composition in prepubertal children. *Pediatric Obesity*, 11(5):375-82. doi: 10.1111/ijpo.12074. PMID: 26493023.

Carreras-Badosa G, Prats-Puig A, Puig T, Vázquez-Ruiz M, Bruel M, Mendoza E, de Zegher F, Ibáñez L, López-Bermejo

A, Bassols J. (2016). Circulating Fatty Acid Synthase in pregnant women: Relationship to blood pressure, maternal metabolism and newborn parameters. *Scientific reports*, 6:24167. doi: 10.1038/srep24167. PMID: 27090298.

Bassols J, Serino M, Carreras-Badosa G, Burcelin R, Blasco-Baque V, Lopez-Bermejo A, Fernandez-Real JM. (2016). Gestational diabetes is associated with changes in placental microbiota and microbiome *Pediatric Research*, 80(6):777-784. doi: 10.1038/pr.2016.155. PMID: 27490741.

## Grants for research in progress

- Identification of pregnancy-associated micrnas in placenta and material plasma and their relationship with fetal growth and metabolic parameters  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2013-2017  
Judit Bassols Casadevall
- Identificación de MicroRnas en sangre de cordón asociados al crecimiento recuperador postnatal tras restricción fetal. Modulación del crecimiento recuperador por metformina  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2015-2017  
Judit Bassols Casadevall



# RESPIRATORY GROUP: BRONCHIECTASIS AND OTHER RESPIRATORY DISEASE

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## Group members

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### Group leader

Ramón Orriols / Montserrat Vendrell

### Post-doctoral researchers

Manel Haro  
Olga Tura  
Susana Mota

### Post-graduate researchers

Sònia Belda  
Juan Carlos Calderón  
Saïoa Eizaguirre  
Gerard Muñoz  
Anton Obrador  
Maria José Redondo  
Eric Rojas  
Gladis Sabater  
Daniela S. Torres

### Support

Cristina Martínez  
Laia Merchan

### Medical researchers

Sònia Belda  
Juan Carlos Calderón  
Maria José Redondo  
Eric Rojas  
Gladis Sabater  
Saïoa Eizaguirre  
Manel Haro  
Daniela S. Torres  
Montserrat Vendrell

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## Strategic objectives

Research in bronchiectasis field: etiology, diagnosis and treatment.  
Research in sleep disorders: medicine primary diagnosis and vascular disease's consequences.  
Research in occupational and work-related diseases.

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## Main line of research

Bronchiectasis. Respiratory physiotherapy. Primary immunodeficiencies.  
Sleep disorders.  
Diagnostics at Primary Care Medicine. Sleep disorder and refractory hypertension.  
Diffuse interstitial lung disease. Diagnosis and treatment.

## Publications

### Originals:

Muñoz G, Buxó M, de Gracia J, Oliveira C, Martínez-García MA, Giron R, Polverino E, Alvarez A, Birring SS, Vendrell M. (2016). Validation of a Spanish version of the Leicester Cough Questionnaire in non-cystic fibrosis bronchiectasis. *Chronic Respiratory Diseases*, 13(2):128–36. doi: 10.1177/1479972316632005. PMID:26902541.

Aliberti S, Masefield S, Polverino E, De Soyza A, Loebinger MR, Menendez R, Ringshausen FC, Vendrell M, Powell P, Chalmers JD; EMBARC Study Group. (2016). Research priorities in bronchiectasis: a consensus statement from the EMBARC Clinical Research Collaboration. *The European Respiratory Journal*, 48(3):632–47. doi: 10.1183/13993003.01888–2015. PMID: 27288031.

Martínez-García MÁ, Vendrell M, Girón R, Máiz-Carro L, de la Rosa Carrillo D, de Gracia J, Oliveira C. (2016). The Multiple Faces of Non-Cystic Fibrosis Bronchiectasis. A Cluster Analysis Approach. *Annals of the American Thoracic Society*, 13(9):1468–75. doi: 10.1513/AnnalsATS.201510-678OC. PMID: 27348199.

Máiz L, Girón R, Oliveira C, Vendrell M, Nieto R, Martínez-García MA. (2016). Prevalence and factors associated with nontuberculous mycobacteria in non-cystic fibrosis bronchiectasis: a multicenter observational study. *BMC Infectious Diseases*. 16(1):437. doi: 10.1186/s12879-016-1774-x. PMID: 27549788.

Chalmers JD, Aliberti S, Polverino E, Vendrell M, Crichton M, Loebinger M, Dimakou K, Clifton I, van der Eerden M, Rohde G, Murrís-Espin M, Masefield S, Gerada E, Shteinberg M, Ringshausen F, Haworth C, Boersma W, Rademacher J, Hill AT, Aksamit T, O'Donnell A, Morgan L, Milenkovic B, Tramma L, Neves J, Menendez R, Paggiaro P, Botnaru V, Skrgat S, Wilson R, Goeminne P, De Soyza A, Welte T, Torres A, Elborn JS, Blasi F. (2016). The EMBARC European Bronchiectasis Registry: protocol for an international observational study. *European Respiratory Journal*. doi: 10.1183/23120541.00081-2015. PMID: 27730179. I.F.: 8,33.

Oliveira C, Padilla A, Martínez-García MÁ, de la Rosa D, Girón RM, Vendrell M, Máiz L, Borderías L, Polverino E, Martínez-Moragón E, Rajas O, Casas F, Cordovilla R, de Gracia J. (2016). Etiology of Bronchiectasis in a Cohort of 2047 Patients. An Analysis of the Spanish Historical Bronchiectasis Registry. pii: S0300-2896(16)30352-0. doi: 10.1016/j.arbres.2016.12.003. PMID: 28118936.

## Grants for research in progress

- EMBARC: El registro europeo de Bronquiectasias  
Sponsored by: ERS  
Duration: 2014-  
James Chalmers
- Rehabilitación Pulmonar y Fisioterapia Respiratoria en pacientes con Bronquiectasias no derivadas de fibrosis quística  
Sponsored by: SEPAR  
Duration: 2015-  
Eva Polverino
- Estudi de les malalties relacionades amb l'Amiant  
Sponsored by: IDIAP Jordi Gol  
Duration: 2013-  
Rafael Abós Herrandiz

# Neuroscien- ce Area

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AGING, DISABILITY AND HEALTH  
CEREBROVASCULAR PATHOLOGY  
MEDICAL IMAGING

MENTAL HEALTH AND EPIDEMIOLOGY ACTIONS,  
PREVENTION AND RESULTS

NEURODEGENERATION AND NEUROINFLAMMATION





# AGING, DISABILITY AND HEALTH

Recognised as a consolidated research group - 2014SGR390  
The Survey of Health, Ageing and Retirement in Europe Consortium

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## Group members

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### Group leader

Josep Garre-Olmo

### Post-doctoral researchers

Laia Calvó

Oriol Turró

### Medical researchers

Josep Lluís Conde

Manuel de Gracia

Jordi Llinàs

Secundí López-Pousa

Joan Vilalta-Franch

### Nursing staff

M<sup>a</sup> Angeles Lacarra

Ivana Trastámara

### Collaborators

Marta Hernández

Dagmar Keller

Manoli Lonzano

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## Strategic objectives

Consolidation as a reference group in the field of normal and pathological aging

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## Main line of research

1. Normal and pathological aging
2. Dementia and Alzheimer's / neuropsychology / psychopathology of aging and dementia
3. Adaptation and validation of psychometric instruments in the field of aging, disability and mental health
4. Epidemiology of aging: frailty, disability and dependency

## Publications

### Originals:

Calvó-Perxas L, Vilalta-Franch J, Turró-Garriga O, López-Pousa S, Garre-Olmo J. (2016). Gender differences in depression and pain: A two year follow-up study of the Survey of Health, Ageing and Retirement in Europe. *Journal of affective disorders*, 193:157-64. doi: 10.1016/j.jad.2015.12.034. PMID: 26773909.

Turró-Garriga O, Hermoso Contreras C, Olives Cladera J, Mioshi E, Pelegrín Valero C, Olivera Pueyo J, Garre-Olmo J, Sánchez-Valle R. (2016). Adaptation and validation of a Spanish-language version of the Frontotemporal Dementia Rating Scale (FTD-FRS). *Neurologia*, pii: S0213-4853(16)00005-0. doi: 10.1016/j.nrl.2015.12.004. PMID: 26877196.

Turró-Garriga O1,2, Garre-Olmo J1,3, Calvó-Perxas L1, Reñé-Ramírez R4, Gascón-Bayarri J4, Conde-Sala JL. (2016). Course and Determinants of Anosognosia in Alzheimer's Disease: A 12-Month Follow-up. *Journal of Alzheimer's diseases*, 51(2):357-66. doi: 10.3233/JAD-150706.

Garre-Olmo J, Vilalta-Franch J, Calvó-Perxas L, Turró-Garriga O, Conde-Sala L, López-Pousa S. (2016). A path analysis of patient dependence and caregiver burden in Alzheimer's disease. *International psychogeriatrics*, 28(7):1133-41. doi: 10.1017/S1041610216000223. PMID: 26926437.

Portellano-Ortiz C, Garre-Olmo J, Calvo-Perxas L, Conde-Sala JL. (2016). Symptoms of depression and associated factors in persons aged 50 and over in Europe and Israel: analysis of data from the SHARE project. *International journal of geriatric psychiatry*, 31(11):1250-1251. doi: 10.1002/gps.4467. PMID: 27059436.

Garre-Olmo J, Garcia-Ptacek S, Calvó-Perxas L, Turró-Garriga O, López-Pousa S, Eriksdotter M. (2016). Diagnosis of Dementia in the Specialist Setting: A Comparison Between the Swedish Dementia Registry (SveDem) and the Registry of Dementias of Girona (ReDeGi). *Journal of Alzheimer's disease*, 53(4):1341-51. doi: 10.3233/JAD-160098. PMID: 27392854. I.F.: 3,92.

Turró-Garriga O, Garre-Olmo J, Reñé-Ramírez R, Calvó-Perxas L, Gascón-Bayarri J, Conde-Sala JL. (2016). Consequences of Anosognosia on the Cost of Caregivers' Care in Alzheimer's Disease. *Journal of Alzheimer's disease*, 54(4):1551-1560. doi: 10.3233/JAD-160419. PMID: 27636844.

Conde-Sala JL, Portellano-Ortiz C, Calvó-Perxas L, Garre-Olmo J. (2016). Quality of life in people aged 65+ in Europe: associated factors and models of social welfare-analysis of data from the SHARE project (Wave 5). *Quality of life research*, doi: 10.1007/s11136-016-1436-x. PMID: 27766517.

Corominas Barnadas JM, López-Pousa S, Vilalta-Franch J, Calvó-Perxas L, Juvinyà Canal D, Garre-Olmo J. (2016). [MESGI50 study: description of a cohort on Maturity and Satisfactory Ageing]. *Gaceta sanitaria*, pii: S0213-9111(16)30175-3. doi: 10.1016/j.gaceta.2016.07.017. PMID: 27789048.

Portellano-Ortiz C, Garre-Olmo J, Calvó-Perxas L, Conde-Sala JL. (2016). Depression and associated variables in people over 50 years in Spain. *Revista de psiquiatria y salud mental*, pii: S1888-9891(16)30095-7. doi: 10.1016/j.rpsm.2016.10.003. PMID: 27939026.

Sousa MF, Santos RL, Turró-Garriga O, Dourado MC, Conde-Sala JL. (2016) Clinical factorial distribution of Anosognosia Questionnaire for Dementia (AQ-D) in a sample of patients with Alzheimer's disease. *International journal of geriatric psychiatry*, 31(11):1252-1254. doi: 10.1002/gps.4473. PMID: 27059694.

Sousa MF, Santos RL, Turró-Garriga O, Dias R, Dourado MC, Conde-Sala JL. (2016). Factors associated with caregiver burden: comparative study between Brazilian and Spanish caregivers of patients with Alzheimer's disease (AD). *International Psychogeriatrics*, 28(8):1363-74. doi: 10.1017/S1041610216000508. PMID: 27019317.

Perales J, Turró-Garriga O, Gascón-Bayarri J, Reñé-Ramírez R, Conde-Sala JL. (2016). The Longitudinal Association Between a Discrepancy Measure of Anosognosia in Patients with Dementia, Caregiver Burden and Depression. *Journal of Alzheimer's Disease*, 53(3):1133-43. doi: 10.3233/JAD-160065. PMID: 27258415.

Conde-Sala JL, Turró-Garriga O, Portellano-Ortiz C, Viñas-Diez V, Gascón-Bayarri J, Reñé-Ramírez R. (2016). Self-Perceived Quality of Life Among Patients with Alzheimer's Disease: Two Longitudinal Models of Analysis. *Journal of Alzheimer's Disease*, 52(3):999-1012. doi: 10.3233/JAD-160040. PMID: 27079721.

Olazarán J, Hoyos-Alonso MC, del Ser T, Garrido Barral A, Conde-Sala JL, Bermejo-Pareja F, López-Pousa S, Pérez-Martínez D, Villarejo-Galende A, Cacho J, Navarro E, Oliveros-Cid A, Peña-Casanova J, Carnero-Pardo C. (2016). Practical application of brief cognitive tests. *Neurologia*, 31(3):183-94. doi: 10.1016/j.nrl.2015.07.009.

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Masferrer L, Garre-Olmo J & Caparrós B. (2016). Clinical syndromes, complicated grief and substance use disorder. *Heroin Addiction & Related Clinical Problems*, 18 (4s1), 37-44.

## **Grants for research in progress**

- PI15/01980 Riesgo y variables asociadas a la mortalidad tras el diagnóstico de demencia en población general  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2015 - 2018

J osep Garre Olmo

- MESGI50- Estudi multidisciplinari sobre la maduresa i envelliment satisfactori a Girona  
Sponsored by: DIPSALUT  
Duration: 2016

J osep Garre Olmo

- Desigualdades socioeconómicas en salud en los cuidadores informales (PI16/00184)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2019  
Laia Calvo Perxas



# CEREBROVASCULAR PATHOLOGY

Team involved in “Red de Enfermedades Vasculares Cerebrales (RED INVICTUS)”  
 Recognised as a consolidated research group - 2014SGR1198

## Group members

### Group leaders

Joaquín Serena Leal

### Post-doctoral researchers

Gemma Huguet  
 Carme Gubern  
 Elisabet Kádár  
 Rosa Suñer

### Post-graduate researchers:

Pau Comajoan  
 Irene Bragado  
 Saíma Bashir

### Medical Researchers:

Yolanda Silva  
 Mikel Terceño

### Nursing staff

Laura Pardo Albiñana  
 Montserrat Reina Garrido

## Strategic objectives

1. Increase the number of publications as first / last author.
2. Strengthening the critical mass of group in the section on basic research within the institution.
3. Maintain the collaboration with other national and international groups in the same line of research.
4. Obtain funding in official / competitive calls. Maintain current funding sources from industry agreements.

## Main line of research

Study of predictive biomarkers for the ischemic and hemorrhagic brain injury evolution:

- Clinical and experimental investigation of vulnerable atheromatous plaque markers in the identification of risk groups of patients with atherothrombotic disease.
- Clinical and experimental research about the predictive ability of biomarkers in the functional prognosis of patients with ischemic stroke and brain hemorrhage as well as on the occurrence of hemorrhagic transformation of ischemic injury and the recanalization response in patients receiving fibrinolytic therapy with rt-PA .
- Basic research on the molecular mechanisms associated with cerebral ischemia in experimental models in vivo and in vitro. Blood-brain barrier model. Mechanisms of gene regulation (miRNAs) and their involvement in cerebral ischemia.
- Clinical and experimental research on the predictive capacity of biomarkers associated with hematoma growth in patients with primary intracerebral hemorrhage.
- Application and utility of advanced neuroimaging predictors in the identification of patients with brain tissue in ischemic penumbra and predictors of progression in cerebral hemorrhage.
- Ultrasound clinical research primarily focused on the epidemiology of patent foramen ovale and atherothrombotic carotid stenosis, the possibility of ictal recurrencia associated therewith and response to current preventive drug therapy.

## Publications

### Multicentrics:

Zheng D, Sato S, Arima H, Heeley E, Delcourt C, Cao Y, Chalmers J, Anderson CS; INTERACT2 Investigators. (2016). Estimated GFR and the Effect of Intensive Blood Pressure Lowering After Acute Intracerebral Hemorrhage. *American Journal of Kidney Diseases*, 68(1):94-102. doi: 10.1053/ajkd.2016.01.020. PMID: 26948991.

Carcel C, Sato S, Zheng D, Heeley E, Arima H, Yang J, Wu G, Chen G, Zhang S, Delcourt C, Lavados P, Robinson T, Lindley RI, Wang X, Chalmers J, Anderson CS; Intensive Blood Pressure Reduction in Acute Cerebral Hemorrhage Trial 2 Investigators. (2016). Prognostic Significance of Hyponatremia in Acute Intracerebral Hemorrhage: Pooled Analysis of the Intensive Blood Pressure Reduction in Acute Cerebral Hemorrhage Trial Studies. *Critical Care Medicine*, 44(7):1388-94. doi: 10.1097/CCM.0000000000001628. PMID: 26958746. .

Amarenco P, Lavallée PC, Labreuche J, Albers GW, Bornstein NM, Canhão P, Caplan LR, Donnan GA, Ferro JM, Hennerici MG, Molina C, Rothwell PM, Sissani L, Školoudík D, Steg PG, Touboul PJ, Uchiyama S, Vicaut É, Wong LK; TIARegistry.org Investigators. (2016). One-Year Risk of Stroke after Transient Ischemic Attack or Minor Stroke. *New England Journal of Medicine*, 374(16):1533-42. doi: 10.1056/NEJMoa1412981. PMID: 27096581.

Zheng D, Arima H, Sato S, Gasparrini A, Heeley E, Delcourt C, Lo S, Huang Y, Wang J, Stapf C, Robinson T, Lavados P, Chalmers J, Anderson CS; INTERACT2 investigators.(2016). Low Ambient Temperature and Intracerebral Hemorrhage: The INTERACT2 Study. *PLoS One*, 11(2):e0149040. doi: 10.1371/journal.pone.0149040. PMID: 26859491.

Sato S, Delcourt C, Zhang S, Arima H, Heeley E, Zheng D, Al-Shahi Salman R, Stapf C, Tzourio C, Robinson T, Lindley RI, Chalmers J, Anderson CS; INTERACT2 Investigators. (2016). Determinants and Prognostic Significance of Hematoma Sedimentation Levels in Acute Intracerebral Hemorrhage. *Cerebrovascular Disease*, 41(1-2):80-6. doi: 10.1159/000442532. PMID: 26671408.

### Originals:

García García J, Roquer J, Serena J, Castillo J, Blanco M, Díaz-Maroto I, Segura T; ARTICO Study. (2016). Carotid Intima-Media Thickness is Not Associated with Markers of Atherosclerosis in Stroke Patients. *Journal of stroke & cerebrovascular diseases*, 25(5):1070-5. doi: 10.1016/j.jstrokecerebrovasdis.2016.01.002. PMID: 26853138.

Kádár E, Vico-Varela E, Aldavert-Vera L, Huguet G, Morgado-Bernal I, Segura-Torres P. (2016). Increase in c-Fos and Arc protein in retrosplenial cortex after memory-improving lateral hypothalamic electrical stimulation treatment. *Neurobiology of learning and memory*, 128:117-24. doi: 10.1016/j.nlm.2015.12.012. PMID: 26774022.

Huguet G, Kadar E, Temel Y, Lim LW . (2016). Electrical Stimulation Normalizes c-Fos Expression in the Deep Cerebellar Nuclei of Depressive-like Rats: Implication of Antidepressant Activity. *Cerebellum*, 16(2):398-410. doi: 10.1007/s12311-016-0812-y. PMID: 27435250.

Pérez de la Ossa N, Abilleira S, Dorado L, Urra X, Ribó M, Cardona P, Giralte E, Martí-Fàbregas J, Purroy F, Serena J, Cánovas D, Garcés M, Krupinski J, Pellisé A, Saura J, Molina C, Dávalos A, Gallofré M; Catalan Stroke Code and Reperfusion Consortium. (2016). Access to Endovascular Treatment in Remote Areas: Analysis of the Reperfusion Treatment Registry of Catalonia. *Stroke*, 47(5):1381-4. doi: 10.1161/STROKEAHA.116.013069. PMID: 27032445.

Terceño M, Serena J, Bragado I, Silva Y. (2016). Contrast Extravasation through MRI Precedes Cerebral Hemorrhage in a Patient with Eclampsia. *Neurological Sciences*. DOI 10.1007/s10072-016-2781-9. PMID: 27885447.

Castellanos M, Van Eendenburg CV, Gubern C, Sanchez JM. (2016). Ethyl-bridged hybrid column as an efficient alternative for HPLC analysis of plasma amino acids by pre-column derivatization with 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate. *Journal of Chromatography*, 1029-1030:137-44. doi: 10.1016/j.jchromb.2016.07.004. PMID:27428457.

Rodriguez-Luna D, Coscojuela P, Rubiera M, Hill MD, Dowlatshahi D, Aviv RI, Silva Y, Dzialowski I, Lum C, Czlonkowska A, Boulanger JM, Kase CS, Gubitz G, Bhatia R, Padma V, Roy J, Tomasello A, Demchuk AM, Molina CA; PREDICT/Sunnybrook ICH CTA Study Group. (2016). Ultraearly hematoma growth in active intracerebral hemorrhage. *Neurology*, 87(4):357-64. doi: 10.1212/WNL.0000000000002897. PMID: 2734306.

Dowlatshahi D, Yogendrakumar V, Aviv RI, Rodriguez-Luna D, Molina CA, Silva Y, Dzialowski I, Czlonkowska A, Boulanger JM, Lum C, Gubitz G, Padma V, Roy J, Kase CS, Bhatia R, Hill MD, Demchuk AM; PREDICT/Sunnybrook ICH CTA study group. (2016). Small intracerebral hemorrhages have a low spot sign prevalence and are less likely to expand. *International Journal Stroke*, 11(2):191-7. doi: 10.1177/1747493015616635. PMID: 26783310.

Rodriguez-Luna D, Stewart T, Dowlathshahi D, Kosior JC, Aviv RI, Molina CA, Silva Y, Dzialowski I, Lum C, Czlonkowska A, Boulanger JM, Kase CS, Gubitz G, Bhatia R, Padma V, Roy J, Subramaniam S, Hill MD, Demchuk AM; PREDICT/Sunnybrook ICH CTA Study Group. (2016). Perihematomal Edema Is Greater in the Presence of a Spot Sign but Does Not Predict Intracerebral Hematoma Expansion. *Stroke*, 47(2):350-5. doi: 10.1161/STROKEAHA.115.011295. PMID: 26696644.

**Book:**

Molecules to Medicine with mTOR. 1st Edition. Translating Critical Pathways into Novel Therapeutic Strategies. Section II: mTOR in Genetic Disorders and Neurodegenerative Disease. Capitulo 7, 105-122 Título: mTOR: Exploring a New Potential Therapeutic Target for Stroke Autores: Mar Castellanos, Carme Gubern and Elisabet Kadar DOI: <http://dx.doi.org/10.1016/B978-0-12-802733-2.00012-8> Editorial: Elsevier Inc. 26/02/2016

**Grants for research in progress**

- Transformación hemorrágica en isquemia cerebral tras administración de RT-PA: Participación de biomarcadores endoteliales y endotelio-protección mediante administración de péptidos (PI13/02258)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2014-2016  
Mar Castellanos
- Grup de Recerca Reconegut per la Generalitat de Catalunya Reference: 2014 SGR 1198  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014-2016  
Mar Castellanos
- Aproximación proteómica para la identificación de placa vulnerable y posterior validación de biomarcadores no invasivos en pacientes con estenosis carotídea: biomarcadores en sangre periférica y neuroimagen de alta resolución. (PI16/01540)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2018  
Joaquín Serena
- Red De Enfermedades Vasculares Cerebrales (INVICTUS PLUS) (RD16/0019/0003)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2019  
Joaquín Serena

- Potenciación cognitiva mediante estimulación cerebral reforzante: conducta, plasticidad sináptica y neurogénesis. Sponsored by: Ministerio de Economía y Competitividad Participating entities: UAB Universidad de Girona Duration: 2014-2016  
Pilar Segura
- Dispositivo point of care de diagnóstico del ictus mediante biomarcadores plasmáticos: 2-stroke-chip  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2015-2017  
Maria del Mar Castellanos
- Efficacy and safety of MRI-based thrombolysis in wake-up stroke: a randomised, double-blind, placebo-controlled trial (Wake-Up Stroke).  
Sponsored by: UE (7th Framework Programme. Universitätsklinikum Hamburg-Eppendorf (UKE).  
Duration: 2012-2017  
Joaquín Serena
- Transformación hemorrágica en isquemia cerebral tras administración de RT-PA: Participación de biomarcadores endoteliales y endotelio-protección mediante administración de péptidos (PI13/02258)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2014-2016  
Mar Castellanos
- Tenecteplase versus Alteplase for Stroke Thrombolysis Evaluation (TASTE) Trial (Phase III).  
Sponsored by: Unión Europea.  
Duration: 2015-  
Joaquín Serena
- Platelet-Oriented Inhibition in New TIA (POINT)  
Sponsored by: The Emmes Corporation  
Duration: 2014- 2017  
Mar Castellanos, Joaquín Serena
- European Cooperative Acute Stroke Study-4. extending the time for thrombolysis in emergency neurological deficits (ECASS-4: EXTEND)  
Sponsored by: University Hospital Heidelberg  
Duration: 2014-2017  
Joaquín Serena
- International PFO CONSORTIUM. Secondary Stroke Prevention In Patients With Patent Foramen Ovale: International PFO Consortium.  
Sponsored by: University Hospital Inselspital, Berne.  
Duration: 2011-2017  
Joaquín Serena



# MEDICAL IMAGING

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## Group members

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### Group leader

Salvador Pedraza

### Post-doctoral researchers

Josep Puig

Gerard Blasco

### Post-graduate researchers

Gerard Carbó

Victor Cuba

Alfredo Gimeno

### Medical researchers

Brigite Beltran

Laia Valls

### Technicians

Joan Baños

Carles Biarnés

### Collaborators

Josep Daunis

Francisco Reina

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## Strategic objectives

- Image biomarkers validation
- Cerebral connectivity validation as a predictive biomarker in patients with cerebral stroke
- Study of predictive biomarkers of aging
- Population study

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## Main line of research

- Validation of the usefulness of Diffusion Tensor in the management and prognosis of stroke patients.
- Validation of the usefulness of Diffusion Tensor in the assessment of the evolution time of stroke.
- Validation of the usefulness of the Diffusion/FLAIR mismatch in the treatment of patients with wake-up stroke.
- Validation of TC perfusion in the diagnosis of cerebral infarction.
- Validation of predictive biomarkers by MR in the cerebral hematoma
- Validation of predictive biomarkers for TC in the cerebral hematoma.
- Utility of the study of the elasticity of the arterial wall in the prediction of cardiovascular risk.
- Utility of intravascular contrast in the definition of the real extension of aggressive brain Tumor.
- Validation of ultrasound biomarkers (intima average degree of hepatic steatosis) in the estimation of the metabolic syndrome in obese patients.
- Usefulness of the Tensor Diffusion in the evaluation of the lumbar disc degeneration.

## Publications

### Originals:

Puig J, Blasco G, Daunis-I-Estadella J, Moreno M, Molina X, Alberich-Bayarri A, Xifra G, Pedraza S, Ricart W, Fernández-Aranda F, Fernández-Real JM. (2016). Lower serum osteocalcin concentrations are associated with brain microstructural changes and worse cognitive performance. *Clinical Endocrinology*, 84(5):756–63. doi: 10.1111/cen.12954. PMID: 26406918.

A preliminary study. Puig J, Blasco G, Daunis-I-Estadella J, Alberich-Bayarri A, Essig M, Jain R6, Remollo S, Hernández D, Puigdemont M, Sánchez-González J, Mateu G, Wintermark M, Pedraza S. (2016). High-resolution blood-pool-contrast-enhanced MR angiography in glioblastoma: tumor-associated neovascularization as a biomarker for patient survival. *Neuroradiology*, 58(1):17–26. doi: 10.1007/s00234-015-1599-0. PMID: 26438560.

Ritzenthaler T, Lacalm A, Cho TH, Maucort-Boulch D, Klaerke Mikkelsen I, Ribe L, Østergaard L, Hjort N, Fiehler J, Pedraza S, Louis Tisserand G, Baron JC, Berthezene Y, Nighoghossian N. (2016). Sequential MR Assessment of the Susceptibility Vessel Sign and Arterial Occlusion in Acute Stroke. *Journal of Neuroimaging*, 26(3):355–9. doi: 10.1111/jon.12312. PMID: 26552863.

Manuel Fernández-Real J, Blasco G, Puig J, Moreno M, Xifra G, Sánchez-Gonzalez J, Maria Alustiza J, Pedraza S, Ricart W, María Moreno-Navarrete J. (2016). Adipose tissue R2\* signal is increased in subjects with obesity: A preliminary MRI study. *Obesity (Silver Spring)*, 24(2):352–8. doi: 10.1002/oby.21347. Epub 2015 Dec 26. PMID: 26813526.

Geraldo AF, Berner LP, Haesebaert J, Chabrol A, Cho TH, Derex L, Hermier M, Louis-Tisserand G, Chamard L, Klaerke Mikkelsen I, Ribe L, Østergaard L, Hjort N, Pedraza S, Thomalla G, Baron JC, Nighoghossian N, Berthèzene Y. (2016). Does b1000-b0 Mismatch Challenge Diffusion-Weighted Imaging-Fluid Attenuated Inversion Recovery Mismatch in Stroke?. *Stroke*, 47(3):877–81. doi: 10.1161/STROKEA-HA.115.011501. PMID: 26757750.

Bosch-Barrera J, Sais E, Cañete N, Marruecos J, Cuyàs E, Izquierdo A, Porta R, Haro M, Brunet J, Pedraza S, Menéndez JA. (2016). Response of brain metastasis from lung cancer patients to an oral nutraceutical product containing silibinin. *Oncotarget*, 31;7(22):32006–14. doi: 10.18632/oncotarget.7900. PMID: 26959886.

MRI Assessment of Ischemic Lesion Evolution within White and Gray Matter. Berner LP, Cho TH, Haesebaert J, Bouvier J, Wiart M, Hjort N, Klærke Mikkelsen I, Derex L, Thomalla G, Pedraza S, Østergaard L, Baron JC, Nighoghossian N, Berthezene Y. *Cerebrovasc Dis*. 2016;41(5–6):291–7. doi: 10.1159/000444131. PMID: 26867026.

Puig J, Sánchez-González J, Blasco G, Daunis-I-Estadella P, Federau C, Alberich-Bayarri Á, Biarnes C, Nael K, Essig M, Jain R, Wintermark M, Pedraza S. (2016). Intravoxel Incoherent Motion Metrics as Potential Biomarkers for Survival in Glioblastoma. *PLoS One*, 7;11(7):e0158887. doi: 10.1371/journal.pone.0158887. eCollection 2016. PMID: 27387822.

Antunes J, Viswanath S, Rusu M, Valls L, Hoimes C, Avril N, Madabhushi A. (2016). Radiomics Analysis on FLT-PET/MRI for Characterization of Early Treatment Response in Renal Cell Carcinoma: A Proof-of-Concept Study. *Translational Oncology*, 9(2):155–62. doi: 10.1016/j.tranon.2016.01.008. PMID: 27084432.

Vilanova JC, Luna A. (2016). Bone marrow invasion in multiple myeloma and metastatic disease. *Radiologia*, 58 Suppl 1:81–93. doi: 10.1016/j.rx.2015.11.002. PMID: 26767542

García-Figueiras R, Baleato-González S, Padhani AR, Oleaga L, Vilanova JC, Luna A, Cobas Gómez JC. (2016). Proton magnetic resonance spectroscopy in oncology: the fingerprints of cancer?. *Diagnostic and Interventional Radiology*, 22(1):75–89. doi: 10.5152/dir.2015.15009. PMID: 26712681.

Hernández-Pérez M, Puig J, Blasco G, Pérez de la Ossa N, Dorado L, Dávalos A, Munuera J. (2016). Dynamic Magnetic Resonance Angiography Provides Collateral Circulation and Hemodynamic Information in Acute Ischemic Stroke. *Stroke*, 47(2):531–4. doi: 10.1161/STROKEA.HA.115.010748. PMID: 26658445.

### Reviews:

Vilanova JC. (2016). The radiologist and the technique: the essential symbiosis. *Radiologia*, 58(5):327–8. doi: 10.1016/j.rx.2016.07.001. PMID: 27475654

Vilanova JC, Baleato-Gonzalez S, Romero MJ, Carrasco-Arranz J, Luna A. (2016). Assessment of Musculoskeletal Malignancies with Functional MR Imaging. *Magnetic Resonance Imaging Clinics of North America*, 24(1):239–59. doi: 10.1016/j.mric.2015.08.006. PMID: 26613884.

Vilanova JC. (2016). Whole-body magnetic resonance imaging: why radiologists should implement this useful te-

chnique in current practice. *Radiologia*, 58(6):501-503. doi: 10.1016/j.rx.2016.05.005. PMID: 27421827

Valls L, Badve C, Avril S, Herrmann K, Faulhaber P, O'Donnell J, Avril N. (2016). FDG-PET imaging in hematological malignancies. *Blood Review*, 30(4):317-31. doi: 10.1016/j.blre.2016.02.003. PMID: 27090170.

**Multicentric:**

Bosch de Basea M, Salotti JA, Pearce MS, Muchart J, Riera L, Barber I, Pedraza S, Pardina M, Capdevila A, Espinosa A, Cardis E. (2016). Trends and patterns in the use of computed tomography in children and young adults in Catalonia - results from the EPI-CT study. *Pediatric Radiology*, 46(1):119-29. doi: 10.1007/s00247-015-3434-5. PMID: 26276264. I

Warach SJ, Luby M, Albers GW, Bammer R, Bivard A, Campbell BC, Derdeyn C, Heit JJ, Khatri P, Lansberg MG, Liebeskind DS, Majoie CB, Marks MP, Menon BK, Muir KW, Parsons MW, Vagal A, Yoo AJ, Alexandrov AV, Baron JC, Fiorella DJ, Furlan AJ, Puig J, Schellinger PD, Wintermark M; Stroke Imaging Research (STIR) and VISTA-Imaging Investigators. (2016). Acute Stroke Imaging Research Roadmap III Imaging Selection and Outcomes in Acute Stroke Reperfusion Clinical Trials: Consensus Recommendations and Further Research Priorities. *Stroke*, 47(5):1389-98. doi: 10.1161/STROKEAHA.115.012364. PMID: 27073243.

von Kummer R, Mori E, Truelsen T, Jensen JS, Grønning BA, Fiebich JB, Lovblad KO, Pedraza S, Romero JM, Chabriat H, Chang KC, Dávalos A, Ford GA, Grotta J, Kaste M, Schwamm LH, Shuaib A, Albers GW; DIAS-4 Investigators. (2016). Desmoteplase 3 to 9 Hours After Major Artery Occlusion Stroke: The DIAS-4 Trial (Efficacy and Safety Study of Desmoteplase to Treat Acute Ischemic Stroke). *Stroke*. pii: STROKEAHA.116.013715. PMID: 27803391.

Moreno-Navarrete JM, Blasco G, Xifra G, Karczewska-Kupczewska M, Stefanowicz M, Matulewicz N, Puig J, Ortega F, Ricart W, Strackowski M, Fernández-Real JM. (2016). Obesity Is Associated With Gene Expression and Imaging Markers of Iron Accumulation in Skeletal Muscle. *Journal of Clinical Endocrinology and Metabolism*, 101(3):1282-9. doi: 10.1210/jc.2015-3303. PMID: 26765579.

Moreno-Navarrete JM, Moreno M, Puig J, Blasco G, Ortega F, Xifra G, Ricart W, Fernández-Real JM. (2016). Hepatic iron content is independently associated with serum hepcidin levels in subjects with obesity. *Clinical Nutrition*. pii: S0261-5614(16)31262-6. doi: 10.1016/j.clnu.2016.09.022. PMID: 27745814.

Lelouvier B, Servant F, Paissé S, Brunet AC, Benyahya S, Serino M, Valle C, Ortiz MR, Puig J, Courtney M, Federici M, Fernández-Real JM, Burcelin R, Amar J. (2016). Changes in blood microbiota profiles associated with liver fibrosis in obese patients: A pilot analysis. *Hepatology*, 64(6):2015-2027. doi: 10.1002/hep.28829. PMID: 27639192.

**Grants for research in progress**

- Efficacy and safety of MRI-based thrombolysis in wake-up stroke: a randomised, double-blind, placebo-controlled trial (HEALTH-F2-2011- 278276)

Grant: European Commission

Duration: 2011-2016

Salvador Pedraza

- Desarrollo de un biomarcador radiológico basado en el análisis de la conectividad estructural y funcional en pacientes con infarto cerebral agudo para la predicción de la recuperación funcional (PI13/02545)

Grant: Instituto de Salud Carlos III

Duration: 2014-2016

Salvador Pedraza

- Estudio del tejido adiposo, músculo y cerebro en sujetos con obesidad. Interacción con la flora intestinal y los efectos de la pérdida de peso

Sponsored by: Instituto de Salud Carlos III

Duration: 2015-2018

José Manuel Fernández Real

- Imagenoma de l'envelliment: estudi observacional poblacional per al desenvolupament de biomarcador d'imatge corporal integral basats en ressonància magnètica en individus de 50 anys d'edat o més i la seva relació amb factors de l'esfera biopsicosocial, cardiovascular, metabòlica, lipídica, microbiòtica i altres factors associats a l'envelliment

Sponsored by: PERIS

Duration: 2016-2019

Josep Puig Alcántara

# MENTAL HEALTH AND EPIDEMIOLOGY ACTIONS, PREVENTION AND RESULTS

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## Group members

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### Group leaders

Jordi Cid

### Medical researchers

Meritxell Beltran

Rene Morgan

### Pre-doctorate researchers

Miriam Broncao

Fran Calvo

Angels Deu

Jordi Font

Laura Masferrer

Teresa Ferrer

Domenec Serrano

Eduard Palomer

### Collaborators

Coralí Planelles

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## Strategic objectives

Increase the critical mass and research structure in mental health research in the context of the local Mental Health and Addictions Network with the focus on the following areas:

- a) Epidemiology, prevention and health outcomes in mental health
- b) Effectiveness and cost-effectiveness of mental health interventions
- c) Application of ICT Mental Health.

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## Publications

### Original:

Ochoa S, López-Carrilero R, Barrigón ML, Pousa E, Barajas A, Lorente-Rovira E, González-Higueras F, Grasa E, Ruiz-Delgado I, Cid J et al. Randomized control trial to assess the efficacy of Metacognitive Training compared with a psycho-educational group in people with a recent-onset of psychosis. *Psychological medicine* (in press)

Masferrer L, Garre-Olmo J, I Caparros B. Risk of suicide: its occurrence and related variables among bereaved substance users. *Journal of substance use*. Doi: 10.3109/14659891.2014.998733

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## Grants for research in progress

- Eficacia del Entrenamiento Metacognitivo Individualizado (EMC+) en personas con psicosis de breve evolución  
Reference: PI14/00044  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2013 - 2016  
Jordi Cid Colom
- Efecto de los Sistemas de Financiación en la Calidad en la Calidad de la Salud Mental en España Sponsored by: Instituto de Salud Carlos III  
Duration: 2015 - 2017  
Jordi Cid Colom
- Comunitats 2015- Noves technologies per a la innovació en rehabilitació i estimulació cognitiva (INNOBRAIN)  
Sponsored BY: RIS3CAT  
Duration: 2016-2019  
Jordi Cid Colom

# NEURODEGENERATION AND NEUROINFLAMMATION

Team involved in "Red Española de Esclerosis Múltiple (REEM)"  
Recognised as a consolidated research group - 2014SGR627

## Group members

### Group leader

Lluís Ramió

### Post-doctoral researchers

Laura Fàbregas  
René Robles  
Jordi Gich  
Jordi Tomàs  
Ester Quintana

### Pre-doctorate researchers

Clàudia Coll  
María Muñoz  
Anna Cots  
Judit Salavedra  
Verònica Cruz  
Berta Solano

### Medical researchers

Brigitte Beltrán  
Fabián Márquez  
David Genís  
Héctor Perkal

### Technicians

Imma Gómez  
Cristina Ridao

### Nursing staff

Miguel Merchan  
Natàlia González  
Marina González

### Collaborators

Pepi López

## Strategic objectives

- To become the reference group in Girona's province for research and education in multiple sclerosis and other neurodegenerative diseases.
- Have a national and international presence in the field of research into multiple sclerosis.
- Consolidate clinical research in multiple sclerosis.
- Initiate and consolidate basic research into multiple sclerosis.
- Promote and lead research into new treatments for multiple sclerosis.
- Initiate clinical research into other neurodegenerative diseases (Parkinson's disease).
- Consolidate clinical research into hereditary ataxia.
- Establish research collaborations with other national and international groups working in multiple sclerosis.
- Promote research into multiple sclerosis in nursing and neuropsychology.
- Promote research in Parkinson diseases nursing.
- Promote training and education in multiple sclerosis for healthcare professionals, specialists and affected patients and their family.

## Main line of research

Clinical research:

1. Study of neuropsychological disorders and cognitive rehabilitation in multiple sclerosis.
2. Study of the emotional impact, ability to cope, and

adaptation to the diagnosis of multiple sclerosis.

3. Study of fatigue in multiple sclerosis.
4. Improve compliance with immunomodulatory treatment in multiple sclerosis.
5. Creation and use of a database multiparametrical, multi-user and multi-functional multiple sclerosis.
6. Application of new brain MRI techniques as prognosis markers in multiple sclerosis.
7. Computer-based organisation of lesions detected by brain MRI in patients with multiple sclerosis.
8. Shared decisions, expert patient empowerment and patient with multiple sclerosis

Basic research:

1. Study of the gene expression in demyelinating diseases including multiple sclerosis.
2. Study of the molecular expression in multiple sclerosis as a model of chronic inflammatory disease.
3. Determination of biological prognosis factors in cerebrospinal fluid and serum for the evolution of multiple sclerosis (genetic factors, biochemical factors, environmental factors such as vitamin D, virus and others).
4. Determination of biological response factors (genetic and biochemical) to immunomodulatory treatments in multiple sclerosis.
5. Study of the intestinal microbiota in multiple sclerosis and neurodegenerative diseases
6. Bank samples of DNA, CSF, serum and feces of control subjects

## Publications

### Multicentric:

Sepúlveda M, Armangué T, Sola-Valls N, Arrambide G, Meca-Lallana JE, Oreja-Guevara C, Mendibe M, Alvarez de Arcaya A, Aladro Y, Casanova B, Olascoaga J, Jiménez-Huete A, Fernández-Fournier M, Ramió-Torrentà L, Cobo-Calvo A, Viñals M, de Andrés C1, Meca-Lallana V, Cervelló A, Calles C, Rubio MB, Ramo-Tello C, Caminero A, Munteis E, Antigüedad AR, Blanco Y, Villoslada P, Montalban X, Graus F, Saiz A. (2016). Neuromyelitis optica spectrum disorders: Comparison according to the phenotype and serostatus. *Neurology, neuroimmunology and neuroinflammation*, 3(3):e225. doi: 10.1212/NXI.0000000000000225. PMID: 27144216.

### Originals:

Rio J, Rovira A, Blanco Y, Sainz A, Perkal H, Robles R, Ramio-Torrenta L, Diaz RM, Arroyo R, Urbaneja P, Fernandez O, Garcia-Merino JA, Reyes MP, Oreja-Guevara C, Prieto JM, Izquierdo G, Olascoaga J, Alvarez-Cermeño JC, Simon E, Pujal B, Comabella M, Montalban X. (2016). Response to treatment with interferon beta in patients with multiple sclerosis. Validation of the Rio Score. *Revista de neurología*, 63(4):145-50. PMID: 27439483.

Ramió-Torrentà L, Álvarez-Cermeño JC, Arroyo R, Casanova-Estruch B, Fernández O, García-Merino JA, Hernández MA, Izquierdo G, Martínez-Yélamos S, Meca J, Moral E, Olascoaga J, Prieto JM, Saiz A. (2016). A guide to treating gait impairment with prolonged-release fampridine (Fampyra®) in patients with multiple sclerosis. *Neurología*, pii: S0213-4853(15)00269-8. PMID: 26873645.

Quintana E, Ortega FJ, Robles-Cedeño R, Villar ML, Buxó M, Mercader JM, Alvarez-Cermeño JC6, Pueyo N, Perkal H, Fernández-Real JM, Ramió-Torrentà L. (2017). miRNAs in cerebrospinal fluid identify patients with MS and specifically those with lipid-specific oligoclonal IgM bands. *Multiple Sclerosis Journal*. 1:1352458516684213. PMID: 28067602.

Valverde S, Oliver A, Roura E, González-Villà S, Pareto D, Vilanova JC, Ramió-Torrentà L, Rovira À, Lladó X. (2017). Automated tissue segmentation of MR brain images in the presence of white matter lesions. *Medical image analysis*, 35:446-457. PMID: 27598104.

Ramo-Tello C, Tintoré M, Rovira A, Ramió-Torrenta L, Brieva L, Saiz A, Cano A, Carmona O, Hervás JV,

Grau-López L. (2016). Baseline clinical status as a predictor of methylprednisolone response in multiple sclerosis relapses. *Multiple Sclerosis Journal*, 22(1):117-21. doi:10.1177/1352458515590648. PMID: 26540732.

### Reviews (I.F.: 0.68):

Fernandez O, Rodriguez-Antigüedad A, Olascoaga J, Oreja-Guevara C, Prieto JM, Mendibe-Bilbao MM, Garcia-Merino JA, Ramio-Torrenta L, Ginestal R, Meca-Lallana JE, Romero-Pinel L, Munoz D, Saiz A, Calles-Hernandez MC, Izquierdo G, Villar LM, Oliva-Nacarino P, Arnal-Garcia C, Comabella M, Brieva L, Arroyo R, Montalban X (2016). Review of the novelties from the 31st ECTRIMS Congress, 2015, presented at the 8th Post-ECTRIMS meeting. *Revista Neurologia*. 16;62(12):559-69. PMID: 27270678.

## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya  
Reference: 2014 SGR 627  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014-2016  
Jordi Gich
- Papel de los miRNA en la esclerosis múltiple. Estudio de miRNAs en líquido cefaloraquídeo específicos para cada uno de los subtipos clínicos y de la respuesta a tratamiento. (PI13/01782)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2014-2016  
Lluís Ramió i Torrentà
- Connectivity in multiple sclerosis. Quantifying imaging biomarkers involved in cognitive dysfunction in multiple sclerosis based on structural and functional connectivity. (CONNECTIMS)  
Sponsored by: Novartis  
Duration: 2014-  
Lluís Ramió i Torrentà
- Determinacion en LCR de miRNAs implicados en las lesiones cerebrales activas de esclerosis multiple  
Sponsored by: Fundación Genzyme  
Duration: 2014-2017  
Lluís Ramió i Torrentà
- Esclerosi múltiple i vitamina D: relació entre els nivells circulants de 25-hidroxi-vitamina D i evolució clínica i

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- radiològica dels pacients amb esclerosi múltiple.  
Duration: 2012-  
Lluís Ramió i Torrentà
  - Determinació de marcadors biològics per valorar la resposta a tractaments en Esclerosi Múltiple.  
Duration: 2012-  
Lluís Ramió i Torrentà
  - Marcadors genètics i bioquímics en sèrum i LCR i evolució clínica i radiològica dels pacients amb esclerosi múltiple a la província de Girona (estudi BioEM)  
Duration: 2011-  
Lluís Ramió i Torrentà
  - Projecte EM-line! Programa de rehabilitació cognitiva específica per pacients amb esclerosi múltiple  
Duration: 2006-  
Jordi Gich
  - AGEMED BIO-NAT-2008/01 (TOP). PROGRAMA OBSERVACIONAL DE TYSABRI  
Duration: 2010-  
Lluís Ramió i Torrentà
  - "Registro español de pacientes tratados con Gilenya (Fingolimod)" (ACA-FIN-2011-01)  
Sponsored by: ADKONOMA HEALTH RESEARCH, S.L.  
Duration: 2012-  
Lluís Ramió i Torrentà
  - Vitamina D como tratamiento adyuvante para la esclerosi multiple recurrente remitente: estudio multicentrico, aleatorizado, doble ciego, controlado por placebo (VITADEM)  
Duration: 2014-  
Lluís Ramió i Torrentà
  - Estudio del coste del brote de la esclerosi múltiple en Cataluña (NOV-ESC-2014-01)  
Sponsored by: Novartis  
Duration: 2014-  
Lluís Ramió i Torrentà
  - Estudio de metiloma completo en células de sistema inmune de pacientes con esclerosi múltiple (PI16/01140)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2016-2019  
Lluís Ramió i Torrentà
  - Red Española de Esclerosi Múltiple. RD16/0015/0006  
Sponsored by: Instituto de Salud Carlos III
  - Duration: 2016-2021  
Lluís Ramió i Torrentà
  - A methylome-wide study of immune cells in relapsing-remitting multiple sclerosis  
Sponsored by: Deutsche Forschungsgemeinschaft (DFG)  
Duration: 2017-2019  
Lluís Ramió i Torrentà
  - Determinación del patrón de miRNAs en líquido cefalorraquídeo y suero de pacientes con esclerosi múltiple. Asociación con otros biomarcadores.  
Sponsored by: Fundación Salud 200  
Duration: 2015-2017  
Lluís Ramió i Torrentà
  - Noves tecnologies aplicables a la pràctica clínica per l'obtenció de biomarcadors d'atròfia i de lesions en imatges de ressonància magnètica de pacients amb esclerosi múltiple (BiomarkEM.cat)  
Sponsored by: La Marató de TV3  
Duration: 2015-2017  
Lluís Ramió i Torrentà
  - Unitat de referència en neuropsicologia de l'esclerosi múltiple – Programa CONTACT  
Sponsored by: Novartis  
Duration: 2016-  
Jordi Gich i Fullà
  - Patrons d'activació cerebral en pacients amb esclerosi múltiple i queixes cognitives subjectives (CONNECTIMS)  
Sponsored by: Novartis  
Duration: 2015-2016  
Lluís Ramió i Torrentà





# Oncology and hematology Area

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CHROMOSOME REPLICATION

DESCRIPTIVE EPIDEMIOLOGY, GENETICS AND CANCER PREVENTION

HEMATOLOGY

HEPATOBIILIARY & PANCREATIC SURGERY AND ONCOLOGY

MOLECULAR ONCOLOGY



# CHROMOSOME REPLICATION

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## Group members

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### Group leader

Jordi Frigola Mas

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### Strategic objectives and main line of research

DNA replication is an essential task to any living organism. In eukaryotes, multiple replication origins are used to replicate their large genomes. To achieve that any given origin is activated only once per cell cycle, the activation of the replicative helicase has been partitioned in two mutually exclusive steps along the cell cycle. During G1, origins are licensed and upon entry into S-phase, the licensed origins are activated. This activation allows the assembly of the replisome and DNA synthesis starts. Ultimately, two replisomes will converge and be disassembled under normal termination. Our goal is to understand at mechanistic level, the assembly and disassembly of the helicase, and how it is regulated by the cell.

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### Grants for Research in Progress:

-Estudios bioquímicos de la finalización de la replicación cromosómica. Diessción molecular del desensamblaje del replisoma en condiciones normales y de estrés replicativo. (BFU2016-79927-P)  
Sponsored by: MINECO  
Duration: 2016-2019  
Jordi Frigola

# DESCRIPTIVE EPIDEMIOLOGY, GENETICS AND CANCER PREVENTION

RTICC RD12/0036/0056 Red temática de Investigación en cáncer. Plan estratégico: Registro de tumores. Epidemiológico, prevención y bioestadística. Investigador principal: Francesc Xavier Bosch José. Investigadors associats: Rafael Marcos-Gragera

CIBERESP: CB06/02/1002 Centro de Investigación Biomédica en Red Epidemiológica y Salud pública (CIBERESP)

Investigador principal: Marc Saez. Investigadors associats: Montse Puig, Gemma Osca-Gelis i Marta Solans.

Comité de direcció projecte internacional: EUROCARE: Rafael Marcos-Gragera

Comité de direcció Red de registros poblacionales de cáncer españoles: Rafael Marcos-Gragera



## Group members

### Group leader

Rafael Marcos-Gragera

### Post graduate researchers

Marta Solans

### Documentalist

Martí Rispau  
Anna Vidal

### Post-doctoral researchers

Sonia del Barco

Gemma Osca

Bernat Serdà

Rafael Fuentes

Montserrat Puig

Neus Vilar

Adelaida García-Velasco

Jordi Rubió

### Medical researchers

Carme Carmona

Loreto Vilardell

Ángel Izquierdo

### Technicians

Raquel Comas

### Nursing staff

Montse Puigdemont

### Secretary

Joana Fuentes

## Strategic objectives

1. Descriptive and analytical epidemiology of cancer
  - Population-based cancer registry in the province of Girona (national and international collaborations).
    - a) Incidence and prevalence of cancer
    - b) Population Cancer Survivorship (International collaborations: EUROCARE studies and CONCORD).
    - c) Clinical practice assessment in oncology (International study)
  - Study of the prognostic factors both genetic and molecular in breast cancer and hematologic tumors.
  - Study of environmental and genetic factors of risk in breast cancer and chronic lymphocytic leukemia.
2. Cancer prevention
  - Assessment of the screening program for breast cancer and colon cancer.
    - Benefits and adverse effects of screening for breast cancer: methods to improve the measurement of results of early detection.
    - Assessment interval cancer rate and its determinants in the program of early detection of breast cancer the Girona Health Region.

- Evaluation of opportunistic screening program for cervical cancer.
- Determination of the sensitivity and specificity of cervical cytology.
- Evaluation of the effectiveness of HPV vaccines.

3. Genetics (Cancer Genetic Epidemiology)
  - Assessment of the risk of developing cancer
  - Study of the genetic risk factors for cancer
  - Genetic Predisposition of cancer

## Main line of research

Descriptive and analytic epidemiology of cancer

## Publications

### Case Report:

Holguin F, Rubió-Casadevall J, Saigi M, Marruecos J, Taberna M, Tobed M, Maños M, Mesía R. (2016). Cetuximab as treatment for head and neck cancer patients with a previous liver transplant: report of two cases. *Journal of Chemotherapy*. doi: 10.1080/1120009X

### Originals:

Larrañaga N, Sanchez MJ, Ardanaz E, Felipe S, Marcos-Gragera R, Ramos M, Carulla M, Chirlaque MD, Argüelles MV, Martos C, Mateo A, Peris-Bonet R. (2016). Incidence Patterns and Trends of non-Central Nervous System Solid Tumours in Children and Adolescents. A Collaborative Study of the Spanish Population Based Cancer Registries. *Journal of cancer*, 7(3):335-43. doi: 10.7150/jca.12943. PMID: 26918047.

Marcos-Gragera R, Galceran J, Martos C, de Munain AL, Vicente-Raneda M, Navarro C, Quirós-García JR, Sánchez MJ, Ardanaz E, Ramos M, Mateos A, Salmerón D, Felipe S, Peris-Bonet R. (2016). Incidence and survival time trends for Spanish children and adolescents with leukaemia from 1983 to 2007. *Clinical & translational oncology*, 19(3):301-316. doi: 10.1007/s12094-016-1531-z. PMID: 27447899.

Abrahão R, Keogh RH, Lichtensztajn DY, Marcos-Gragera R, Medeiros BC, Coleman MP, Ribeiro RC, Keegan TH. (2016). Predictors of early death and survival among children, adolescents and young adults with acute myeloid leukaemia in California, 1988-2011: a population-based study. *British journal of haematology*, 173(2):292-302. doi: 10.1111/bjh.13944. PMID: 26847021.

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García-Esquinas E, Guinó E, Castaño-Vinyals G, Pérez-Gómez B1,4,9, Llorca J4,10, Altzibar JM, Peiró-Pérez R, Martín V, Moreno-Iribas C, Tardón A, Caballero FJ, Puig-Vives M, Guevara M, Villa TF, Salas D, Amiano P, Dierssen-Sotos T, Pastor-Barriuso R, Sala M, Kogevinas M, Aragonés N, Moreno V, Pollán M. (2016). Association of diabetes and diabetes treatment with incidence of breast cancer. *Acta Diabetologica*, 53(1):99-107. doi: 10.1007/s00592-015-0756-6. PMID: 25916213.

Dierssen-Sotos T, Gómez-Acebo I, de Pedro M, Pérez-Gómez B, Servitja S, Moreno V, Amiano P, Fernandez-Villa T, Barricarte A, Tardon A, Diaz-Santos M, Peiro-Perez R, Marcos-Gragera R, Lope V, Gracia-Lavedan E, Alonso MH, Michelena-Echeveste MJ, Garcia-Palomo A, Guevara M, Castaño-Vinyals G, Aragonés N, Kogevinas M, Pollán M, Llorca J. (2016). Use of non-steroidal anti-inflammatory drugs and risk of breast cancer: The Spanish Multi-Case-control (MCC) study. *BMC Cancer*, 16(1):660. doi: 10.1186/s12885-016-2692-4. PMID: 27542890.

Gómez-Acebo I, Dierssen-Sotos T, Palazuelos C, Pérez-Gómez B, Lope V, Tusquets I, Alonso MH, Moreno V, Amiano P, Molina de la Torre AJ, Barricarte A, Tardon A, Camacho A, Peiro-Perez R, Marcos-Gragera R, Muñoz M, Michelena-Echeveste MJ, Ortega Valin L, Guevara M, Castaño-Vinyals G, Aragonés N, Kogevinas M, Pollán M, Llorca J. (2016). The Use of Antihypertensive Medication and the Risk of Breast Cancer in a Case-Control Study in a Spanish Population: The MCC-Spain Study. *Plos one*, 11(8):e0159672. doi: 10.1371/journal.pone.0159672. PMID: 27508297.

Kyriaki Papantoniou; Gemma Castaño-Vinyals; Ana Espinosa; Nuria Aragonés; Beatriz Pérez-Gómez; Eva Ardanaz; Jone M Altzibar; Vicente Martin Sanchez; Inés Gómez-Acebo; Javier Llorca; David Muñoz; Adonina Tardón; Rosana Peiró; Rafael Marcos-Gragera; Marina Pollan; Manolis Kogevinas. (2016). Breast cancer risk and night shift work in a case-control study in a Spanish population. *European Journal of Epidemiology*, 31(9):867-78. doi: 10.1007/s10654-015-0073-y. PMID: 26205167.

Lope V; García-Esquinas E; Pérez-Gómez B; Altzibar JM; Gracia-Lavedan E; Ederra M; Molina de la Torre AJ;

LLorca FJ; Tardón A; Moreno V; Bayo J; Salas-Trejo D; Marcos-Gragera R; Pumarega J; Dierssen-Sotos T; Lera JP; de Miguel Medina MA; Tusquets I; Amiano P; Boldo E; Kogevinas M; Aragonés N; Castaño-Vinyals G; Pollán M. (2016). Perinatal and childhood factors and risk of breast cancer subtypes in adulthood. *Cancer Epidemiology*, 40:22-30. doi: 10.1016/j.canep.2015.11.004. PMID: 26613540.

Casabonne D, Gracia E, Espinosa A, Bustamante M, Benavente Y, Robles C, Costas L, Alonso E, Gonzalez-Barca E, Tardón A, Dierssen-Sotos T, Vázquez EG, Aymerich M, Campo E, Jiménez-Moleón JJ, Marcos-Gragera R, Castaño-Vinyals G, Aragonés N, Pollán M, Kogevinas M, Urriaga C, Amiano P, Moreno V, de Sanjose S. (2016). Fruit and vegetable intake and vitamin C transporter gene (SLC23A2) polymorphisms in chronic lymphocytic leukaemia. *European journal of nutrition*. doi: 10.1007/s00394-016-1162-8. PMID: 26838684.

Costas L, Benavente Y, Olmedo-Requena R, Casabonne D, Robles C, Gonzalez-Barca EM, de la Banda E, Alonso E, Aymerich M, Tardón A, Marcos-Gragera R, Gimeno-Vázquez E, Gómez-Acebo I, Papantoniou K, Castaño-Vinyals G, Aragonés N, Pollán M, Kogevinas M, de Sanjose S. (2016). Night shift work and chronic lymphocytic leukemia in the MCC-spain case-control study. *International journal of cancer*, 139(9):1994-2000. doi: 10.1002/ijc.30272. PMID: 27416551.

Hofvind S, Holen Å, Román M, Sebuødegård S, Puig-Vives M, Akslen L. (2016). Mode of detection: an independent prognostic factor for women with breast cancer. *Journal of Medical Screening*, 23(2):89-97. doi: 10.1177/0969141315604006. PMID: 26582492.

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Quiles F, Menéndez M, Tornero E, del Valle J, Teulé À, Palanca S, Izquierdo A, Gómez C, Campos O, Santamaria R, Brunet J, Capellá G, Feliubadaló L, Lázaro C. Investigating the effect of 28 BRCA1 and BRCA2 mutations on their related transcribed mRNA. *Breast Cancer Res Treat*. 2016 Jan;155(2):253-60. doi: 10.1007/s10549-015-3676-9. PubMed PMID: 26780556. [IF: 4,085; Q1]

Maria Glòria Torras, Ferran Guedea, Carles Muñoz, Àngel Vidal, Ana Maria Boladeras, Eugeni Canals, Susanna Marín, Josep Jové, Esther Asensio, Montserrat Puigdemont, Luisa Aliste, Diego Jurado, Ignasi Modolell, Jaume Molero, Candela Calle. (2016). Millorant la qualitat del procés de radioteràpia oncològica mitjançant l'auditoria clínica. *Annals de Medicina*, 99:148-150.

Puig J, Blasco G, Daunis-I-Estadella J, Alberich-Bayarri A, Essig M, Jain R, Remollo S, Hernández D, Puigdemont M, Sánchez-González J, Mateu G, Wintermark M, Pedraza

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Mesía R, Garcia-Saenz JA, Lozano A, Pastor M, Grau JJ, Martínez-Trufero J, Lambeaz J, Martínez-Galán J, Mel JR, González B, Vázquez S, Mañós M, Taberna M, Cirauqui B, Barco ED, Casado E, Rubió-Casadevall J, Rodríguez-Jaráiz A, Cruz JJ; Spanish Head And Neck Cancer Cooperative Group (Study TTCC-2007/02). (2016). Could the Addition of Cetuximab to Conventional Radiation Therapy Improve Organ Preservation in Those Patients With Locally Advanced Larynx Cancer Who Respond to Induction Chemotherapy? An Organ Preservation Spanish Head and Neck Cancer Cooperative Group Phase 2 Study. *International Journal of Radiation Oncology, Biology, Physics*. pii: S0360-3016(16)33439-3. doi: 10.1016/j.ijrobp.2016.11.016.

Poveda A, Martinez V, Serrano C, Sevilla I, Lecumberri M J, de Beveridge RD, Estival A, Vicente D, Rubió J, Martin-Broto J. (2016). SEOM Clinical Guideline for gastrointestinal sarcomas (GIST). *Clinical Translational Oncology*, 18(12):1221-1228. doi: 10.1007/s12094-016-1579-9. PMID: 27896638

Joan Maurel, Antonio Lopez-Pousa, Silvia Calabuig, Silvia Bagué, Xavier Garcia del Muro, Xavier Sanjuan, Jordi Rubio-Casadevall, Miriam Cuatrecasas, Javier Martinez-Trufero, Carlos Horndler, Joaquin Fra, Claudia Valverde, Andrés Redondo, Andrés Poveda, Isabel Sevilla, Nuria Lainez, Michele Rubini, Xabier Garcia-Albeniz, Javier Martin-Broto and Enrique de Alava. (2016). Phosphorylated-insulin growth factor I receptor (p-IGF1R) and metalloproteinase-3 (MMP3) expression in advanced gastrointestinal stromal tumors (GIST). A GEIS 19 study. *Clinical Sarcoma Research*, 6:10. DOI 10.1186/s13569-016-0050-6. PMID: 27358721.

Martínez-Jañez N, Chacón I, de Juan A, Cruz-Merino L, Del Barco S, Fernández I, García-Tejido P, Gómez-Bernal A, Plazaola A, Ponce J, Servitja S, Zamora P. (2016). Anti-HER2 Therapy Beyond Second-Line for HER2-Positive Metastatic Breast Cancer: A Short Review and Recommendations for Several Clinical Scenarios from a Spanish Expert Panel. *Breast Care (Basel)*, 11(2):133-8. doi: 10.1159/000443601. PMID: 27239176.

**Book:**

CanGir. El càncer a Girona 2010-12. Projeccions de la incidència 2017. Edició nº 5. Novembre 2016  
Publicat a: [http://ico.gencat.cat/ca/professionals/serveis\\_i\\_programes/registre\\_del\\_cancer/](http://ico.gencat.cat/ca/professionals/serveis_i_programes/registre_del_cancer/)



## Grants for research in progress

- Supervivencia del cáncer de mama a largo plazo: proporción de pacientes curadas y causas de mortalidad a los 20 años de seguimiento

Sponsored by: Instituto de Salud Carlos III. Fondo de Investigación Sanitaria (FIS)

Duration: 2015-2017

Ramón Clèries

Collaborators: Angel Izquierdo i Maria Buxó

- Population based assessment of the impact on survival and recurrence of the conformity to evidence based guidelines and adherence to oral endocrine therapy in breast cancer patients.

Sponsored by: 587/U/2013. Marató TV3.

Duration: 2014-2016

Josep Maria Borràs

Collaborators: Angel Izquierdo i Maria Buxó

- Estilos de vida y susceptibilidad genética como predictores del riesgo de cáncer y del pronóstico y la supervivencia en la cohorte EPIC de España.

Sponsored by: PI13/00053 Fondo de Investigación Sanitaria (FIS). Ministerio de Sanidad y Consumo.

Duration: 2014-

Carlos Alberto Gonzalez

Collaborators Rafael Marcos-Gragera

- Coste-efectividad y seguridad de la Aspirina en la prevención de enfermedad vascular, cáncer y mortalidad en España. Estudio JOANA (JOint of data on Aspirine aNd heAlth outcomes)

Sponsored by: PI13/01511 Fondo de Investigación Sanitaria (FIS). Ministerio de Sanidad y Consumo.

Duration: 2014-2016

Rafael Ramos

Collaborators: Gemma Osca-Gelis

- Supervivencia del cáncer de mama a largo plazo: proporción de pacientes curadas y causas de mortalidad a los 20 años de seguimiento

Sponsored by: Ministerio de Sanidad y Consumo

Duration: 2015- 2017

Ramon Clèries

Collaborators (UERCg): Angel Izquierdo, M. Buxó

- Patrones asistenciales y factores asociados al envejecimiento de la población en la supervivencia de la leucemia linfática crónica. (PI15/00966)

Sponsored by: Instituto de Salud Carlos III. Fondo de Investigación Sanitaria (FIS)

Duration: 2016- 2018

Rafael Marcos-Gragera

Collaborators: Loreto Vilardell, Gemma Osca, Marta Solans

- HIGHCARE: HIGH RESOLUTION PROJECT ON PROGNOSIS AND CARE OF CANCER PATIENTS (AC14/00036)

Sponsored by: ERA-NET on Translational Cancer Research (TRANSCAN)

Duration: 2015-2017

Rafael Marcos-Gragera & Maria Jose Sanchez

Collaborators: Gemma Osca-Gelis; Montse Puigdemont;

Montse Puig; Raquel Comas; MC Carmona

# HEMATOLOGY

Team involved in "Red Temática de Investigación Cooperativa en Cáncer (RTICC)"  
Recognised as a consolidated research group - 2014SGR21

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## Group members

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### Group leader

David Gallardo Giralt

### Technicians

Rocío Rodríguez

### Post-graduate researchers

Anna Bosch

Johana Díaz

Nazly Santos

### Collaborators

Rosa Coll

Ramon Guardia

Josep M<sup>a</sup> Roncero

Cristalina Fernández

Nichollas Kelleher

Esperanza Tuset

Yolanda González

Natàlia Lloveras

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## Strategic objectives

Substituir tot l'apartat de strategic objectives per:  
- Consolidation of the allogenic TPH from the GETH DNA bank as part of the IDIBGI's Biobank.  
- Establish collaborations with other national research groups

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## Main line of research

- Study of minor histocompatibility antigens and polymorphisms of genes involved in the immune response as a predictor of survival and disease graft versus-host disease after allogeneic transplantation of hematopoietic progenitors.  
- Pharmacogenomics of acute myeloid leukemia.  
- Analysis of genetic polymorphisms as predictors of progression of multiple myeloma.  
- Study of genetic polymorphisms involved in the response to treatment for chronic lymphocytic leukemia

## Publications

### Multicentric:

Mateos MV, Martínez-Lopez J, Hernández MT, Ocio EM, Rosiñol L, Martínez R, Teruel AI, Gutiérrez NC, Martín Ramos ML, Oriol A, Bargay J, Bengoechea E, González Y, Pérez de Oteyza J, Gironella M, Encinas C, Martín J, Cabrera C, Paiva B, Cedená MT, Puig N, Bladé J, Lahuerta JJ, San-Miguel J. (2016). Sequential versus alternating administration of VMP and Rd in elderly patients with newly diagnosed MM. *Blood*, 127(4):420-5. Doi: blood-2015-08-666537. PMID: 26500339.

Paiva B, Corchete LA, Vidriales MB, Puig N, Maiso P, Rodríguez I, Alignani D, Burgos L, Sanchez ML, Barcena P, Echeveste MA, Hernandez MT, García-Sanz R, Ocio EM, Oriol A, Gironella M, Palomera L, De Arriba F, Gonzalez Y, Johnson SK, Epstein J, Barlogie B, Lahuerta JJ, Blade J, Orfao A, Mateos MV, San Miguel JF. (2016). Phenotypic and genomic analysis of multiple myeloma minimal residual disease tumor cells: a new model to understand chemoresistance. *Blood*, 127(15): 1896-906. doi: 10.1182/blood-2015-08-665679. PMID: 26755711.

Paiva B, Cedená MT, Puig N, Arana P, Vidriales MB, Cordon L, Flores-Montero J, Gutierrez NC, Martín-Ramos ML, Martínez-Lopez J, Ocio EM, Hernandez MT, Teruel AI, Rosiñol L, Echeveste MA, Martínez R, Gironella M, Oriol A, Cabrera C, Martín J, Bargay J, Encinas C, Gonzalez Y, Van Dongen JJ, Orfao A, Bladé J, Mateos MV, Lahuerta JJ, San Miguel JF. (2016). Minimal residual disease monitoring and immune profiling in multiple myeloma in elderly patients. *Blood*, 127(25): 3165-74. doi: 10.1182/blood-2016-03-705319. PMID: 27118453.

### Originals:

Santos N, Rodríguez-Romanos R, Nieto JB, Buño I, Vallejo C, Jiménez-Velasco A, Brunet S, Buces E, López-Jiménez J, González M, Ferrá C, Sampol A, de la Cámara R, Martínez C, Gallardo D. (2016). UGT2B17 minor histocompatibility mismatch and clinical outcome after HLA-identical sibling donor stem cell transplantation. *Bone Marrow Transplant*, 51(1): 79-82. Doi: 10.1038/bmt.2015.207. PMID: 26367234.

Palomo L, Xicoy B, Garcia O, Mallo M, Ademà V, Cabezon M, Arnan M, Pomares H, Larrayoz MJ, Calasanz MJ, Maciejewski JP, Huang D, Shih LY, Ogawa S, Cervera J, Such E, Coll R, Grau J, Solé F, Zamora L. (2016). Impact of SNP array karyotyping on the diagnosis and the outcome of chronic myelomonocytic leukemia with low risk cytogenetic features or no metaphases.

*American Journal of Hematology*, 91(2):185-92. doi: 10.1002/ajh.24227. PMID: 26509444

Kelleher N, Olga G, Gallardo D, González-Campos J, Hernández-Rivas JM, Montesinos P, Sarrá J, Gil C, Barba P, Guàrdia R, Brunet S, Bernal T, Martínez MP, Abella E, Bermúdez A, Sánchez-Delgado M, Antònia C, Gayoso J, Calbacho M, Ribera JM. (2016). Incidence, clinical and biological characteristics and outcome of secondary acute lymphoblastic leukemia after solid organ or hematologic malignancy. *Leukemia and Lymphoma*, 57(1): 86-91. doi: 10.3109/10428194.2015.1040013. PMID: 25860236.

Sorigué M, Ribera JM, García O, Cabezon M, Vélez P, Marcé S, Xicoy B, Fernández C, Cortes M, Gallardo D, Boqué C, Feliu E, Zamora L. Highly variable mutational profile of ASXL1 in myelofibrosis. *European Journal of Haematology*, 97(4):331-5. doi: 10.1111/ejh.12731. PMID: 26714837.

Ribera J, Morgades M, Zamora L, Montesinos P, Gómez-Seguí I, Pratorcorona M, Sarrá J, Guàrdia R, Nomdedeu J, Tormo M, Martínez-Lopez J, Hernández-Rivas JM, González-Campos J, Barba P, Escoda L, Genescà E, Solé F, Millá F, Feliu E, Ribera JM. "Prognostic significance of copy number alterations in adolescent and adult patients with precursor B acute lymphoblastic leukemia enrolled in PETHEMA protocols". *Cancer*. 2015 Nov 1;121(21):3809-17. I.F: 5.06

## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 21)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
David Gallardo
- Biobanco de aloTPH del GETH. Polimorfismos en antígenos menores de histocompatibilidad y genes moduladores de respuesta inmune como predictores de alorreactividad. (PI11/01690)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2012 - 2016  
David Gallardo
- Modulación de respuesta aloinmune frente a antígenos menores de histocompatibilidad por el genotipado de moléculas coestimuladoras y coinhibidoras.  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2015- 2017  
David Gallardo

# HEPATOBILIARY & PANCREATIC SURGERY AND ONCOLOGY

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## Group members

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### Group leaders

Joan Figueras

### Post-doctoral researchers

M<sup>a</sup> José Ferri Iglesias  
Rosa Peracaula

### Pre-doctoral researchers

Clara Codony  
Cristina Meléndez  
Margarida Casellas Robert  
Helena Salvador Roses  
Júlia Gil García

### Medical researchers

Maite Albiol Quer  
Xavi Hernández Yagüe  
Jordi Soriano  
Adelaida García Velasco  
Santiago López-Ben  
Raquel Guardado  
Bernat Queralt

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## Strategic objectives

Clinical research on liver cancer, biliary tract and pancreas

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## Main line of research

Oncology strategies in synchronous liver metastasis of colon cancer  
Biochemical markers of pancreatic cancer  
Surgical technique of pancreatic tumors and periampullar area  
Development of minimal invasive oncologic surgery for pancreatic and liver tumors

## Publications

### Originals:

Pratschke S, Rauch A, Albertsmeier M, Rentsch M, Kirschneck M, Andrassy J, Thomas M, Hartwig W, Figueras J, Del Rio Martin J, De Ruvo N, Werner J, Guba M, Weniger M, Angele MK. (2016). Temporary Intraoperative Porto-Caval Shunts in Piggy-Back Liver Transplantation Reduce Intraoperative Blood Loss and Improve Postoperative Transaminases and Renal Function: A Meta-Analysis. *World journal of surgery*, 40(12):2988-2998. doi: 10.1007/s00268-016-3656-1. PMID: 27464915.

Jones RP, Malik HZ, Fenwick SW, Terlizzo M, O'Grady E, Stremitzer S, Gruenberger T, Rees M, Plant G, Figueras J, Albiol M, Adam R, Awad S, Poston GJ. (2016). PARAGON II - A single arm multicentre phase II study of neoadjuvant therapy using irinotecan bead in patients with resectable liver metastases from colorectal cancer. *European journal of surgical oncology*, 42(12):1866-1872. doi: 10.1016/j.ejso.2016.07.142. PMID: 27561844.

Codony C, López-Ben S, Albiol M, Falgueras L, Castro E, Codina-Barreras A, Casellas M, Gil J, Codina-Cazador A, Figueras J. (2016). Extreme liver surgery as treatment of liver tumors involving the hepatocaval confluence. *Clinical translational oncology*, 18(11):1131-1139. PMID: 26960560.

### Review:

Manas DM, Figueras J, Azoulay D, Garcia Valdecasas JC, French J, Dixon E, O'Rourke N, Grovale N, Mazzaferro V. (2016). Expert opinion on advanced techniques for hemostasis in liver surgery. *European journal of surgical oncology*, 42(10):1597-607. doi: 10.1016/j.ejso.2016.05.008. PMID: 27329369.

### Multicentrics:

Gruenberger T, Beets G, Van Laethem JL, Rougier P, Cervantes A, Douillard JY, Figueras J, Gruenberger B, Haller DG, Labianca R, Maleux G, Roth A, Ducreux M, Schmiegel W, Seufferlein T, Van Cutsem E. (2016). Treatment sequence of synchronously (liver) metastasized colon cancer. *Digestive and liver disease*, 48(10):1119-23. doi: 10.1016/j.dld.2016.06.009. PMID: 27375207.

## Grants for research in progress

- Ventajas hemodinámicas y metabólicas del pinzamiento hilar selectivo en las resecciones hepáticas segmentarias frente al pinzamiento hilar completo (PI11/01269)  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2012 - 2016  
Joan Figueras Felip

# MOLECULAR ONCOLOGY

Recognised as a consolidated research group - 2014SGR229

## Group members

### Group leaders

Javier A. Menéndez

### Post-doctoral researchers

Elisabet Cuyàs

Salvador Fernández

### Collaborators

Joaquim Bosch

Eugeni López

Begoña Martín

## Strategic objectives

1. Identification of the metabolo-epigenetic mechanisms involved in the generation and maintenance of cancer stem cells (CSCs), i.e., the so-called "metabostemness" hallmark
2. Characterization and evaluation of new therapeutic strategies targeting the metabolo-epigenetic machinery of CSCs
3. Development of novel precision medicine approaches based on the metabolism of CSCs.
4. Identification and therapeutic manipulation of the metabolo-epigenetic mechanisms driving aging:
5. Discovery and development of aging-targeted metabolo-epigenetic therapeutics

## Main line of research

### METABOLISM & CANCER

- Metabolism as a bona fide cancer driver
- Metabolic mechanisms of drug resistance: Targeting cellular metabolism to improve cancer therapeutics
- Molecular characterization and preclinical evaluation of new metabolic targets in human carcinomas

### METABOLO-EPIGENETICS & CANCER

- Metabolo-epigenetic mechanisms involved in the generation and maintenance of cancer stem cells (CSCs), i.e., the metabostemness hallmark.
- New therapeutic strategies targeting the metabolo-epigenetic machinery of CSCs.
- Precision medicine approaches based on the metabolo-epigenetic machinery of CSCs.

### AUTOPHAGY, MITOCHONDRIAL DYNAMICS & CANCER

- Role of autophagy and mitochondrial dynamics in the generation and maintenance of CSCs
- Targeting autophagy and mitochondrial dynamics to overcome drug resistance in cancer therapy

### COMPUTATIONAL SYSTEMS BIOLOGY IN CANCER AND AGING

- Mathematical & Computational Biology: Stochastic tools, conceptual frameworks, and wet-lab validation of metabolo-epigenetics models in cancer & aging

### NATURAL BIOCOMPOUNDS IN CANCER AND AGING

- Molecular characterization and preclinical evaluation of natural with anti-cancer and/or anti-aging properties
  - In silico modelling and pre-clinical development of biocompounds-derived anti-cancer and anti-aging drugs
- ### DRUG DEVELOPMENT & REPOSITIONING IN CANCER METABOLISM
- Screening and pre-clinical development of repositioned drug candidates to target metabolic reprogramming in cancer cells
  - Drug repositioning from bench to bedside: Repurposing established anti-metabolic drugs for oncology patients

## Publications

### Originals:

Cuyàs E, Fernández-Arroyo S, Joven J, Menendez JA. (2016). Metformin targets histone acetylation in cancer-prone epithelial cells. *Cell cycle*, 15(24):3355-3361. doi: 10.1080/15384101.2016.1249547. PMID: 27792453.

Cuyàs E, Pérez-Sánchez A, Micol V, Menendez JA, Bosch-Barrera J. (2016). STAT3-targeted treatment with silibinin overcomes the acquired resistance to crizotinib in ALK-rearranged lung cancer. *Cell cycle*, 15(24):3413-3418. doi: 10.1080/15384101.2016.1245249. PMID: 27753543.

Menendez JA, Vellon L, Espinoza I, Lupu R. (2016). The metastasis inducer CCN1 (CYR61) activates the fatty acid synthase (FASN)-driven lipogenic phenotype in breast cancer cells. *Oncoscience*, 3(7-8):242-257. doi: 10.18632/oncoscience.314. PMID: 27713913.

Queralt B, Cuyàs E, Bosch-Barrera J, Massaguer A, de Llorens R, Martín-Castillo B, Brunet J, Salazar R, Menendez JA. (2016). Synthetic lethal interaction of cetuximab with MEK1/2 inhibition in NRAS-mutant metastatic colorectal cancer. *Oncotarget*, 7(50):82185-82199. doi:10.18632/oncotarget.11985. PMID: 27636997.

Corominas-Faja B, Vellon L, Cuyàs E, Buxó M, Martín-Castillo B, Serra D, García J, Menendez JA, Lupu R. (2016). Clinical and therapeutic relevance of the metabolic oncogene fatty acid synthase in HER2+ breast cancer. *Histology and histopathology*, 11830. doi:10.14670/HH-11-830. PMID: 27714708.

Gonzalez Guerrico A, Espinoza I, Schroeder B, Park C, Kurapaty Venkatapoorna C, Khurana A, Corominas-Faja B, Cuyàs E, Alarcón T, Kleer CG, Menendez JA, Lupu R. (2016). Suppression of endogenous lipogenesis induces phenotypic reversion and normalized differentiation in breast cancer. *Oncotarget*, 7(44):71151-71168. doi:10.18632/oncotarget.9463. PMID: 27223424.

Vazquez-Martin A, Van den Haute C, Cufí S, Corominas-Faja B, Cuyàs E, Lopez-Bonet E, Rodriguez-Gallego E, Fernández-Arroyo S, Joven J, Baekelandt V, Menendez JA. (2016). Mitophagy-driven mitochondrial rejuvenation regulates stem-cell fate. *Aging (alban ny)*, 8(7):1330-52. PMID: 27295498.

Cuyàs E, Fernández-Arroyo S, Alarcón T, Joven J, Menendez JA. (2016). Germline BRCA1 mutation reprograms breast

epithelial cell metabolism towards mitochondrial-dependent biosynthesis: evidence for metformin-based "starvation" strategies in BRCA1 carriers. *Oncotarget*, 7(33):52974-52992. doi:10.18632/oncotarget.9732. PMID: 27259235.

Bosch-Barrera J, Sais E, Cañete N, Marruecos J, Cuyàs E, Izquierdo A, Porta R, Haro M, Brunet J, Pedraza S, Menendez JA. (2016). Response of brain metastasis from lung cancer patients to an oral nutraceutical product containing silibinin. *Oncotarget*, 7(22):32006-14. doi:10.18632/oncotarget.7900. PMID: 26959886.

Menendez JA, Folguera-Blasco N, Cuyàs E, Fernández-Arroyo S, Joven J, Alarcón T. (2016). Accelerated geroncogenesis in hereditary breast-ovarian cancer syndrome. *Oncotarget*, 7(11):11959-71. doi:10.18632/oncotarget.7867. PMID: 26943589.

Menendez JA, Corominas-Faja B, Cuyàs E, García-García M, Fernández-Arroyo S, Fernández AF, Fraga M, Alarcón T. (2016). Oncometabolic nuclear reprogramming of cancer stemness. *Stem cell reports*, 6(3):273-283. doi:10.1016/j.stemcr.2015.12.012. PMID: 26876667.

Fernández-Arroyo S, Cuyàs E, Bosch-Barrera J, Alarcón T, Joven J, Menendez JA. (2016). Activation of the methylation cycle in cells reprogrammed into a pluripotent stem cell-like state. *Oncoscience*, 2(12):958-967. PMID: 26909364.

Riera-Borrull M, Rodríguez-Gallego E, Hernández-Aguilera A, Luciano F, Ras R, Cuyàs E, Camps J, Segura-Carretero A, Menendez JA, Joven J, Fernández-Arroyo S. (2016). Exploring the Process of Energy Generation in Pathophysiology by Targeted Metabolomics: Performance of a Simple and Quantitative Method. *Journal of the american society of mass spectrometry*, 27(1):168-177. doi:10.1007/s13361-015-1262-3. PMID: 26383735.

### Reviews:

Menendez JA, Martín-Castillo B, Joven J. (2016). Metformin and cancer: Quo vadis et cui bono. *Oncotarget*, 7(34):54096-54101. doi:10.18632/oncotarget.10262. PMID: 27356748.

Hernández-Aguilera A, Fernández-Arroyo S, Cuyàs E, Luciano-Mateo F, Cabre N, Camps J, Lopez-Miranda J, Menendez JA, Joven J. (2016). Epigenetics and nutrition-related epidemics of metabolic diseases: Current perspectives and challenges. *Food and chemical toxicology*, 96:191-204. doi:10.1016/j.fct.2016.08.006. PMID: 27503834.

Menendez JA, Alarcón T. (2016). Nuclear reprogramming of cancer stem cells: Corrupting the epigenetic codes of cell identity with oncometabolites. *Molecular and cellular oncology*, 3(6):e1160854. doi:10.1080/23723556.2016.116085. PMID: 28090573.

**Multicentric:**

Klionsky DJ and >1500 authors including Javier A. (2016). Menendez. Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy*, 12(1):1-222. PMID:26799652.

**Grants for research in progress**

- Ajuts de suport als grups de recerca de catalunya (sgr): grup consolidat de la generalitat de catalunya Grup consolidat 2014 SGR 229  
Sponsored by: AGAUR  
Duration: 2015-2017  
Rafael de Llorens - Javier A. Menéndez
- Fenotipado de las mutaciones nras en el cáncer colorrectal: caracterización clínico-molecular y búsqueda de nuevas terapias  
Sponsored by: Fundació Roses Contra el Càncer  
Duration: 2015-2016  
Bernardo Queralt (IP)-Javier A. Menendez (IP)
- A metabolomic framework for reducing and exploiting the multidimensional complexity of tumor heterogeneity: sub-phenotyping of cancer stem cell metabolomic states (SAF2016-80639).  
Sponsored by: Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia, Subprograma Estatal de Generación de Conocimiento. Plan Estatal de Investigación Científica y Técnica y de Innovación 2013-2016. Ministerio de Economía y Competitividad, Agencia Estatal de Investigación.  
Participating entities: Institut d'investigació Biomèdica de Girona (IDIBGI) - Institut Català d'Oncologia (ICO)  
Duration: 2016- 2018  
Javier A. Menendez (Co-investigador Principal)
- Impacto del metabolismo energético en las modificaciones epigenéticas derivadas de la combinación de diabetes y obesidad.  
Sponsored by: Fundació La Marató de TV3. Convocatoria 2015 Diabetes y Obesidad.  
Participating entities: Institut d'Investigació Sanitària Pere Virgili (IISPV) - Institut d'investigació Biomèdica de Girona

(IDIBGI) - Institut Català d'Oncologia (ICO)  
Duration: 2016-2018  
Jorge Joven (Javier A. Menendez, investigador colaborador)

- CD15/00033  
Sponsored by: Instituto de Salud Carlos III. Ministerio de Economía y Competitividad. Contratos Postdoctorales de Perfeccionamiento en Investigación en Salud "Sara Borrell"  
Duration: 2015-2018  
Javier A. Menendez
- Preclinical activity of the TKI nintedanib in combination with the flavonolignan silibinin in NSCLC tumors  
Sponsored by: Boheringer-Ingelheim  
Participating entities: Institut D'investigació Biomèdica de Girona (IDIBGI)-Institut Català d'Oncologia (ICO)  
Duration: 2016-2017  
Javier A. Menendez & Joaquim Bosch-Barrera
- Reversing epithelial-to-mesenchymal transition (EMT)-driven resistance to crizotinib with the flavonolignan silibinin in NSCLC tumors with EML4-ALK translocation.  
Sponsored by: Pfizer  
Participating entities: Institut D'investigació Biomèdica de Girona (IDIBGI) - Institut Català d'Oncologia (ICO)  
Duration: 2015-2016  
Javier A. Menendez & Joaquim Bosch-Barrera
- Una estrategia metabólica para reudicr y explotar la complejidad multidimensional de la heterogeneidad tumoral: sub-fenotipado metabólico de las células madre tumorales 8 SAF2016-80639-P)  
Sponsored by: MINECO  
Duration: 2016-2019  
Javier A. Menéndez

**Patents**

- Authors: Javier A. Menendez  
Title: Compounds for the treatment of cancer and/or cancer treatment resistance  
Patent number: PCT/EP2016/076892  
Corporation: IDIBGI (INSTITUTO DE INVESTIGACIÓN BIOMÉDICA DE GIRONA)-ICO  
Llicenciada a: Metabostem S.L





# Groups associated with the IdIBGi

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ICS

**INTERNAL MEDICINE  
NEPHROLOGY**

UNIVERSITY OF GIRONA  
**BIOCHEMISTRY OF CANCER**

**COMPUTER VISION AND ROBOTICS**

**CONTROL ENGINEERING AND INTELLIGENT SYSTEMS - MEDICINE  
AND HEALTH**

**HEALTH AND HEALTHCARE**

**HEALTH PSYCHOLOGY**

**NEW THERAPEUTIC TARGET LAB - UNIT OF ONCOLOGY**

**MICELAB - MODELLING, IDENTIFICATION AND CONTROL ENGINEERING**

**PROTEIN ENGINEERING**

**STATISTICS AND DATA ANALYSIS**

**STATISTICS, ECONOMETRICS AND HEALTH (GRECS)**



# INTERNAL MEDICINE

## ICS

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### Group members

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**Group leader**  
Ferran García-Bragado

# NEPHROLOGY

## ICS

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### Group members

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#### Group leader

Jordi Calabia

#### Post-graduate researchers

Xoana Barros

Isabel García

Nàdia Martín

#### Medical researchers

Isabel García

Pere Torquet

#### Collaborators

Christian Cordoba

Maria Cufí

Cristina Martínez

Cristina Noboa

#### Nursing staff

Jennifer Moreno

Montse Jubany

#### Collaborators

Christian Córdoba

Maria Cufí

Cristina Noboa

Cristina Martínez

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### Strategic objectives

Consolidate the method for studying cardiovascular risk and the atheroma burden in patients with chronic kidney disease, high blood pressure and Diabetes Mellitus with diabetic nephropathy.

Consolidating the methodology for the study of stiffness and vascular calcification in patients with chronic kidney disease

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### Main line of research

Study of the macro and microvascular affectation of inflammatory markers and bone-mineral metabolism markers in chronic kidney disease and their most frequent pathologies: high blood pressure and diabetic nephropathy.

## Publications

### Originals:

J. Calabia, E. Arcos, JJ Carrero, J Comas, M Vallés. "Does the Obesity Survival Paradox of Dialysis Patients Differ with Age?" *Blood Purification* 2015;39:193-199.

Martínez-Castelao A, Cases A, Carballada AT, Iranzo JT, Bronsoms J, Vallés-Prats M, Monserrat DT, Jimenez EM;investigators of the ACERCA Study Group. "Clinical impact of the ERBP Working Group 2010 Recommendations for the anemia management in chronic kidney disease not on dialysis: ACERCA study". *Nefrología* 2015;35(2):179-88. doi: 10.1016/j.nefro.2015.05.018. Epub 2015 Jun 23.

### Grants for research in progress

- Ensayo multicéntrico, internacional, aleatorizado, doble ciego, con grupos paralelos y controlado con placebo del efecto de Atrasentán sobre los resultados renales de sujetos con diabetes tipo 2 y nefropatía. sonar: ensayo de nefropatía diabética con Atrasentán

Sponsored by: Abbvie Deutschland GmbH&Co. KG

Duration: 2013-

Martí Vallés

- Iniciativa para la evolución clínica de los pacientes en diálisis (BCM-PD-02-INT)

Sponsored by: Abbvie Deutschland GmbH&Co. KG

Duration: 2013-

Martí Vallés

- Observatorio nacional de aterosclerosis en nefrología

Sponsored by: SEN (Sociedad Española de Nefrología)

Duration: 2010-

Martí Vallés

- Efectos del cinacalcet vs tratamiento convencional sobre el metabolismo óseo y la afectación vascular en la insuficiencia renal crónica avanzada

Sponsored by: Promoció interna

Duration: 2013-

Martí Vallés

- Estudio de fase III, multicéntrico, aleatorizado y en doble ciego, para evaluar la eficacia y la seguridad de MK-3102 frente a placebo en sujetos con diabetes mellitus de tipo II afectos de insuficiencia renal crónica moderada o severa o de insuficiencia renal terminal en diálisis y con control glucémico inadecuado (MK 3102-019)

Sponsored by: Merck Sharp & Dohme Corp

Duration: 2014-

Martí Vallés

- Estudio de fase 3, aleatorizado, abierto y controlado con tratamiento activo para evaluar la eficacia y la seguridad de FG-4592 en el tratamiento de la anemia en pacientes con insuficiencia renal crónica no tratados con diálisis (1517-CL-0610)

Sponsored by: Astellas Pharma Europe BV

Duration: 2014-

Martí Vallés

- Estudio en fase III, randomizado, doble ciego, controlado con placebo y multicéntrico para evaluar la seguridad y la eficacia de Pyridorin™ (dihidrocloruro de piridoxamina) en pacientes con nefropatía secundaria a diabetes de tipo 2 (PYR-311)

Sponsored by: Nephogenex, INC.

Duration: 2014-

Martí Vallés

# BIOCHEMISTRY OF CANCER

## University of Girona

Recognised as a consolidated research group - 2014SGR229

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### Group members

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#### Group leaders

Rafael de Llorens and Rosa Peracaula

#### Senior researchers

Rosa Nuria Aleixandra

M<sup>º</sup> José Ferri

Anna Massaguer

Sílvia Barrebés

Esther Llop

Manuel Ramírez

Josep Comet

M<sup>º</sup> Ángeles Martínez

#### Post-graduate researchers

Pedro Guerrero

#### Technicians

Montserrat Ferrer

Lauro Miró

#### Collaborators

Adrià Duran

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### Strategic objectives

Early diagnosis of cancer and its treatment

### Main line of research

1. Tumor markers: Abnormal Glycosylation of several proteins as potential tumor markers. Currently focused on prostate and pancreatic tumors, particularly in abnormal glycosylation of human pancreatic ribonuclease, acute phase proteins and PSA (prostate specific antigen). Extensible to other glycoproteins.

2- Molecular mechanisms responsible for changes in glycosylation in tumors:

- Expression studies of glycosyltransferases responsible for the biosynthesis of antigens associated to tumors
- Determination of their involvement in various stages of tumor progression and the factors that regulate their expression

3- Mechanisms of tumoral resistance.

Molecular and cellular mechanisms determining the resistance of tumors to current therapies. Studies of the mechanisms of resistance to new agents for the emergence of ligand autocrine loop via the EGF / ErbB.

4- New anti-tumor agents.

EGF analogues as anti-tumor agents. Antitumor effects of EGF truncated derivatives.

Obtaining new derivatives as cytotoxic vehicles.

Studies combined with other therapeutic agents such as those derived from metals: cisplatin, ruthenium and copper.

## Publications

### Originals:

Ferri MJ, Saez M, Figueras J, Fort E, Sabat M, López-Ben S, de Llorens R, Aleixandre RN, Peracaula R. (2016). Improved Pancreatic Adenocarcinoma Diagnosis in Jaundiced and Non-Jaundiced Pancreatic Adenocarcinoma Patients through the Combination of Routine Clinical Markers Associated to Pancreatic Adenocarcinoma Pathophysiology. *Plos one*, 11(1):e0147214. doi: 10.1371/journal.pone.0147214. PMID: 26808421.

Llop E1, Ferrer-Batallé M1, Barrabés S1, Guerrero PE1, Ramírez M2, Saldova R3, Rudd PM3, Aleixandre RN2, Comet J4, de Llorens R1, Peracaula R. (2016). Improvement of Prostate Cancer Diagnosis by Detecting PSA Glycosylation-Specific Changes. *Theranostics*, 6(8):1190-204. doi: 10.7150/thno.15226. PMID: 27279911.

Queralt B, Cuyàs E, Bosch-Barrera J, Massaguer A, de Llorens R, Martín-Castillo B, Brunet J, Salazar R, Menendez JA. (2016). Synthetic lethal interaction of cetuximab with MEK1/2 inhibition in NRAS-mutant metastatic colorectal cancer. *Oncotarget*, 7(50):82185-82199. doi: 10.18632/oncotarget.11985. PMID: 27636997.

Barrabés S, Farina-Gomez N, Llop E, Puerta A, Diez-Masa JC, Perry A, de Llorens R, de Frutos M, Peracaula R. (2016). Comparative analysis of prostate-specific antigen by two-dimensional gel electrophoresis and capillary electrophoresis. *Electrophoresis*, doi: 10.1002/elps.201600432. PMID: 27696472.

Balmaña M, Giménez E, Puerta A, Llop E, Figueras J, Fort E, Sanz-Nebot V, de Bolós C, Rizzi A, Barrabés S, de Frutos M, Peracaula R. (2016). Increased  $\alpha$ -1-3 fucosylation of  $\alpha$ -1-acid glycoprotein (AGP) in pancreatic cancer. *Journal of Proteomics*, 132:144-54. doi: 10.1016/j.jprot.2015.11.006.

Gandioso A, Cano M, Massaguer A, Marchán V. A Green Light-Triggerable RGD Peptide for Photocontrolled Targeted Drug Delivery: Synthesis and Photolysis Studies. *Journal of Organic Chemistry*, 81(23):11556-11564. doi: 10.1021/acs.joc.6b02415. PMID: 27934458.

Soler M, González-Bártulos M, Figueras E, Massaguer A, Feliu L, Planas M, Ribas X, Costas M. (2016). Delivering aminopyridine ligands into cancer cells through conjugation to the cell-penetrating peptide BP16. *Org Biomol Chem*, 4061-70. doi: 10.1039/c6ob00470a. PMID: 27055538.

## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 229)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
R. de Llorens
- Influencia de la glicosilación alterada en cáncer de páncreas. Estrategias glicoproteómicas para la búsqueda de nuevos marcadores tumorales". Referencia: N/r: BIO2015-66356-R  
Sponsored by: Ministerio de Educación y Ciencia  
Duraiton: 2016-2019  
R. de Llorens, Rosa Peracaula

## Patents

- Authors: Ferri M<sup>ej</sup>, Saez M, Figueras J, Fort E, Sabat M, López-Ben B, de Llorens R, Aleixandre RN, Peracaula R.  
Title: Improved pancreatic adenocarcinoma diagnosis through the combination of routine clinical markers associated to pancreatic adenocarcinoma pathophysiology  
Patent number: P-2014-31022  
Corporation: Universitat de Girona (España)
- Authors: Peracaula R; De Llorens R; Llop E; Ferrer M; Barrabés S; Comet J; Aleixandre RN; Ramirez JM; Rudd P; Radka S.  
Title: Método in vitro para el diagnóstico de cáncer de próstata.  
Patent number: P201531608.  
Corporation: Universidad de Girona y Fundación Instituto de Investigación Biomédica de Girona Dr. Josep Trueta.





# COMPUTER VISION AND ROBOTICS

## University of Girona

Recognised as a consolidated research group - 2014SGR1056

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### Group members

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#### Group leader

Joan Martí

#### Post-doctoral researchers

Mariano Cabezas

Rafael García

Arnau Oliver

Oliver Díaz

Xavier Lladó

Sergi Valverde

Jordi Freixenet

Robert Martí

#### Post-graduate researchers

Richa Agarwal

Guillaume Lemaître

Mostafa Salem

Eloy García

Mojdeh Rastgoo

Alexandra González

Daniel Sileshi

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### Strategic objectives

Excellent research focused on the following outputs: achievement of leading international publications, participation in relevant conferences in the field of work. In addition, research focused on the following inputs: obtain funding for research project of the H2020 program, participating as leaders/ partners, depending on the implication.

Quality teaching: master VIBOT (Erasmus Mundus Master on Computer Vision and Robotics) and implementation of the master MAIA (Erasmus Mundus Master on Medical Imaging and Applications) and then in the PhD program MEE.

Technology transfer: generating new business co-operation · keeping current partners and trying the active marketing of technologies to increase the percentage of private funding of research.

Science dissemination: participating in activities for society, presenting the activities carried out by the university and make general public to participate in the events.

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### Main line of research

IMAGE ANALISYS: The technological development in medical imaging has led to an increase in job analysis services diagnostic imaging and radiology, while represented an increase in the complexity of analysis of the information provided. Consequently, it has become increasingly necessary to have a computer-aided systems (CAD) aid diagnosis.

ViCOROB has a wide experience in different medical fields: the incorporation of technologies to aid the diagnosis, detection and characterization of lesions and automatic reduction of false positives.

- "Diagnosis of breast cancer → The group has developed applications to help radiologists through a fusion of different imaging modalities (X-rays digital mammography, ultrasound and magnetic resonance -MRI- -US-), which allow the obtaining more efficient and accurate models to diagnose successfully.

- Prostate cancer location → Through ultrasonography, the group has developed an application that uses information obtained endorectal magnetic resonance spectroscopy, and this can increase the accuracy of diagnosis.

- Lesions detection in multiple sclerosis → It has developed and validated an automated system for the detection, segmentation and description of lesions of multiple sclerosis (MS), which enables detailed tracking of automated developments disease in patients already diagnosed.

## Publications

### Editorial:

Cabezas, M.; Corral, J.F.; Oliver, A.; Diez, Y.; Tintoré, M.; Auger, C.; Montalban, X-; Lladó, X.; Pareto, D.; Rovira, À. (2016). Improved automatic detection of new T2 lesions in multiple sclerosis using deformation fields. *American Journal of Neuroradiology (USA)* ISSN: 0195-6108. 37;1816-1823

Roura Perez, Eloy; Sarbu, Nicolae; Oliver i Malagelada, Arnau; Valverde Valverde, Sergi; González Villà, Sandra; Cervera, Ricard; Bargalló, Núria; Lladó Bardera, Xavier. (2016). Automated detection of lupus white matter lesions in MRI images  
Revista: 917957 - *Frontiers In Neuroinformatics (CHE)* ISSN: 1662-5196. 10; 1-13.

J.Schwaab, Y.Diez, A.Oliver, R.Martí, J.van Zelst, A.Gubern-Mérida, A.Bensouda Mourri, J.Gregori, M.Günther. (2016). Automated quality assessment in 3D breast ultrasound images. *Journal of Medical Imaging ()* ISSN: 2329-4302. Volum 3.

González Vilà, Sandra; Oliver i Malagelada, Arnau; Valverde Valverde, Sergi; Wang, Liping; Zwiggelaar, Reyer; Lladó Bardera, Xavier. (2016). A review on brain structures segmentation in magnetic resonance imaging. *Artificial Intelligence in Medicine (NLD)* ISSN: 0933-3657. 73; 45- 69

## Grants for research in progress:

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 1056)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014-2016  
Joan Martí
- IA-BIOBREAST  
Sponsored by: MINECO  
Duration: 2013-2016  
Joan Martí Bonmatí
- New technologies applied to clinical practice for obtaining biomarkers of atrophy and lesions in magnetic resonance images of patients with multiple sclerosis (BiomarkEM.cat)  
Sponsored by: Fundació la Marató de TV3  
Duration: 2015-2019  
Xavier Lladó Bardera
- Herramientas de neuroimagen para mejorar el diagnosis y el seguimiento clínico de los pacientes con esclerosis múltiple (NICOLE)  
Sponsored by: Ministerio de Economía y Competitividad  
Duration: 2015-2017  
Xavier Lladó Bardera- Joaquim Salvi Mas
- Scattered radiation reduction tool to improve computer-aided diagnosis performance in digital breast tomosynthesis  
Sponsored by: Comissió Europea  
Duration: 2015-2017  
Joan Martí/ Oliver Díaz
- Análisis de Imágenes Inteligente para los retos en el cribado de cáncer de mama (SMARTER)  
Sponsored by: MECO - Ministerio de Economía y Competitividad  
Duration: 2016- 2018  
Robert Martí Marly

# CONTROL ENGINEERING AND INTELLIGENT SYSTEMS - MEDICINE AND HEALTH

## University of Girona

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### Group members

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#### Group leader

Beatriz López

#### Seniors researchers

Bianca Innocenti

Joaquim Meléndez

Carles Pous

Miquel Rustullet

#### Post-doctoral researchers

Albert Pla

Ferran Torrent

#### Post-graduate researchers

Pablo Gay

Natàlia Mordvanyuk

#### Technicians

Eduarf Feliu

Roberto Petite (project manager)

Sreynoch Soung (techno II project, Erasmus Mundus)

Sara Murlà (community manager)

Alejandro Pozo

Ramón Viñas (EEL)

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### Strategic objectives

The research group eXiT (Control Engineering and Intelligent Systems, GRTC 61 at the University of Girona) focuses its work on decision support systems, case-based reasoning, machine learning and optimization.

One line of research, is improving the quality of healthcare through innovative applications of artificial intelligence. All this research activity is collected <http://exit.udg.edu/health/> eXiT is also working on research projects and technology transfer working closely with clinicians and health service providers.

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### Main line of research

During 2016, eXiT-Health is working intensively on three activities:

- Rehabilitation: Support tools for the rehabilitation of hips operated patients: learning patterns from sensorized signals in shoes.
- Dyslipidemia and familial hypercholesterolemia: development of an integrated system for the detection of patients and treatment recommendations.
- Diabetes: system development based on cases for recommending insulin bolus; monitoring physical activity through wearables to improve the recommendation.

## Publications

### CASE REPORTS

PEPPER: Patient Empowerment through Predictive Personalised decision support. Jornades TIC-Salut (Vic)

Neonatologist at Home. Demo. European Conference on Artificial Intelligence (ECAI).

### Originals:

Pla A, Mordvanyuk N, López B, Raaben M, Blokhuid TJ, Holstlag. (2016). HR: Bag-of-steps: Predicting Lower-limb Fracture Rehabilitation Length. Neurocomputing.  
For other non-health related publications: exit.udg.edu.

## Grants for research in progress

- MoSHCA - My Mobile and Smart Health Care Assistant. ITEA 2 -ip11027  
Sponsored by: Ministerio Economía y Competitividad  
Duration: 2012 - 2015  
Beatriz López (UdG)- Henk Schwieter (Evalan, european coordinator)
- PEPPER - Patient Empowerment through Predictive Personalised decision support.  
Sponsored by: European Commission  
Duration: 2016- 2019  
Beatriz López
- Ayuda para definir y potenciar los planes de actuación en la transferencia tecnológica de los desarrolladores de tecnología candidatos a ser acreditados TECNIO. Plan de crecimiento.  
Sponsored by: ACCIO - Ref. TECDTP15-1-0009  
Duration: 2016-2019  
Joaquim Meléndez, Joan Colomer
- Millora a la productivitat eXiT  
Sponsored by: UdG - MPCUdG2016/075  
Duration: 2016-2018  
Joaquim Meléndez, Joan Colomer

## Patents

- Author: Beatriz López, Abel López-Bermejo  
Title: Component d' assistència intel·ligent a prematurs  
Patent Number: R043-14  
Corporation: Universitat de Girona - Institut d' Investigació Biomèdica de Girona

# HEALTH AND HEALTHCARE

## University of Girona

Recognised as a consolidated research group - 2014SGR1393

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### Group members

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#### Group leader

Dolors Juvinyà

#### Post-doctoral researchers

Carme Bertran

Concepció Fuentes

Maria Rosa Suñer

Bernat Carles Serdà

Marta Vilanova

David Ballester

Josep Olivet

#### Post-graduate researchers

Neus Brugada

Maria del Carmen Malagón

Almerinda Domingo

#### Secretary

Cristina Vilarò

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### Strategic objectives

1. Consolidate and pursue research in health promotion in hospitals and health centers.
2. Evaluate the implementation of health promotion at the University.
3. Spreading literacy in health in different environments.
4. Promote the health and quality of life in the aging process.
5. Promote health and quality of life for people with cancer, stroke or in critical condition.
6. Development of a map of institutions working in health promotion in the region.
7. To promote networking with individuals, groups and institutions of Mediterranean countries.
8. Promote the incorporation of a gender perspective in all activities in which the group participates.
9. Continue with the training and skills assessment in emergency situations.

### Main line of research

The research being carried out by the Group is organized into four major areas of work: Health Promotion in the field of health services, mental health and elderly, as well as in emergencies and health in women, gender and health.

#### Health promotion

Research in Health Promotion covers a wide range of actions in several areas:

Health institutions: quality evaluation both in the organization and in the care; as well as assessing the skills of health professionals.

Educational institutions such as schools and universities.

Community collectives of users of health services

Strategies: health literacy

Health care and quality of life of people in critical condition; with neurological problems; with mental health problems or with cancer.

#### Seniors and carers

In this research is carried out in the framework of care for the elderly dependency and fragile population. We will like to point out the research aimed at improving the quality of life of informal carers and the development of tools for the assessment of dependence in general.

#### Women, Gender and Health

The research developed in this area is designed to provide the scientific knowledge needed to develop interventions that revert elements discriminators existing in health care and affect the health professions, health professionals and users themselves.

#### Health emergencies

The work done in this field has to do with the assessment of skills in the framework of basic and advanced resuscitation and the creation of new tools for assessing professional competence. This activity takes place in the group laboratory in the Science Park.

## Publications

### Originals:

Soler-Sellarès M, Zorrilla-Riveiro J., Arnau A., Mora-Yelamos J, Casadevall-Castella J., Juvinyà-Canal D. (2016). Factores predictivos de lesión intracraneal en los traumatismos craneoencefalicos leves. *Emergencias*, 28(28):273-281.

M<sup>o</sup> Carme Malagón-Aguilera; Dolors Juvinyà-Canal; Rosa Suñer-Soler; Anna Bonmatí Tomàs; Sandra Gelabert-Vilella; Carolina Rascón-Hernán; Cristina Bosch-Farré. (2016). Sense of coherence, perceived health and optimism in home care's nurses. *Clinical Health Promotion*, 6: 188-188.

Salleras-Duran, Laia; Fuentes-Pumarola, Concepció; Bosch-Borràs, Núria; Punset-Font, Xavier; Sampol-Granes, Francesc-Xavier. (2016). Ultrasound-guided peripheral venous catheterization in emergency services: A study of professional successes and challenges and patients' perceptions of satisfaction and pain. *Journal Of Emergency Nursing*, 42:338-343.

M. Llauradó-Serra, RN, MSc, PhDa, R. Güell-Baró, RNb, c, A. Castanera-Duro, RNd, e, I. Sandalinas, RNf, E. Argilaga, RNg, M.L. Fortes-del Valle, RNc, M.F. Jiménez-Herrera, RN, PhDa, L. Bordonado-Pérez, RNc, C. Fuentes-Pumar. (2016). Barreras y motivaciones de los profesionales de enfermería para la utilización de la investigación en Unidades de Cuidados Intensivos y en el Servicio de Emergencias Médicas. *Enfermería intensiva*, 27:146-154. Doi: 10.1016/j.gaceta.2015.08.006

Martínez, Cristina; Martínez-Sánchez, Jose M.; Antóna, Laura; Riccobenea, Anna; Fua, Marcela; Quirós, Nuria; Saltó, Esteve; Fernández, Esteve; Grupo de coordinadores de los Hospitales de la Red – Suñer, Rosa. Prevalencia de consumo de tabaco en trabajadores hospitalarios: metaanálisis en 45 hospitales catalanes. *Gaceta Sanitaria*, 30:55-8 - Vol. 30 Núm.1 DOI: 10.1016/j.gaceta.2015.08.006

## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 1393)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Dolors Juvinyà

- Title: Tallers demostratius i carpes del programa 'Girona, territori cardioprotegit'.  
Sponsored by: Organisme de Salut Pública de la Diputació de Girona (DIPSALUT)  
Duration: 08/07/2014-07/01/2016  
Dolors Juvinyà Canal

- Title: Estudio de la eficacia de un programa intensivo de cesación tabáquica en pacientes con diagnóstico de ictus agudo  
Sponsored by: Instituto de Salud Carlos III  
Duration: 2013- 2016  
Rosa Suñer Soler

# HEALTH PSYCHOLOGY

## University of Girona

Recognised as a consolidated research group - 2014SGR322

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### Group members

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#### Group leader

M<sup>o</sup> Eugènia Gras  
Montserrat Planes

#### Post-graduate researchers

Anna Belén Gómez  
Francesc Prat

#### Post-doctoral researchers

Maria Aymerich  
Natàlia Cebrián  
Mònica Cunill  
Sílvia Font-Mayolas  
Armand Grau  
Josefina Patiño  
Maria Carme Timoneda

#### Collaborators

Laura Fàbrega Casas

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### Main line of research

The research lines of the group are included in the field of health psychology. The perspective is, therefore, biopsychosocial. The priority lines of research are:

- Sexual behaviour of risk and prevention of AIDS, other STD and unwanted pregnancies.
- Behaviour of risk and prevention for users of motor vehicles and pedestrians.
- Substance dependence.
- Stress, pain and quality of life.
- Quality of life during aging.
- Processes of loss and mourning.
- Research in education in Health Psychology.
- Cognitive and emotional processes, neurology, behavior and learning in the child and youthful population.



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## Publications

### Originals:

Gras ME, Font-Mayolas S, Patiño J, Baltasar A, Planes MI, Sullman MJM. (2016). Resilience and the expressions of driving anger. *Transportation Research Part F: Traffic Psychology and Behaviour*, 42, 307-316. doi:10.1016/j.trf.2015.09.005. PMID: 15094410. I.F.: -.

Prat F, Planes M, Gras ME i Sullman MJM (2016). Perceived pros and cons of condom use as predictors of its consistent use with a heterosexual romantic partner among young adults. *Current Psychology*, 35, 13-21. doi: 10.1007/s12144-015-9357-3. I.F.: 0,64.

Fàbregas L, Planes M, Gras ME i Ramió-Torrentà L (2016). Impacto del estrés y de las variables psicosociales en el curso clínico y en la calidad de vida de los afectados por esclerosis múltiple. *Cuadernos de Medicina Psicosomática y Psiquiatría de Enlace*, 118, 36-48. I.F.: -.

Serra M, Timoneda C i Pérez-Alvarez F (2016). Clinical usefulness of hemoencephalography beyond the neurofeedback. *Neuropsychiatric Disease and Treatment*, 12, 1173-1180. Doi: 10.2147/NDT.S105476. PMID: 27274252. I.F.: 1,87.

Pérez-Álvarez F, Serra M i Timoneda C (2016). Decision-Making in Adolescents According to Reaction Time, HEG, and PASS. *Journal of Neurology and Neuroscience*, 7, 5:156, 1-15. doi:10.21767/2171-6625.1000156. I.F.: -.

### Book:

Hernández-Serrano O, Gras ME, Font-Mayolas S i Sullman MJM. (2016). Types of polydrug use. A V.R. Preedy (ed.) *The Neuropathology of drug addictions and substance misuse*. (pp. 839-849). London: Elsevier Academic-Press.

Planes, M. (ed.) (2016). *Recerca en salut, benestar i qualitat de vida*. Girona: Documenta Universitaria.

Timoneda Gallart, C (2016). *Orientando la orientación. Una guía práctica de intervención neuropsicopedagógica*. Girona: Documenta Universitaria.

## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 322)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Montserrat Planes

# NEW THERAPEUTIC TARGETS LAB- UNIT OF ONCOLOGY

## University of Girona

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### Group members

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#### Group leader

Maria Teresa Puig Miquel

#### Post-doctoral researchers

Joan Brunet Vidal

Ariadna Sarrats Carbó

Rut Porta Balanyà

Glòria Oliveras Serrat

Adriana Blancafort Jorquera

#### Post-graduate researchers

Ariadna Giró Perafita

Marc Rabionet Díaz

Sònia Palomeràs Pairet

Xavier Gallardo

#### Medical researchers

Gemma Viñas Vilaró

Ferran Pérez Bueno

M<sup>a</sup> Pilar Barretina Ginesta

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### Strategic objectives

Our research group also actively collaborates with other national and international research groups: Dr. Manel Esteller (Director of the Epigenetic and Biology of Cancer Programme, IDIBELL, Duran i Reynals Hospital, Barcelona), Dr. Alana Welm (Hutsman Cancer Institute, University of Utah, Salt Lake City, UT, USA), Dr. Marta Planas and Dr. Lúcia Felíu (Innovation in Processes and Products of Organic Synthesis Laboratory-LIPPSO, University of Girona (UdG)), Dr. Eva González-Suárez (Transformation and Metastasis Group, IDIBELL, Barcelona), Dr. Miquel Costas (Bioorganic and Supramolecular Catalysis Group-QBIS, UdG), Dr. Ramon Brugada (Director of the Centre for Cardiovascular Genetics, IDIBGI, Girona), Dr. Joaquim de Ciurana (Product, Process and Production Engineering Research Group-GREP, Polytechnic School, UdG), Dr. Joan Martí (Medical Image-VICOROB, Polytechnic School, UdG) and Dr. Balázs Györfy (Department of Paediatrics, Semmelweis University, Budapest).

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### Main line of research

Our group's lines of research are:

- (i) To study the implications of the blocking of the metabolism of fatty acids in triple negative breast cancer (TNBC) and HER2+, which is resistant to current treatments.
- (ii) The design, synthesis and biological characterisation of the bioactive compounds that inhibit fatty acid synthase (FASN) as lead compounds for later preclinical development.
- (iii) The development of animal models of breast cancer from HER2+ and TNBC patient samples (orthoxenopatients) in collaboration with Dr. Alana Welm's research group from the Hutsman Cancer Institute (University of Utah, Salt Lake City, UT, USA) and Dr. Eva González-Suárez (Transformation and Metastasis Group, IDIBELL, Barcelona). Predoctoral interns in the group are carrying out part of their doctoral thesis (6 months) in Dr. Awelm's group, which has recently moved to the Oklahoma Research Medical Foundation with an AGAUR grant.
- (iv) The characterisation of molecular, genetic and epigenetic mechanisms (in collaboration with Dr. Manel Esteller, Director of the Epigenetic and Biology of Cancer Programme, IDIBELL, Duran i Reynals Hospital, Barcelona)

and cellular mechanisms (cancer stem cells) that play a role in the development of chemoresistance in triple negative breast cancer and HER2+ breast cancer, which are resistant to anti-HER2 treatments.

Our team's future interests lie in researching new medicines and medicinal strategies for treating chemoresistant triple negative breast cancer (TNBC) and resistant HER2+ breast cancer (and to take the first steps towards researching lung cancer through collaboration with AstraZeneca SL).

The objective is::

- i) To determine new predictive biomarkers (possible therapeutic targets) in TNBC sensitive and chemoresistant patient samples (Tumors Bank of HDJT-ICO).
- ii) To design and develop new antitumor compounds that inhibit the metabolism of fatty acids for treating TNBC and to evaluate their efficiency in TNBC sensitive and chemoresistant cellular models. Our research team will also collaborate with AbilityPharma SL (UAB campus, Barcelona) and 3-V Biosciences (California, USA) in the preclinical development of their own antitumor agents.
- iii) To optimise the manufacture of 3-D matrixes (scaffolds) to enrich the cancer stem cell (CSC) population of TN tumours with the aim of characterising them and to test new treatments against CSC, which are partly responsible for recurrence in cancer patients.
- iv) To develop models of orthotopic patients of TNBC to be able to evaluate both the efficiency and the toxicity of the compounds selected in phases ii) and iii).

Depending on the results obtained, the next steps will be to protect the intellectual property rights of our research through patent/s (e.g. the compounds) and to study how to continue the clinical development of these compounds (clinical trials in patients) in collaboration with the hospitals taking part in the project.

## Publications

### Originals:

Palomeras S, Rabionet M, Ferrer I, Sarrats A, Garcia-Romeu ML, Puig T, Ciurana J. (2016). Breast Cancer Stem Cell Culture and Enrichment Using Poly( $\epsilon$ -Caprolactone) Scaffolds. *Molecules*, 21(4):537. doi: 10.3390/molecules21040537. PMID: 27120585.

Giró-Perafita A, Palomeras S, Lum DH, Blancafort A, Viñas G, Oliveras G, Pérez-Bueno F, Sarrats A, Welm AL, Puig T. (2016). Preclinical Evaluation of Fatty Acid Synthase and EGFR Inhibition in Triple-Negative Breast Cancer. *Clinical cancer research*, 22(18):4687-97. doi: 10.1158/1078-0432.CCR-15-3133. PMID: 27106068.

Alvarez-Perez B, Homs J, Bosch-Mola M, Alvarez-Perez B, Puig T, Reina, T, Verdu, E, Boadas-Vaello P. (2016). EGCG reduces thermal hyperalgesia and fractaline expression in spinal cord after chronic constriction injury of sciatic nerve in mice. *European Journal of Pain* 20 (3): 341-352. doi: 10.1002/ptr.5753. PMID: 27896922

Prats-Puig A, Soriano-Rodríguez P, Oliveras G, Carreras-Badosa G, Espuña S, Díaz-Roldán F, de Zegher F, Ibáñez L, Bassols J, Puig T and López-Bermejo A. (2016). Soluble CRT3: A new protein released by adipose tissue associated with childhood obesity. *Clinical Chemistry* 2016 Mar;62(3):476-84. Doi: 10.1373/clinchem.2015.249136. PMID: 26797688.

Carreras-Badosa G, Prats-Puig A, Puig T, Vázquez-Ruiz M, Bruel M, Mendoza E, de Zegher F, Ibáñez L, Lopez-Bermejo A and Bassols J. (2016). Circulating Fatty Acid Synthase in pregnant women: Relationship to blood pressure, maternal metabolism and newborn parameters. *Scientific Reports*,19;6:24167. Doi: 10.1038/srep24167. PMID: 27090298.

Bosch-Barrera J, Sais E, Cañete N, Marruecos J, Cuyàs E, Izquierdo A, Porta R, Haro M, Brunet J, Pedraza S, Menendez JA. (2016). Response of brain metastasis from lung cancer patients to an oral nutraceutical product containing silibinin. *Oncotarget*,7(22):32006-14. doi: 10.18632/oncotarget.7900. doi: 10.18632/oncotarget.7900. PMID: 26959886.

Queralt B, Cuyàs E, Bosch-Barrera J, Massaguer A, de Llorens R, Martin-Castillo B, Brunet J, Salazar R, Menendez

J.A. Synthetic lethal interaction of cetuximab with MEK1/2 inhibition in NRAS-mutant metastatic colorectal cancer. *Oncotarget*. 2016 Sep 12. doi: 10.18632/oncotarget.11985. doi: 10.18632/oncotarget.11985 . PMID: 27636997.

Ferreira-Padilla G, Ferrández-Antón T, Lolas-Stepke F, Almeida-Cabrera R, Brunet J, Bosch-Barrera J. (2016). Ethics competences in the undergraduate medical education curriculum: the Spanish experience. *Croatian Medical Journal*, 31;57(5):493-503. PMID: 27815940.

De Kock L, Bah I, Brunet J, Druker H, Astigarraga I, Bosch-Barrera J, Soglio DB, Nguyen VH, Malkin D, Priest JR, Foulkes WD. Somatic DICER1 mutations in adult-onset pulmonary blastoma. *European Respiratory Journal*, 47(6):1879-82. doi:10.1183/13993003.00172-2016. PMID: 27126690.

Madorsky-Feldman D, Sklair-Levy M, Perri T, Laitman Y, Paluch-Shimon S, Schmutzler R, Rhiem K, Lester J, Karlan BY, Singer CF, Van Maerken T, Claes K, Brunet J, Izquierdo A, Teulé A, Lee JW, Kim SW, Arun B, Jakubowska A, Lubinski J, Tucker K, Poplawski NK, Varesco L, Bonelli LA, Buys SS, Mitchell G, Tischkowitz M, Gerdes AM, Seynaeve C, Robson M, Kwong A, Tung N, Tessa N, Domchek SM, Godwin AK, Rantala J, Arver B, Friedman E. An international survey of surveillance schemes for unaffected BRCA1 and BRCA2 mutation carriers. *Breast Cancer Research Treatment*, 157(2):319-27. doi: 10.1007/s10549-016-3805-0. PMID: 27117159.

Bosch-Barrera J, Sais E, Cañete N, Marruecos J, Cuyàs E, Izquierdo A, Porta R, Haro M, Brunet J, Pedraza S, Menendez JA. Response of brain metastasis from lung cancer patients to an oral nutraceutical product containing silibinin. *Oncotarget*, 7(22):32006-14. doi: 10.18632/oncotarget.7900. PMID: 26959886.

Quiles F, Teulé À, Martinussen Tandstad N, Feliubadaló L, Tornero E, Del Valle J, Menéndez M, Salinas M, Wethe Rognlien V, Velasco A, Izquierdo A, Capellá G, Brunet J, Lázaro C. (2016). Identification of a founder BRCA1 mutation in the Moroccan population. *Clinical Genetics*. doi: 10.1111/cge.12747. PMID: 26864382.

Mur P, Elena SC, Aussó S, Aiza G, Rafael VM, Pineda M, Navarro M, Brunet J, Urioste M, Lázaro C, Moreno V, Capellá G, Puente XS, Valle L. (2016). Scarce evidence of the causal role of germline mutations in UNC5C in hereditary colorectal cancer and polyposis. *Science Reports*, 6:20697. doi: 10.1038/srep20697. PMID: 26852919.

Quiles F, Menéndez M, Tornero E, del Valle J, Teulé À, Palanca S, Izquierdo A, Gómez C, Campos O, Santamaria R, Brunet J, Capellá G, Feliubadaló L, Lázaro C. (2016).

Investigating the effect of 28 BRCA1 and BRCA2 mutations on their related transcribed mRNA. *Breast Cancer Research Treatment*, 155(2):253-60. doi:10.1007/s10549-015-3676-9. PMID: 26780556.

#### Reviews:

Colomer, Sarrats A, Lupu R and Puig T. (2016). Polyphenols and their synthetic analogs as emerging anticancer agents. *Current Drug Targets*, 18(2):147-159. doi: 10.2174/138945011766160112113930. PMID: 26758667.

#### Multicentric:

Mateo F, Arenas EJ, Aguilar H, Serra-Musach J, de Garibay GR, Boni J, Maicas M, Du S, Iorio F, Herranz-Ors C, Islam A, Prado X, Llorente A, Petit A, Vidal A, Català I, Soler T, Venturas G, Rojo-Sebastian A, Serra H, Cuadras D, Blanco I, Lozano J, Canals F, Sieuwerts AM, de Weerd V, Look MP, Puertas S, García N, Perkins AS, Bonifaci N, Skowron M, Gómez-Baldó L, Hernández V, Martínez-Aranda A, Martínez-Iniesta M, Serrat X, Cerón J, Brunet J, Barretina MP, Gil M, Falo C, Fernández A, Morilla I, Pernas S, Plà MJ, Andreu X, Seguí MA, Ballester R, Castellà E, Nellist M, Morales S, Valls J, Velasco A, Matias-Guiu X, Figueras A, Sánchez-Mut JV, Sánchez-Céspedes M, Cordero A, Gómez-Miragaya J, Palomero L, Gómez A, Gajewski TF, Cohen EE, Jesiotr M, Bodnar L, Quintela-Fandino M, López-Bigas N, Valdés-Mas R, Puente XS, Viñals F, Casanovas O, Graupera M, Hernández-Losa J, Ramón Y Cajal S, García-Alonso L, Saez-Rodriguez J, Esteller M, Sierra A, Martín-Martín N, Matheu A, Carracedo A, González-Suárez E, Nanjundan M, Cortés J, Lázaro C, Odero MD, Martens JW, Moreno-Bueno G, Barcellos-Hoff MH, Villanueva A, Gomis RR, Pujana MA. (2016). Stem cell-like transcriptional reprogramming mediates metastatic resistance to mTOR inhibition. *Oncogene*. doi: 10.1038/onc.2016.427. PMID: 27991928.

Lawrenson K, Kar S, McCue K, Kuchenbaecker K, Michailidou K, Tyrer J, Beesley J, Ramus SJ, ..., Brunet J, ..., Dunning AM, Pharoah PD, Edwards SL, Chenevix-Trench G, Antoniou AC, Gayther SA. (2016). Functional mechanisms underlying pleiotropic risk alleles at the 19p13.1 breast-ovarian cancer susceptibility locus. *Nature Communications*, 7:12675. doi: 10.1038/ncomms12675. PMID: 27601076.

Dunning AM, Michailidou K, Kuchenbaecker KB, Thompson D, French JD, Beesley J, Healey CS, ..., Brunet J, ..., García-Closas M, Vachon C, Chenevix-Trench G, Antoniou AC, Easton DF, Edwards SL. (2016). Breast cancer risk variants at 6q25 display different phenotype associations and regulate ESR1, RMND1 and CCDC170. *Nature Genetics*, 48(4):374-86. doi:10.1038/ng.3521. Epub 2016 Feb 29. PMID:26928228.

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## Grants for research in progress

- Preclinical characterisation of fatty acid synthase (FASN) inhibition in anti-HER2 drug-resistant models  
Sponsored by: Health Institute Carlos- PI11/00692 III  
Duration: 2012-2015  
Dra. Teresa Puig
- Rank and Rank signalling in HER2 positive and resistant HER2 positive breast cancer  
Sponsored by: TV3 Marathon  
Duration: 2014-2017  
Dra. Teresa Puig
- Consolidated  
Group: Research  
Group in technological innovation for production systems. 2014 SGR 00868 Research  
Sponsored by: General Directorate  
Duration: 2014-2016  
Dr. Joaquim de Ciurana
- Development of new highly efficient and specific antitumor therapies with low toxicity for oral administration  
Sponsored by: MINECO  
Duration: 2014-2016  
Dra. Teresa Puig
- Preclinical characterisation of the inhibition of the metabolism of fatty acids in models of triple negative, chemoresistant breast cancer  
Sponsored by: ISCIII  
Duration: 2015-2017  
Dra. Teresa Puig
- The inhibition of the lipogenic enzyme fatty acid synthase as a new therapeutic strategy for the treatment of triple negative breast cancer  
Sponsored by: Ramón Areces Foundation  
Duration: 2015-2017  
Dra. Teresa Puig

## Patents

- Authors: R Colomer, T Puig, J Brunet, B Benhamú, C Turrado, S Ortega-Gutiérrez and ML López Rodríguez  
Title: Novel polyhydroxylated compounds as fatty acid synthase (FASN) inhibitors  
Patent number: PCT/ES2008/058099  
Corporation: Institute of Biomedical Research of Girona (IDIBGi) and Complutense University of Madrid (UCM)
- Authors: Bardají E, Feliu L, Montesinos E, Planas M, Puig T  
Title: Cyclic Peptide Inhibitors of Cellular Growth  
Patent number: P201030239  
Corporation: University of Girona and Institute of Biomedical Research of Girona (IDIBGi)
- Authors: Blancafort A, Puig T  
Title: Trastuzumab and Lapatinib-Resistant cell lines as a screening method for testing the drug antitumor activity in this setting  
Patent number: P201231228  
Corporation: University of Girona (UdG)

# MICELAB - MODELLING, IDENTIFICATION AND CONTROL ENGINEERING

University of Girona

Recognised as a consolidated research group - 2014SGR1052

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## Group members

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### Group leader

Josep Vehí

### Senior researchers

Joaquim Armengol

Remei Calm

Ningsu Luo

### Post-doctoral researcher

Iván Contreras

### Pre-doctoral researchers

Arthur Bertachi

Inès Ferrer

Charrise Ramkisson

Aleix Beneyto

Yeimy Morales

Lyvia Biaggi

Silvia Oviedo

### Technicians

Aleix Beneyto

Anna Comas

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## Strategic objectives

The Modelling, Identification and Control Engineering (MiceLab) group, led by Dr. Josep Vehí, is a multidisciplinary research group within the Institute of Informatics and Applications at the University of Girona. The group was founded in 2000 and since 2005 is recognized by the Generalitat of Catalonia as a "consolidated research group."

MiceLab has been researching new technologies for diabetes since 2004, reaching more than two million euros in funding thanks to various competitive projects. The group has worked on modeling and control diabetes; glucose prediction including the uncertainty and variability intra-patient; optimization of insulin therapy; identifying models of gastric emptying and absorption of carbohydrates; algorithms for calibration of continuous monitors glucose; developing closed-loop control algorithms for type 1 diabetic patients, for critical patients and detection of failures in insulin pumps and continuous monitors.

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## Main line of research

- Continuous Glucose Monitoring
  - Calibration algorithms
  - Detection of wrong measurements
- Modelling and simulation
  - Intra-patient variability modelled using interval models
  - Posprandial response for mixed meals. Mixed meal library
  - Generation of virtual patients representing real cohorts
  - Lifestyle simulation, including exercise
- Open-loop glucose control
  - Algorithms for postprandial hypoglycaemia risk assessment
  - SAFE: open-loop control algorithms for insulin pumps
- Artificial pancreas
  - Closed loop posprandial control. Enhanced and safer algorithms
  - Fault detection and supervision: fault detection for insulin pumps. Monitoring of patient condition

## Publications

### Originals:

Contreras I, Quirós C, Giménez M, Conget I, Vehí J. (2016). Profiling intra-patient type I diabetes behaviors. *Computer Methods and Programs in Biomedicine*, 136, 131-141. Doi: 10.1016/j.cmpb.2016.08.022. PMID: 27686710.

Morales Y, Bosque G, Vehí J, Picó J, Llaneras F. (2016). PFA toolbox: a MATLAB tool for Metabolic Flux Analysis. *BMC Systems Biology*, 10 (1), 42. Doi: 10.1186/s12918-016-0284-1. PMID: 27401090.

Oviedo S, Vehí J, Calm R, and Armengol J. (2016) A review of personalized blood glucose prediction strategies for T1DM patients. *International Journal for Numerical Methods in Bio-medical Engineering*. doi: 10.1002/cnm.2833. PMID: 27644067.

### Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 1052)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Josep Vehí

- Nuevos métodos para la eficiencia y seguridad del páncreas artificial domiciliario (SAFE-AP)  
Sponsored by: Ministerio de Economía y Competitividad  
Duration: 2014 - 2016  
Josep Vehí

- SITES: Smart IT Engineering and Solutions (2014 SGR 1052)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR). Generalitat de Catalunya. Competitividad  
Duration: 2014 - 2016  
Josep Vehí

- Control de la glucemia en el periodo postprandial en la Diabetes tipo 1. Seguridad y eficacia de un nuevo algoritmo en lazo cerrado (páncreas artificial).  
Sponsored by: Ajuts a la Recerca Josep Font  
Duration: 2014-2016  
Ignacio Conget

mSAFE: Nuevos métodos para la eficiencia y seguridad del páncreas artificial domiciliario

Sponsored by: MICINN

Duration: 2016-2019

Josep Vehí

SMART-Diabetes: The Self-Management. Assistant and Remote Treatment for Diabetes

Sponsored by: FP7-PEOPLE-2012-COFUND

Duration: 2016- 2018

Josep Vehí

## Patents

- Authors: Bondia Company Jorge; Barcelo Rico Fatima; Diez Ruano Jose Luis; Rossetti Paolo; Vehí Casellas Josep; Leal Moncada Yenny Teresa  
Title: System and method for estimating blood glucose in plasma

Patent number: WO 2012/156568 (Patent internacional PCT)

Corporation: Universidad Politécnica de Valencia (83%), Universitat de Girona (17%)

- Authors: Josep Vehí, Fabián León, Fabricio Garelli, Hernán de Battista

Title: Método y programa de ordenador para la determinación y distribución temporal de una dosis de insulina a un usuario

Patent number: P20150100273

Corporation: CONICET

# PROTEIN ENGINEERING

## University of Girona

Recognised as a consolidated research group - 2014SGR70

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### Group members

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#### Group leaders

Antoni Benito  
Marc Ribó

#### Senior researchers

Maria Vilanova

#### Post-doctoral researchers

Jessica Castro  
Gerard Torrent  
David Soler  
Anna Vert

#### Post-graduate researchers

Glòria García  
Veronica Gordo  
Santiago Ruiz

#### Technician

Imma Guardiola

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### Strategic objectives

1. Provide solutions to two important health challenges for the European population:  
No-mutagenic and most effective new drugs for the cancer treatment.  
Delve into the mechanism of neurodegenerative diseases caused by protein aggregation processes with the objective to develop potential inhibitors of these pathological processes.
2. Technology transfer: patents of improved forms of antitumor drugs.

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### Main line of research

- Development of antitumor drugs not mutagenic for the treatment of ovarian cancer and non-microcitic lung cancer.
- Study of structural and aggregation determinants of the proteins Apoptin and TDP-43, using nuclear magnetic resonance and isotope labeling of the fragments involved in the aggregation processes that lead to apoptosis.



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## Publications

### Originals:

Vert Company A, Castro Gallego J, Ribó i Panosa M, Benito i Mundet A, Vilanova i Brugués M. (2016). A nuclear-directed human pancreatic ribonuclease (PE5) targets the metabolic phenotype of càncer cells. *Oncotarget*, 7 - 14, pp. 18309 - 18324. Doi: 10.18632/oncotarget.7579. PMID: 26918450.

Kurpiewska K, Dziubek K, Katrusiak A, Font J, Ribó M, Vilanova M, Lewiński K. (2016). Structural investigation of ribonuclease A conformational preferences using high pressure protein crystallography. *Chemical Physics*, 468, pp. 53 - 62. doi: 10.1016/j.chemphys.2016.01.010.

### Book:

Castro, J., Ribó, M., Benito, A., Vilanova M (2016). Approaches to Endow Ribonucleases with Antitumor Activity: Lessons Learned from the Native Cytotoxic Ribonucleases, Chapter 6, pg 135-168; *Anti-cancer Drugs - Nature, Synthesis and Cell*, Dr. Jasna Bankovic (Ed.), InTech, DOI: 10.5772/65730. ISBN 978-953-51-2814-4

## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 70)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Antoni Benito
- Microscopio Láser Espectral Confocal (UNGI10-4E-471)  
Sponsored by: Ministerio de Ciencia y Innovación.  
Convocatoria de Infraestructura Científico Tecnológica  
Duration: 2012 - 2016  
Marc Ribó Panosa
- Ribonucleasas e inteínas como herramientas moleculares para el desarrollo de fármacos antitumorales y estudio de proteinopatías. Referencia: BIO2013-43517-R  
Sponsored by: Ministerio de Economía i Competitividad (MINECO)  
Duration: 2014 - 2016  
Marc Ribó i Antoni Benito

- Eines per al desenvolupament de fàrmacs antitumorals i per a l'estudi de proteinopaties Referència: MPCUdG2016-18  
Sponsored by: Universitat de Girona  
Duration: 2016-2017  
Antoni Benito and Jessica Castro

## Patents

- Authors: Vilanova, M., Benito, A., Ribó, M., Castro, J., Tubert, P., Vert, A.  
Title: Proteínas recombinantes con efecto antitumoral (referencia P1857ES00)  
Patent number: PCT/ES2012/07015  
Corporation: Universitat de Girona

# STATISTICS AND DATA ANALYSIS

## University of Girona

Recognised as a consolidated research group - 2014SGR551

### Group members

#### Group leader

Josep Antoni Martín- Fernández

#### Post-doctoral researchers

Carles Barceló

M. Glòria Mateu

Santiago Thió Fernández

Pepus Daunis I Estadella

Vera Pawlowsky

Marina Vives

#### Post-graduate researchers

Marc Comas

Iván Galván

#### Technician

Álvaro Franquet

### Strategic objectives

To progress in the statistical analysis of compositional data and their mathematical foundations. The range of application of the techniques developed is very broad.

The central theme that gives cohesion to the group research is the statistical analysis of compositional data. In the fields of Geology, Medicine, Genomics, Petrology, Chemistry, Economics, Archaeometry, etc. usual work with data vectors whose components represent the relative contribution of different parts in relation to total, resulting in compositional samples. The general objective of the group is to advance the statistical analysis of compositional data and their mathematical foundations. The range of application of the techniques developed is very broad.

1. Progress in the theoretical-methodological:
  - 1.a. Contingency tables. Index association compositional variables.
  - 1.b Adapt generalized linear models to the compositional geometry.
2. Development of exploratory and descriptive techniques:
  - 2.a. New technique exploratory principal balance (SBP) compositional.

- 2.b. Parametric methods of grouping.
- 2.c. Preprocessing and processing compositional values at the border and censored.
- 2.d. QQ new diagrams for the study of Hwe Genetics.

3. Studies and applications in other fields of knowledge:
  - 3.a. Study of levels of specialization of individuals
  - 3.b. Application of differential equations in the simplex models of evolution, natural resources and food systems.
  - 3.c. Compositional Genetics. Study of Hardy-Weinberg Equilibrium (Hwe).
  - 3.d. Statistical techniques for compositional process control.
4. Training activities, transfer and dissemination:
  - 4.a. Training acadèmia: CodaCourse and online
  - 4.b. Conferences-meetings: CoDaWork 2015; seminars Group
  - 4.c. Software: CoDaPack and packages for R

## Main line of research

The central theme that gives cohesion of the research group is the statistical analysis of compositional data (eg vector percentages). This type of data is characterized by being positive components of random vectors and constant amount (e.g., 100, 1, 1 million). This restriction makes the techniques of statistical analysis and interpretation standards not applicable. While this is an old problem that has caused many disputes among researchers, it was not until the 80s when the professor J. Aitchison gives, from a strictly statistical perspective, the first indications to analyze such consistently data. From these first indications has been observed that the mathematical foundations of these rigorous statistical analysis is based on defining a specific geometry on the simplex (space support compositional data) from which you can develop with rigor all the usual analyzes (cluster analysis, discriminant analysis, factor analysis, regression models, etc). All this makes the subject of the research group is not limited to the development of techniques for the statistical analysis of compositional data, but also to address the underlying issues strictly mathematical techniques and those belonging to the fields of geometry, the measure theory and differential and integral calculus on the simplex which can be applied to other media, such as  $R + R^2 + (0,1)$  and others.

Geology, Petrology, Medicine, Chemistry, Economics, Archaeometry, etc. usual work with data vectors whose components represent the relative contribution of different parts in relation to total (percentages), which gives rise to compositional samples.

## Publications

### Originals (I.F.:36.029):

Gloor GB, Wu JR, Pawlowsky-Glahn V, Egozcue JJ. (2016). It's all relative: analyzing microbiome data as compositions. *Annals of epidemiology*, 26(5):322-9. doi: 10.1016/j.annepidem.2016.03.003. PMID: 27143475.

García-Gil M, Blanch J, Comas-Cufí M, Daunis-i-Estadella J, Bolívar B, Martí R, Ponjoan A, Alves-Cabrato L, Ramos R. (2016). Patterns of statin use and cholesterol goal attainment in a high-risk cardiovascular population: A retrospective study of primary care electronic medical records. *Journal of clinical lipidology*, 10(1):134-42. doi: 10.1016/j.jacl.2015.10.007. PMID: 26892130.

Puig J, Sánchez-González J, Blasco G, Daunis-I-Estadella P, Federau C, Alberich-Bayarri Á, Biarnes C, Nael K, Essig M, Jain R, Wintermark M, Pedraza S. (2016). Intravoxel Incoherent Motion Metrics as Potential Biomarkers for Survival in Glioblastoma. *Plos one*, 11(7):e0158887. doi: 10.1371/journal.pone.0158887. PMID: 27387822.

Dumuid D, Olds T, Lewis LK, Martín-Fernández JA, Barreira T, Broyles S, Chaput JP, Fogelholm M7, Hu G, Kuriyan R, Kurpad A, Lambert EV, Maia J, Matsudo V, Onywera VO, Sarmiento OL, Standage M, Tremblay MS, Tudor-Locke C, Zhao P, Katzmarzyk P, Gillison F, Maher C; ISCOLE research group.. (2016). The adiposity of children is associated with their lifestyle behaviours: a cluster analysis of school-aged children from 12 nations. *Pediatric obesity*, doi: 10.1111/ijpo.12196. PMID: 28027427.

Dumuid D, Olds T, Lewis LK, Martín-Fernández JA, Katzmarzyk PT, Barreira T, Broyles ST, Chaput JP, Fogelholm M, Hu G, Kuriyan R, Kurpad A, Lambert EV, Maia J, Matsudo V, Onywera VO, Sarmiento OL, Standage M, Tremblay MS, Tudor-Locke C, Zhao P, Gillison F, Maher C; International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE) research group. (2016). Health-Related Quality of Life and Lifestyle Behavior Clusters in School-Aged Children from 12 Countries. *Journal of Pediatrics*, pii: S0022-3476(16)31543-8. doi: 10.1016/j.jpeds.2016.12.048. PMID: 28081885.

Josep Puig; Gerard Blasco; Josep Daunis-i-Estadella; Angel Alberich-Bayarri; Marco Essig; Rajan Jain; Sebastián Remollo; David Hernández; Montserrat Puigdemont; Javier Sánchez-González; Gloria Mateu; Max Wintermark;

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Salvador Pedraza (2016) High-resolution blood-pool-contrast-enhanced MR angiography in glioblastoma: tumor-associated neovascularization as a biomarker for patient survival. A preliminary study *Neuroradiology*, 58(1) 17–26. doi: 10.1007/s00234-015-1599-0.

Puig, J., Blasco, G., Daunis-I-Estadella, J., Moreno, M., Molina, X., Alberich-Bayarri, A., Xifra, G., Pedraza, S., Ricart, W., Fernández-Aranda, F., Fernández-Real, J.M. Lower serum osteocalcin concentrations are associated with brain microstructural changes and worse cognitive performance (2016). *Clinical Endocrinology* 84(5), 756–763. DOI: 10.1111/cen.12954.

Imma Boada, Antonio Rodriguez-Benitez, Juan Manuel Garcia-Gonzalez, Santiago Thió-Henestrosa, and Mateu Sbert . (2016). "30:2:" A Game Designed to Promote the Cardiopulmonary Resuscitation Protocol. *International Journal of Computer Games Technology*, Volume 2016, Article ID 8251461, 14 pages. doi: 10.1155/2016/8251461.

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## Grants for research in progress

- Grup de Recerca Reconegut per la Generalitat de Catalunya (2014 SGR 551)  
Sponsored by: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)  
Duration: 2014 - 2016  
Josep Antoni Martín
- Statistical MEthods in resTRICTed spaceS (METRICS: MÉTODOS ESTADÍSTICOS en ESPACIOS RESTRINGIDOS)  
Sponsored by: Ministerio de Ciencia e Innovación (MICINN) / MTM2012-33236  
Duration: 2013 - 2017  
Josep Antoni Martín
- Compositional Data Analysis and RElated meThOdS (CODA-RETOS). MINISTERIO ECONOMÍA Y COMPETITIVIDAD (Ref: MTM2015-65016-C2-1-R (MINECO/FEDER,UE); 2016-2018) 68400Euros.  
Main researchers: Dr. J.A. Martín-Fernández and G. Mateu-Figueras. (Team: 10 researchers).

# STATISTICS, ECONOMETRICS AND HEALTH (GRECS)



## University of Girona

Team involved in "Centro de Investigación Biomédica en Red en Epidemiología y Salud Pública" (CIBEResp)

### Group members

#### Group leader

Marc Saez

#### Post-doctoral researchers

Maria Antònia Barceló

Laia Maynou

Laura Serra

Germà Coenders

Gemma Oscar

Gemma Renart

Lluís Coromina

Montserrat Pugi

Diego Varga

Berta Ferrer

Carne Saurina

#### Post-graduate researchers

Elena Arroyo

Carne Cañizares

Basili Bragulat

Marta Solans Margalef

#### Collaborators

Dr. Rafael Marcos-Gragera,  
Registre de Càncer de Girona.  
Associat a temps parcial UdG

Dra. Aitana Lertxundi Manterola,  
Professor ajudant doctor Universitat  
del País Basc

Dra. Àngels Xabadia Palmada,  
Titular d'Universitat Universitat de  
Girona

Dr. Gabriel Coll de Tuero, IAS, Fundació Gol i Gurina, Girona i Associat a temps parcial UdG

### Main line of research

- 1- Epidemiology
  - 1.1- Socioeconomic inequalities in health
  - 1.2- Environmental inequalities in health
  - 1.3- Clinical Epidemiology - Cardiovascular risk factors, amyotrophic lateral sclerosis (ALS)
  - 1.4- Epidemiology of cancer
  - 1.5- Crime as a public health problem
2. Econometric's health
  - 2.1- Crisis effects on health
    - Use of health services.
    - Perception of health
    - Prevalence and incidence of metabolic syndrome
    - Suicide mortality
    - Mental health
    - Psychotropic
  - 2.2- Evaluation of public policies

### Publications

#### Originals:

Maynou L, Saez M. (2016), Economic crisis and health inequalities: evidence from the european union. *International Journal for Equity in Health* 15:135. doi: 10.1186/s12939-016-0425-6. PMID: 27586144.

Barceló Ma, Varga D, Tobias A, Díaz J, Linares C, Saez M. (2016). Long term effects of traffic noise on mortality in the city of barcelona, 2004-2007. *Regional Studies*, 147:193-206. doi: 10.1016/j.envres.2016.02.010. PMID: 26894815. I.F.: 1,99

Barceló Ma, Coll-Negre M, Coll-De-Tuero G, Saez M. (2016). Effects of the financial crisis on psychotropic drug consumption in a cohort from a semi-urban region in catalonia, spain. *Plos One*, 11(2):e0148594. doi: 10.1371/journal.pone.0148594. PMID: 26872210.

Ferri Mj, Saez M, Figueras J, Fort E, Sabat M, López-Ben S, De Llorens R, Aleixandre Rn, Peracaula R. (2016). Improved pancreatic adenocarcinoma diagnosis in jaundiced and non-jaundiced pancreatic adenocarcinoma patients through the combination of routine clinical

markers associated to pancreatic adenocarcinoma pathophysiology. *Plos One*, 11(1):e0147214. doi: 10.1371/journal.pone.0147214. PMID: 26808421.

Maynou-Pujolràs L, Saez M, López-Casasnovas G. (2016). Has the economic crisis widened the intra-urban socioeconomic inequalities in mortality? The case of barcelona, spain. *Journal of Epidemiology and Community Health*, 70(2):114-124. doi: 10.1136/jech-2013-203447.

Soy-Massoni E, Langemeyer J, Varga D, Saez M, Pintó J. (2016). The importance of ecosystem services in coastal agricultural landscapes: case study from the costa brava, catalonia. *Ecosystem Services*, 17:43-52. doi: 10.1016/j.ecoser.2015.11.004.

Cabrera-León A, Daponte Codina A, Mateo I, Arroyo-Borrell E, Bartoll X, Bravo Mj, Domínguez-Berjón Mf, Renart G, Álvarez-Dardet C, Marí-Dell'olmo M, Bolívar Muñoz J, Saez M, Escribà-Agüir V, Palència L, López Mj, Saurina C, Puig V, Martín U, Gotsens M, Borrell C, Serra Saurina L, Sordo L, Bacigalupe A, Rodríguez-Sanz M, Pérez G, Espelt A, Ruiz M, Bernal M. (2016). Indicadores contextuales para evaluar los determinantes sociales de la salud y la crisis económica española. *Gaceta Sanitaria*. doi: 10.1016/j.gaceta.2016.06.014.

Alabert M, Arbussà A, Saez M. (2016). Colaboraciones inter-administrativas en la gestión de la salud pública en municipios menores de 10.000 habitantes. *Gaceta Sanitaria*. doi: 10.1016/j.gaceta.2016.06.008.

Paz Ma, De La Sierra A, Saez M, Barceló Ma, Rodríguez Jj, Castro S, Lagarón C, Garrido Jm, Vera P, Coll De Tuero G. (2016). Treatment efficacy of anti-hypertensive drugs in monotherapy or combination: atom systematic review and meta-analysis of randomized clinical trials according to prisma statement. *Medicine*, (30):e4071. doi: 10.1097/MD.0000000000004071.

Soy-Massoni E, Bieling C, Langemeyer J, Varga D, Saez M, Pinto J. (2016). Societal benefits from agricultural landscapes in girona, catalonia. *Outlook on Agriculture*, 45(2):100-110. doi: 10.1177/0030727016650772.

Meléndez C, Arroyo-Borrell E, Saez M. (2016). Análisis de datos de pacientes subagudos con información registrada en el conjunto mínimo básico de datos sociosanitarios (cmbd-rss). *Revista Española de Salud Pública*, 90:e1-e7. PMID: 27708254.

Sicras-Mainar A, Navarro-Artieda R, Ruíz-Torrejón A, Saez M, Coll-De-Tuero G. (2016). Persistence and concomitant medication in patient with overactive bladder treated with antimuscarinic agents in primary care. An observational baseline study. *Actas Urológicas Españolas*, 40(2):96-101. doi: 10.1016/j.acuro.2015.09.004. PMID: 26556482.

## Grants for research in progress

- High resolution project on prognosis and care of cancer patients'. Acciones Complementarias de la Convocatoria 2014 de la Acción Estratégica en Salud 2013-2016  
Duration: 2014 - 2016  
Rafel Marcos-Gragera, María José Sánchez Pérez
- Ajut del programa foment de la Transferència TRANSFERUdG2016 de la Universitat de Girona (TRANSFER2016/24)  
Sponsored by: Universitat de Girona  
Duration: 2017-2018  
Marc Sáez
- Ajut per a la millora de la productivitat científica dels grups de recerca de la Universitat de Girona 2016-2018 (MPCUdG2016/69)  
Sponsored by: Universitat de Girona  
Duration: 2016-2018  
Marc Sáez

## Patents

- Title: Modelo de diagnóstico de cáncer de páncreas. combinatoria de los marcadores clínicos CA19.9, CEA, IGF-1 y albúmina que mejoran el diagnóstico de cáncer de páncreas frente a la pancreatitis crónica  
Patent Number: P 2014 31022  
Corporation: Universitat de Girona



# **Public disclosure activities**



# SEMINARS

**Seminars organizes in 2016 by IDIBGI**  
are listed below:

• **Given by external staff:**

- **Presentació del repositori de dades de l'estudi MESGI50: Maduresa i Envel·liment Satisfactori a Girona.**  
14th June 2016.

Dr. Josep Garre-Olmo (PI Research group of aging, disability and health, IDIBGI), Laia Calvó-Perxas (Research group of aging, disability and health, IDIBGI), Stefan Gruber (Max Planck Institute for Social Law and Social Policy, Munich Center for the Economics of Aging), Eva Aranda (TNS Demoscopia), Cristina Bosch (UdG nursing department).

- **És la microbiota la baula perduda de les malalties digestives?.**

16th December 2016.

Dr. Xavier Aldeguer (PI Research group in digestive diseases and microbiota).

• **Given by external staff:**

- **Combining complex networks and data mining for tackling biomedical problems.**

19th April 2016.

Sr. Carlos Álvarez Pereira (President Fundación Innaxis), Dr. Massimiliano Zanin (Principal Researcher, Fundación Innaxis).

- **Brain metastasis: deciphering the biology to develop novel therapies.**

27th June 2016.

Dr. Manuel Valiente (Group Leader Brain Metastasis Group Molecular Oncology Programme CNIO).

- **Les oportunitats de finançament europeu de la R+D+i en l'àmbit de la salut.**

29th June 2016.

Sr. Juan Riese (ISCI- EU Research Office and NCP of SC1 "Health, demographic change and wellbeing" of H2020), Sra. Lucía del Río (ISCI- EU Research Office and NCP of ERC), Sra. María José G. Suso (ISCI- EU Research Office NCP of "Consumers, Health, Agriculture and Food Executive agency" of DG Sante). Organized in collaboration with UdG.

- **Jornada RRI Tools Girona: Eines pràctiques per fer recerca i innovació amb la societat i per a la societat.**

3rd October 2016.

Rosina Malagrida (Head of the Outreach Unit of Biomedical Research IrsiCaixa and coordinator of RRI Spanish Hub Tools). Organized in collaboration with UdG.

**Conference organized by IDIBGI**  
are listed below:

- **VIII Jornada de Recerca de l'ICS: Parlem d'Obesitat i Diabetis Tipus 2.**

3rd June 2016.

Dr. José Manuel Fernández Real (PI Research group in Nutrition, Eumetabolism and Health, IDIBGI). Organized in collaboration with Catalan Health Institute.

- **Jornades Gironines del Mediterrani en Esclerosi Múltiple.**

7th-8th October 2016.

Dr. Lluís Ramió (PI Research group in Neurodegeneration and Neuroinflammation, Head of Neurology Service, Mu Hospital Universitari Dr. Josep Trueta and IAS).

- **XV Jornada Infermeria dels serveis de Medicina Interna.**

18th November 2016.

Hospital Santa Caterina (IAS).

**Courses organized by IDIBGI**  
are listed below::

- **I Curs de Cirurgia Colorectal.**

27th October 2016.

General Surgery, Coloproctar Cirurgy Unit, Hospital Dr. Josep Trueta (Dr. Planellas, Dr. Farrés).

- **I Curs de Proctologia per Atenció Primària.**

1st December 2016.

General Surgery, Coloproctar Cirurgy Unit, Hospital Dr. Josep Trueta (Dr. Planellas, Dr. Farrés).

# VISITS

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This year IDIBGI has received the annual visit of La Marató de TV3 with which the participants of La Marató can know first hand the research that is being carried out at IDIBGI thanks to the projects financed. The visit took place on May 3, 2016 and we had 25 visitors.

IDIBGI has also received the visit of the Young Research Campus of the University of Girona for 1st-year high school students. For two weeks the students are distributed by areas and visit research centers. This year the IDIBGI received two occasions (7 and 11 July 2017) occasions for the students at the Health Ministry.

Finally, IDIBGI also received the visit on December 16, 2017 of 20 students from the Institut Josep Brugulat de Banyoles, who had the opportunity to learn about the way in which the research and the different fields of research are carried out of the IDIBGI



# WINNERS OF THE IDIBGI AWARD 2016

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The IDIBGI Award for the best final year project of the Nursing School. Undergraduates

**Mireia Moreno Ferrer.** "Necessitats formatives dels professionals d'un centre d'educació especial envers la salut de l'alumnat amb paràlisi cerebral"

**Aitor Valcàrcel Marchante.** "Infermeria d'Atenció Primària gironina: coneixements sobre medicació inclosa en gestió infermera de la demanda"

The IDIBGI Award for the best final year project the Medicine School. Undergraduates

**Andrea Ventura Martínez.** "Efficacy and safety of negative pressure wound therapy in treating hidradenitis suppurativa and reducing its relapses: A randomized controlled clinical trial".

**Adrià Costa Roig.** "Management of acute Cholecystitis in a medium-sized centre"

**Mireia Català Besa.** "Metformin therapy to improve adult height prognosis in growth hormone deficient children treated with growth hormone"

**Marta Valls Gay.** "Role of Fine-Needle Aspiration Cytology in the Diagnosis of Parotid Gland Tumours: a Cross-Sectional Study"

**Adrià Prat Sala.** "Percutaneous fixation versus conservative treatment in the study of the quality of life after acetabular fractures in an elderly population"

The IDIBGI Award for the best final year project the Medicine School. Master.

**Judit Pons Baños.** "Relació entre els determinants socials de la salut i la conducta suïcida a la comarca d'Osona durant els anys 2013-2015"

# FUNDRAISING

Mid-2016, IDIBGI created a fundraising department with the aim of raising funds for research but also to raise awareness about the work being done at the institute.

During the second half of the year, it engaged with several philanthropic activities (like "La Cursa de la Dona" in Girona and the Christmas Market organized by "El Crep de Mi Vida") and contacted with about 80 local companies, several of which became "Friends of IDIBGI".



# ANNEXES

## Annex 1. List of Clinical Trials

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### CARDIOLOGY

**SEC-ECE-2015-0.** Gabriel Vázquez Oliva. "Estudio epidemiológico para evaluar el manejo, calidad de vida y adherencia terapéutica de los pacientes con enfermedad coronaria estable."

**COR-BVS-2016-01.** Joan Bassaganyas. "Registro de pacientes con dispositivo biorreabsorbible en la práctica clínica habitual: medida de costes, efectividad, QALYs, y eficiencia".

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### DIGESTIVE DEPARTMENT

**GIS-2015-INCIDENCIA.** Xavier Aldeguer Manté. "Estudio epidemiológico de la incidencia de enfermedad inflamatoria intestinal en población adulta en España".

**E5501-G000-311.** Isabel Serra. "Estudio aleatorizado, internacional, doble ciego, controlado con placebo, de grupos paralelos para evaluar la eficacia y seguridad de avatrombopag por vía oral una vez al día para el tratamiento de adultos con trombocitopenia asociada a enfermedad hepática antes de un procedimiento programado".

**MLN0002SC-3030.** Xavier Aldeguer Mante. "A Phase 3b Open-label Study to Determine the Long-term Safety and Efficacy of Vedolizumab Subcutaneous in Subjects With Ulcerative Colitis and Crohn's Disease".

**MLN0002SC-3031.** Xavier Aldeguer Mante. "Estudio de fase III aleatorizado, doble ciego, controlado con placebo para evaluar la eficacia y la seguridad de vedolizumab subcutáneo como tratamiento de mantenimiento en sujetos con la enfermedad de Crohn activa de moderada a grave que alcanzaron una respuesta clínica después del tratamiento intravenoso abierto con vedolizumab".

**UC0011.** Xavier Aldeguer Mante. "A multicenter, subject-blind, investigator-blind, randomized, placebo-controlled study evaluating the efficacy, safety, tolerability, and pharmacokinetics of an iv loading dose followed by sc administration of bimekizumab (UCB4940) in subjects with moderate to severe active ulcerative colitis".

**ZOB INF 1402.** Xavier Aldeguer Mante. "Post-Marketing Observational Cohort Study of Patients with Inflammatory Bowel Disease (IBD) Treated with Inflectra (Infliximab) in Usual Clinical Practice (CONNECT-IBD)".

**TAK-INF-2016-01.** Xavier Aldeguer Mante. "Impacto de las comorbilidades en la respuesta al tratamiento en pacientes con enfermedad inflamatoria intestinal: estudio VERNE".

**ABB-OMB-2016-01.** Carmen López Núñez. "Evidencia en Vida Real de la efectividad de Paritaprevir/r/Ombitasvir ± Dasabuvir (RÉGIMEN ABBVIE) ± Ribavirina en pacientes con Hepatitis C Crónica - Estudio Observacional Retrospectivo en España".

**GIS-SUSANTI-TNF-2015.** David Busquets Casals. "Suspensión del tratamiento anti-TNF en pacientes con enfermedad inflamatoria intestinal: ensayo clínico multicéntrico, prospectivo y aleatorizado".

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### EMERGENCY DEPARTMENT

**LP101-CL-201.** Carolina Lorencio. "A Phase 2, Multicenter, Randomized, Double-Blind, Comparator-Controlled Study of the Efficacy, Safety, and Pharmacokinetics of Intravenous Ulimorelin (LP101) in Patients with Enteral Feeding Intolerance".

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### ENDOCRINOLOGY

**LPS13931.** Wifredo Ricart Engel. "REACH CONTROL: "Ensayo mundo real pragmático, de 26 semanas con 6 meses de extensión, aleatorizado, abierto, de 2 brazos paralelos, para evaluar los resultados de los beneficios clínicos y de salud de Toujeo® en comparación a las insulinas de tratamiento estándar al iniciar insulina basal en pacientes con Diabetes Mellitus Tipo 2 inadecuadamente controlada nunca antes insulinizados".

**MBGS205.** Wifredo Ricart Engel. "Estudio de fase IIb, aleatorizado, multicéntrico, doble ciego, de búsqueda de dosis y controlado con placebo para evaluar la seguridad y eficacia de BGS649 en varones obesos con hipogonadismo hipogonadotrópico".

**GLP116174.** Mercé Fernández Balsells. "Estudio a largo plazo, aleatorizado, doble ciego, controlado con placebo para determinar el efecto de Albiglutida, cuando se añade al tratamiento hipoglucemiante estándar, sobre eventos cardiovasculares mayores en pacientes con Diabetes Mellitus Tipo2".

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### GENERAL CIRURGY

**DUOPAN-EPAM.** Santiago López-Ben. "Duodenopancreatocetomía cefálica en tumores de páncreas y periampulares: abordaje inicial de la arteria mesentérica superior versus abordaje clásico. Estudio prospectivo, aleatorizado y multicéntrico".

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**INTERNAL MEDICINE**

**DS1040-B-U107.** Ferran García-Bragado. "clinical study protocol a phase 1b, randomized, double-blind, placebo-controlled, multi-center, single ascending dose study to assess the safety, efficacy, pharmacokinetics, and pharmacodynamics of ds-1040b when added to standard of care anticoagulation therapy in subjects with acute submassive pulmonary embolism DS1040-B-U107".

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**INTENSIVE MEDICINA**

**112.** Josep Maria Sirvent. "Ensayo de fase III multicéntrico, aleatorizado, abierto de Telavancina en comparación con la terapia intravenosa convencional en el tratamiento de pacientes con bacteriemia por *Staphylococcus aureus*, incluyendo la endocarditis infecciosa".

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**MENTAL HEALTH**

**LSM-CLO-2016-01.** Jordi Cid. "Estudio observacional multicéntrico sobre el coste-efectividad de los antipsicóticos de acción prolongada versus los antipsicóticos orales en pacientes con esquizofrenia".

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**NEPHROLOGY**

**GSS-FBZ-2014-04.** Isabel García Méndez. "Estudio de la Enfermedad de Fabry en pacientes en diálisis peritoneal".

**PD-αAPD-01-INT.** Isabel García Méndez. "PD- Mejora de la eficacia de la diálisis con la DPA adaptada".

**200807.** Jordi Calabia Martínez. "A Phase 3 randomized, open-label (Sponsor-blind), active-controlled, parallel-group, multi-center, event driven study in non-dialysis subjects with anemia associated with chronic kidney disease to evaluate the safety and efficacy of daprodustat compared to darbepoetin alfa".

**200808.** Jordi Calabia Martínez. "A Phase 3 randomized, open-label (Sponsor-blind), active-controlled, parallel-group, multi-center, event driven study in non-dialysis subjects with anemia associated with chronic kidney disease to evaluate the safety and efficacy of daprodustat compared to darbepoetin alfa".

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**NEUROLOGY**

**TEV-ACE-2015-01.** Lluís Ramió Torrentà. "Registro español

de pacientes tratados con acetato de glatiramero (Copaxone®) 40 mg/ml".

**OBS13434.** Lluís Ramió Torrentà. "Estudio de seguridad postautorización, prospectivo, multicéntrico y observacional para evaluar el perfil de seguridad a largo plazo del tratamiento con LEMTRADA® (ALEMTUZUMAB) en pacientes con formas recidivantes de esclerosis múltiple".

**RPC01-3001.** Lluís Ramió Torrentà. "Estudio multicéntrico de extensión abierta de RPC1063 oral en la esclerosis múltiple recidivante".

**AC-058B301.** Lluís Ramió Torrentà. "Estudio multicéntrico, aleatorizado, doble ciego, de grupos paralelos, de superioridad, con control activo, para comparar la eficacia y seguridad de ponesimod frente a teriflunomida en sujetos con esclerosis múltiple recidivante".

**GNC-003.** Lluís Ramió Torrentà. "Ensayo clínico de fase IIb, internacional, en doble ciego, aleatorizado y controlado con placebo, para evaluar la eficacia, la seguridad y la farmacocinética de GNBAC1 en pacientes con esclerosis múltiple recidivante remitente".

**105MS401.** Lluís Ramió Torrentà. "Plegridy™ (peginterferon β-1a) Real World Effectiveness and Safety Observational Program".

**COG-OX.** Lluís Ramió Torrentà. "Estudio transversal multicéntrico para evaluar la implicación del estrés oxidativo en el deterioro cognitivo en pacientes con EM de curso leve de la enfermedad, tratados con FÁRMACOS DE PRIMERA LÍNEA vs pacientes no tratados Y un grupo control".

**MA30005.** Lluís Ramió Torrentà. "Estudio abierto para evaluar la eficacia y la seguridad de ocrelizumab en pacientes con esclerosis múltiple remitente-recidivante que tienen una respuesta subóptima a un ciclo adecuado de tratamiento modificador de la enfermedad".

**109MS421.** Lluís Ramió Torrentà. "A multicenter, global, retrospective, observational study to characterize real-world clinical outcomes in patients with relapsing-remitting multiple sclerosis treated with disease-modifying therapies (Tecfidera®, Copaxone®, Aubagio®, or Gilenya®) (EFFECT)".

**COMB157G2301.** Lluís Ramió Torrentà. "Estudio aleatorizado, doble ciego, doble enmascarado, de grupos paralelos para comparar la eficacia y seguridad de ofatumumab frente a teriflunomida en pacientes con esclerosis múltiple que cursa con brotes".

# ANNEXES

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**SAN-TER-2015-02.** Lluís Ramió Torrentà. "Estudio observacional, no intervencionista, para evaluar los cambios en la calidad de vida en pacientes tratados con teriflunomida en práctica clínica habitual".

**ROC-MS-ML39253.** Lluís Ramió Torrentà. "Entendiendo la esclerosis múltiple primaria progresiva. Subtítulo: entendiendo la EMPP (UPPMS)".

**SRA.** Joaquim Serena Leal. "ensayo clínico para investigar los beneficios clínicos y organizativos del SRA, una nueva tecnología en la detección de fibrilación auricular como factor etiológico en pacientes ingresados en la unidad de ictus con un accidente cerebrovascular o un ataque isquémico transitorio".

**CV006-004.** Joaquim Serena Leal. "A Phase 2, Placebo Controlled, Randomized, Double-Blind, Parallel-Arm Study to Evaluate Efficacy and Safety of BMS-986141 For the Prevention of Recurrent Brain Infarction in Subjects receiving acetylsalicylic acid (ASA) following Acute Ischemic Stroke or Transient Ischemic Attack".

**RACECAT.** Joaquim Serena Leal. "Estudio Comparando el TRAslado de Pacientes con Ictus Agudo y Sospecha de Oclusión de Gran Vaso Cerebral al CEntro Local de Ictus más Cercano vs. Traslado Directo a un Centro Endovascular en el territorio CATALán".

**B2341002.** Yolanda Silva Blas. "a phase 1b multicenter, open-label study to evaluate the safety and tolerability and determine the maximum tolerated dose of PF-05230907 in subjects with intracerebral hemorrhage (ICH)".

**101SK202.** Mikel Terceño. "A Multicenter, Double-Blind, Placebo-Controlled, Randomized, Parallel-Group, Dose-Ranging Study to Evaluate the Safety and Efficacy of Intravenous Natalizumab (BG00002) in Acute Ischemic Stroke".

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## OFTALMOLOGY

**THE-GLA-2015-01.** Teresa Torrent. "fast: evaluación rápida del trastorno de la superficie ocular (Fast Assessment of ocular Surface Trouble)".

**MC2-03-C1.** Teresa Torrent. "Estudio en fase II, multicéntrico, aleatorizado, con enmascaramiento doble, de 4 grupos paralelos, controlado y de 6 meses de duración para evaluar la seguridad y la eficacia de una dispersión oftálmica de ciclosporina PAD (CsA 0,06 % y 0,03 %) administrada una vez al día en combinación con terapia lubricante y seguimiento de la seguridad de tres meses tras el tratamiento en pacientes con xeroftalmía entre moderada y grave".

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**TG-MV-015.** Maria Bozal de Febrer. "A phase 2, randomised, double-masked, sham-controlled, multi-centre clinical trial to evaluate the efficacy and safety of ocriplasmin in inducing total posterior vitreous detachment (PVD) in subjects with non-proliferative diabetic retinopathy (NPDR) (circle)".

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## MEDICAL ONCOLOGY

**GEIS45.** Jordi Rubió Casadevall. "Determinantes clínicos y moleculares de respuesta y progresión a la inhibición de kit en pacientes con tumores del estroma gastrointestinal (Gist) con respuesta prolongada a Imatinib".

**GIT-ADE-2015-02.** Adelaida García Velasco. "Estudio epidemiológico, observacional, retrospectivo y multicéntrico para evaluar las características del tratamiento con gemcitabina y nab-paclitaxel en pacientes con adenocarcinoma de páncreas metastásico tratados en primera línea en la práctica clínica habitual. Estudio ANICE-PAC".

**BIBABRAX.** Adelaida García Velasco. "Estudio fase II de nab-paclitaxel y gemcitabina en pacientes ancianos con adenocarcinoma de páncreas localmente avanzado o metastásico no tratado".

**PM0259CA232J1.** Joaquim Bosch Barrera. "Estudio aleatorizado en fase II comparando vinorelbina oral como agente único administrada con dos esquemas diferentes en pacientes con cáncer de pulmón no microcítico avanzado no aptos para quimioterapia basada en platino" / "Randomized Phase II study comparing single agent oral vinorelbine administered with two different schedules in patients with Advanced Non Small Cell Lung Cancer unfit for a platinum-based chemotherapy".

**ABI-007-NSCL-003.** Joaquim Bosch Barrera. "Estudio de fase III, aleatorizado, abierto y multicéntrico para evaluar la seguridad y la eficacia de NAB-paclitaxel (ABRAXANE®) como tratamiento de mantenimiento después de la inducción con NAB-paclitaxel más carboplatino en sujetos con cáncer de pulmón no microcítico (CPNM) de células escamosas".

**SCRX001-002.** Joaquim Bosch Barrera. "An Open-label, Single-Arm, Phase 2 Study Evaluating the Efficacy, Safety and Pharmacokinetics of Rovalpituzumab Tesirine (SC16LD6.5) for Third-line and Later Treatment of Subjects with Relapsed or Refractory Delta-Like Protein 3-Expressing Small Cell Lung Cancer (TRINITY)".

**GO29438.** Joaquim Bosch Barrera. "A phase III, open-label, randomized study of atezolizumab (MPDL3280A, anti-PD

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L1 antibody) in combination with carboplatin or cisplatin + pemetrexed compared with carboplatin or cisplatin + pemetrexed in patients who are chemotherapy naive and have stage iv non-squamous non-small cell lung cancer”.

**AV-951-15-303.** Núria Sala González. “A Phase 3, Randomized, Controlled, Multi-Center, Open-Label Study to Compare Tivozanib Hydrochloride to Sorafenib in Subjects with Refractory Advanced Renal Cell Carcinoma”.

**BAY-RAD-2015-01.** Núria Sala González. “REASSURE Radium-223 alpha Emitter Agent in nonintervention Safety Study in mCRPC population for longterm Evaluation (Estudio no intervencionista para la evaluación a largo plazo de la seguridad del agente emisor de partículas alfa Radio-223 en pacientes con cáncer de próstata metastásico resistente a la castración (mCRPC)”.

**NLM-AXI-2015-01.** Núria Sala González. “Recopilación de información clínica de pacientes diagnosticados de carcinoma de células renales metastásico que hayan sido tratados con axitinib bajo régimen de Uso Compasivo”.

**PFI-AXI-2014-01.** Núria Sala González. “Axitinib en carcinoma metastásico / avanzado de células renales - Un estudio no intervencionista de resultados terapéuticos reales en pacientes que reciben axitinib en segunda línea después de recibir sunitinib en primera línea [ADONIS]”.

**MO29983.** Núria Sala González. “Estudio multicéntrico, abierto, con un solo grupo de tratamiento para evaluar la seguridad de atezolizumab en pacientes con carcinoma urotelial o no urotelial del tracto urinario localmente avanzado o metastásico”.

**1200261.** Núria Sala González. “Estudio exploratorio de fase II, abierto y con un solo grupo de tratamiento con afatinib oral en monoterapia tras el fracaso a platino en pacientes con carcinoma urotelial avanzado/metastásico con desregulación de los receptores ERBB”.

**Debio 1143-EOC-203.** Pilar Barretina Ginesta. “A Randomized, Double-Blind, Placebo-Controlled Phase II Trial of Neoadjuvant Carboplatin and Paclitaxel, With or Without Debio 1143 in Patients With Newly Diagnosed Advanced Epithelial Ovarian Cancer”.

**B9991009.** Pilar Barretina Ginesta. “A phase 3, multicenter, randomized, open label study of avelumab (MSB0010718C) alone or in combination with pegylated liposomal doxorubicin versus pegylated liposomal doxorubicin alone in patients with platinum resistant/refractory ovarian cancer”.

**GS-US-296-1080.** Raquel Guardado Sánchez. “A Phase 3 Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of GS-5745 Combined

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with mFOLFOX6 as First Line Treatment in Patients with Advanced Gastric or Gastroesophageal Junction Adenocarcinoma”.

**IPS-ANT-2015-01.** Raquel Guardado Sanchez. “Estudio para evaluar la utilidad clínica del cuestionario específico de Calidad de Vida Relacionada con la Salud QLQ-GINET21 en el manejo de pacientes con tumores neuroendocrinos (NETS) gastrointestinales”.

**BAY-ONC-2016-01.** Xavier Hernández Yague. “Estudio observacional retrospectivo sobre el tratamiento del cáncer colorrectal metastásico (CCRM en España)”.

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## CLINICAL HEMATOLOGY

**2215-CL-0301.** David Gallardo Giralt. “A phase 3 open-label, multicenter, randomized study of ASP2215 versus salvage chemotherapy in patients with relapsed or refractory acute myeloid leukemia (AML) with FLT3 mutation”.

**MOR208C204.** Josep Maria Roncero Vidal. “A Phase II/III, Randomised, Multicentre Study of MOR00208 with Bendamustine versus Rituximab with Bendamustine in Patients with Relapsed or Refractory Diffuse Large B-Cell Lymphoma (R-R DLBCL) Who Are Not Eligible for High-Dose Chemotherapy (HDC) and Autologous Stem-Cell Transplantation (ASCT) – B-MIND”.

**2215-CL-0302.** Ramon Guardia. “A Phase 3 Multi-Center, Randomized, Double-Blind, Placebo-Controlled Trial of the FLT3 Inhibitor Gilteritinib (ASP2215) Administered as Maintenance Therapy Following Induction/Consolidation Therapy for Subjects with FLT3/ITD AML in First Complete Remission”.

**SINTRA REV.** Rosa Coll Jordà. “Estudio, multicéntrico, aleatorizado, doble ciego, fase III de Revlimid (Lenalidomida) versus placebo en pacientes con Síndrome Mielodisplásico de bajo riesgo (IPSS bajo e intermedio-1) con alteración en 5q- y anemia sin necesidades transfusionales”.

**SGN33A-005.** Rosa Coll Jordà. “A randomized, double-blind phase 3 study of vadastuximab talirine (SGN-CD33A) versus placebo in combination with azacitidine or decitabine in the treatment of older patients with newly diagnosed acute myeloid leukemia (AML)”.

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## CLINICAL HEMATOLOGY

**2215-CL-0301.** David Gallardo Giralt. “A phase 3 open-label, multicenter, randomized study of ASP2215 versus

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salvage chemotherapy in patients with relapsed or refractory acute myeloid leukemia (AML) with FLT3 mutation”.

**MOR208C204.** Josep Maria Roncero Vidal. “A Phase II/III, Randomised, Multicentre Study of MOR00208 with Bendamustine versus Rituximab with Bendamustine in Patients with Relapsed or Refractory Diffuse Large B-Cell Lymphoma (R-R DLBCL) Who Are Not Eligible for High-Dose Chemotherapy (HDC) and Autologous Stem-Cell Transplantation (ASCT) – B-MIND”.

**2215-CL-0302.** Ramon Guardia. “A Phase 3 Multi-Center, Randomized, Double-Blind, Placebo-Controlled Trial of the FLT3 Inhibitor Gilteritinib (ASP2215) Administered as Maintenance Therapy Following Induction/Consolidation Therapy for Subjects with FLT3/ITD AML in First Complete Remission”.

**SINTRA REV.** Rosa Coll Jordà. “Estudio, multicéntrico, aleatorizado, doble ciego, fase III de Revlimid (Lenalidomida) versus placebo en pacientes con Síndrome Mielodisplásico de bajo riesgo (IPSS bajo e intermedio-1) con alteración en 5q- y anemia sin necesidades transfusionales”.

**SGN33A-005.** Rosa Coll Jordà. “A randomized, double-blind phase 3 study of vadastuximab talirine (SGN-CD33A) versus placebo in combination with azacitidine or decitabine in the treatment of older patients with newly diagnosed acute myeloid leukemia (AML)”.

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## PNEUMOLOGY

**1199.36.** Ramón Orriols. “Ensayo clínico doble ciego, aleatorizado, de grupos paralelos y de 24 semanas para evaluar la eficacia y seguridad de nintedanib oral administrado de forma concomitante con sildenafil oral, en comparación con el tratamiento con nintedanib en monoterapia, en pacientes con fibrosis pulmonar idiopática (IPF) y afectación avanzada de la función pulmonar”.

**MUN-ASM-2016-01.** Gladis Sabater. “Estudio retrospectivo para valorar los criterios que motivan los cambios en la terapia de mantenimiento de los pacientes con asma persistente moderada-grave”.

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## TRAUMATOLOGY

**HIP ATTACK.** Miguel Angel Froufe. “HIP fracture Accelerated surgical care and Treatment trACKI”.

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## UROLOGY

**ES184CC.** Miquel Closas. “Impacto del colector vs el pañal absorbente en la calidad de vida de hombres prostatectomizados con incontinencia urinaria”.

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## VASCULAR CIRURGY

**C1603.** Omar Andres Navarro. “BIOTRONIK – Un registro prospectivo, nacional, multicéntrico de poscomercialización para evaluar el rendimiento clínico del catéter balón liberador de Paclitaxel Paseo-18 Lux en lesiones de la arteria femoropoplítea larga-III ESPAÑA”.







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