

2017

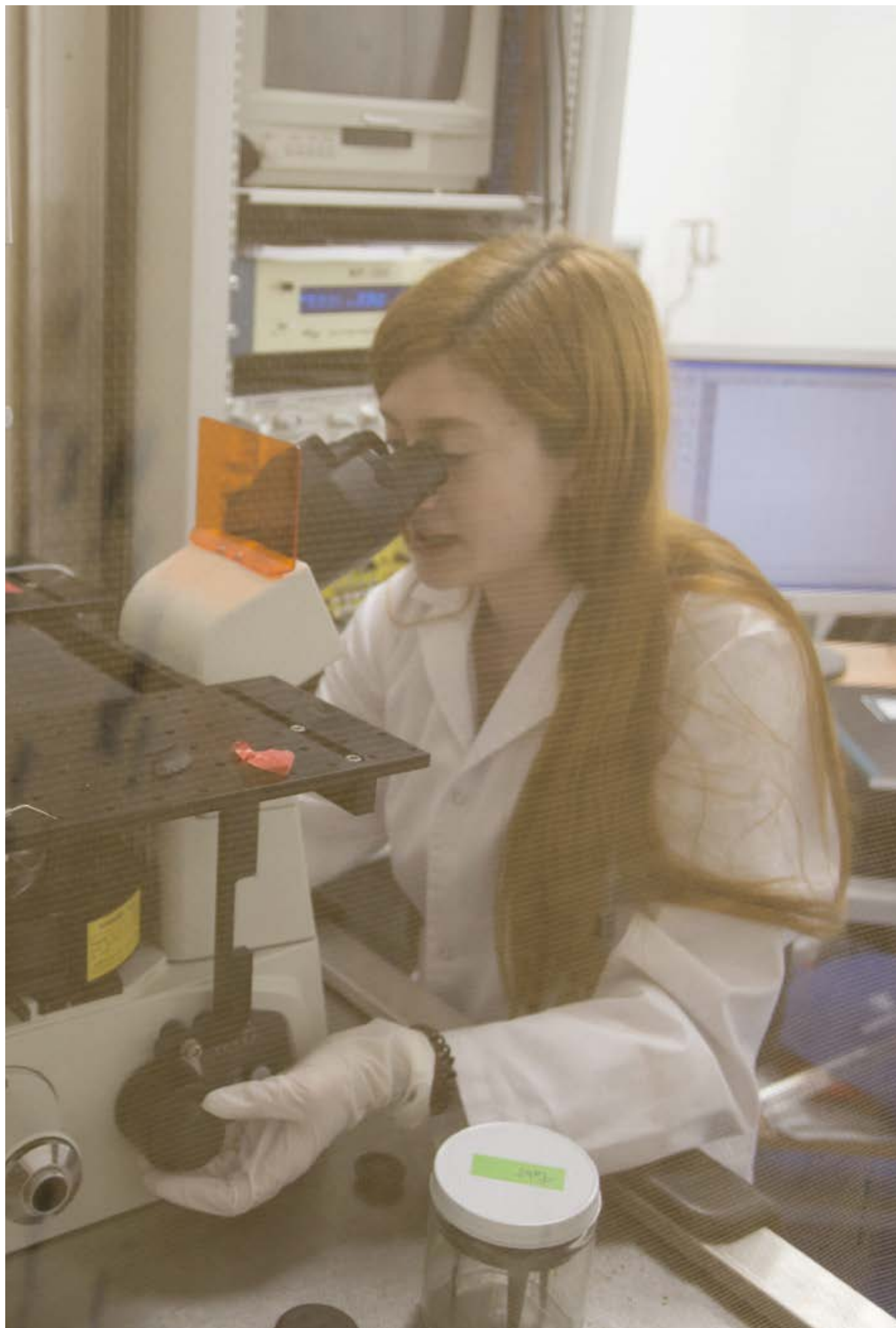
Annual scientific report

Institut d'Investigació Biomèdica de Girona
Dr. Josep Trueta



Institut
d'Investigació
Biomèdica
de Girona
Dr. Josep Trueta

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HEALTH PSYCHOLOGY
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Presentation

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).

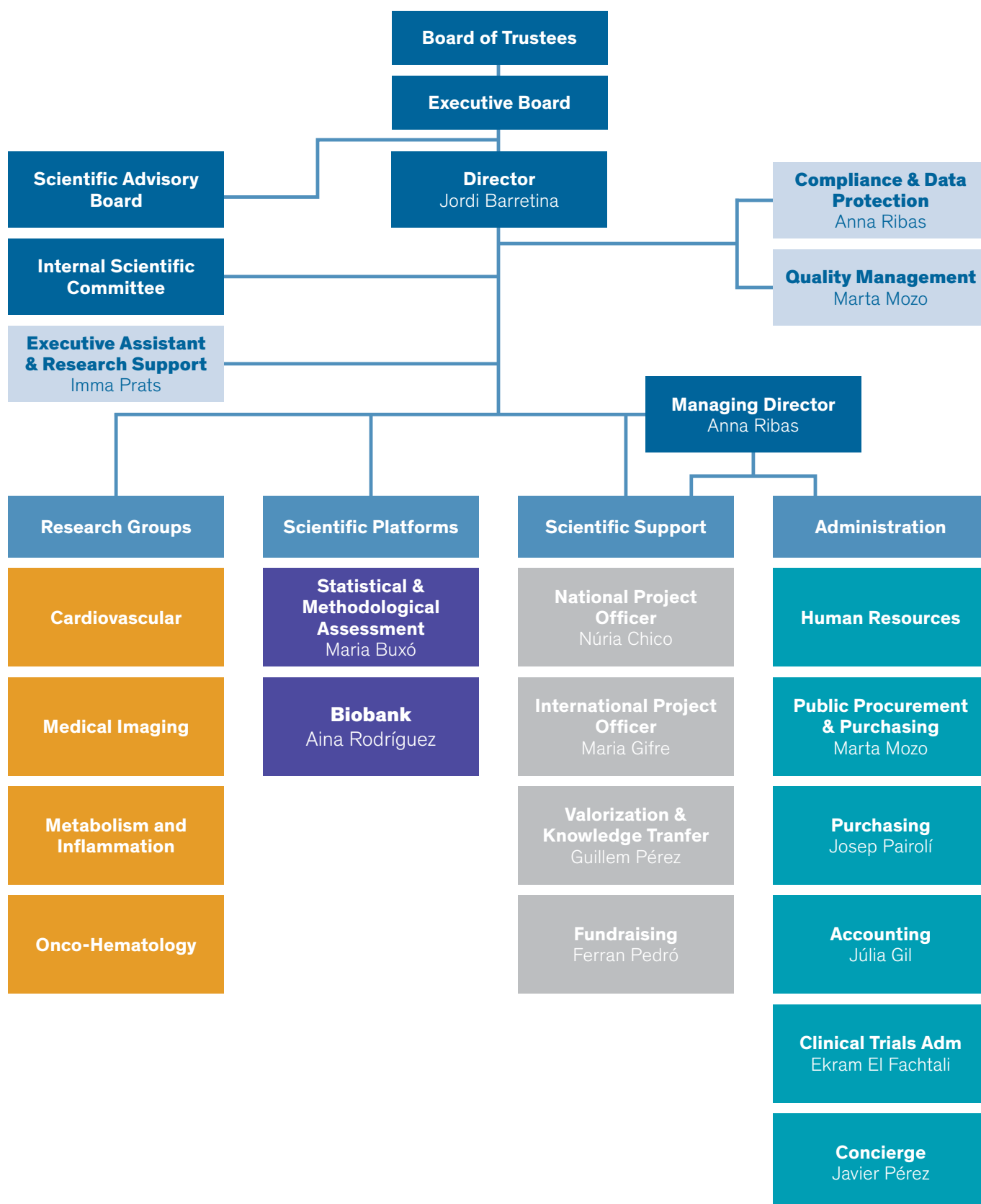
IDIBGI's mission is to support and develop quality research in biomedical and health sciences, promoting its translation into everyday practice with the objective of responding to the health needs of the community. We aspire to become a leading player in biomedical research by producing and transferring 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 - Doctor 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 the University of Girona (UdG) in those groups related to health and biomedical research.

The combination of investigators with different expertise and backgrounds enables the creation of powerful synergies and 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.



Organization



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Marisol Soengas

Molecular Pathology Programme, Spanish National Cancer
Research Centre, Madrid

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IDIBGI Director

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Josep Garre-Olmo

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 Solé

Nursing Research Coordinator, University of Girona

Montserrat Vendrell

Respiratory 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

Metabolism and Cancer 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

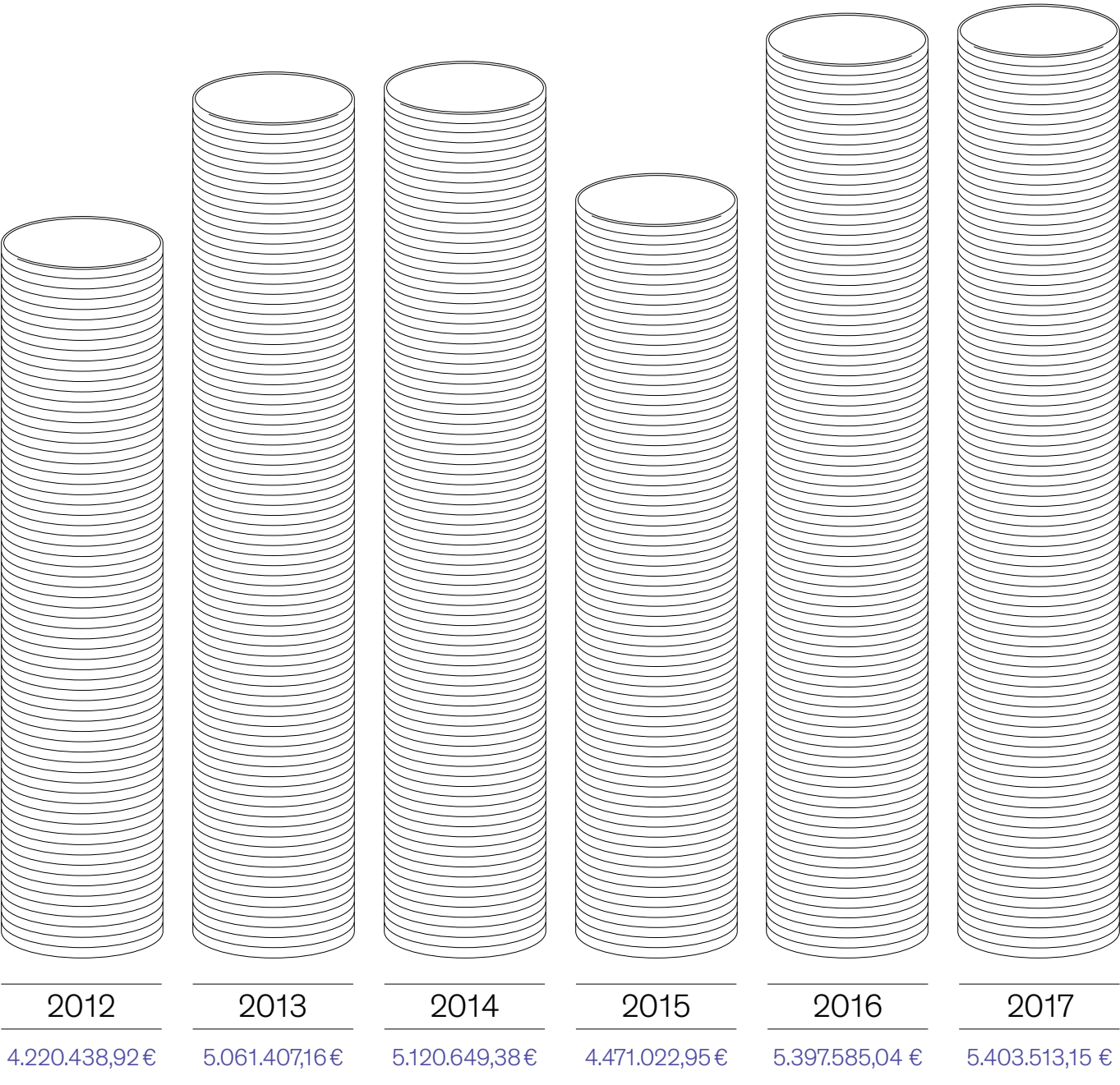
Scientific Coordinator

FACTS AND FIGURES



Management report

ANNUAL BUDGET



FUNDS SOURCES AND EXPENSES

2017 Funding Sources

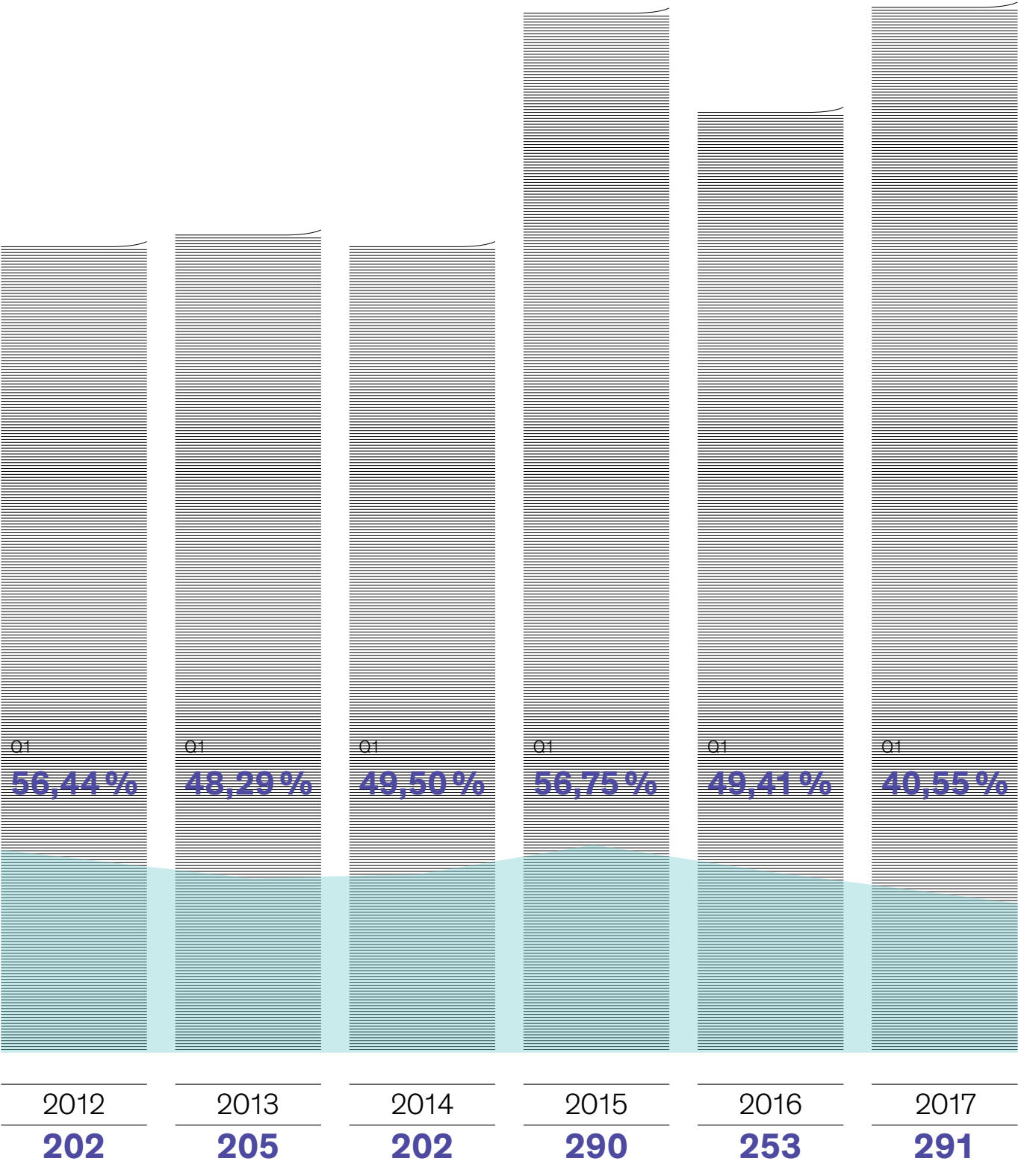
Clinical trials & private contracts: 1.456.603,77 €	
State administration competitive funds: 923.365,65 €	
Generalitat de Catalunya transfer: 450.000,00 €	
La Caixa Foundation: 450.000,00 €	
Other associations & foundations: 364.522,87 €	
Platforms: 361.896,44 €	
Philanthropy: 334.104,96 €	
Generalitat de Catalunya competitive funds: 307.265,92 €	
DipSalut: 287.608,26 €	
La Marató de TV3 Foundation: 277.802,44 €	
Other public funds: 110.406,76 €	
European funds (FP7-EU): 50.548,79 €	
Other private funds: 26.350,85 €	
Financial income: 3.036,44 €	
TOTAL: 5.403.513,15 €	

2017 Expenses

Human Resources: 2.105.835,32 €	
Medical consumables & external works: 1.213.985,15 €	
Collaborations: 217.181,86 €	
Publications & academic training: 110.123,95 €	
Travelling costs: 164.360,97 €	
Other Services: 206.564,43 €	
Transfers to other public institutions: 135.276,93 €	
Equipment: 273.464,14 €	
Running costs: 267.757,39 €	
Administration office: 415.073,98 €	
Research support office: 139.719,14 €	
TOTAL: 5.249.343,26 €	

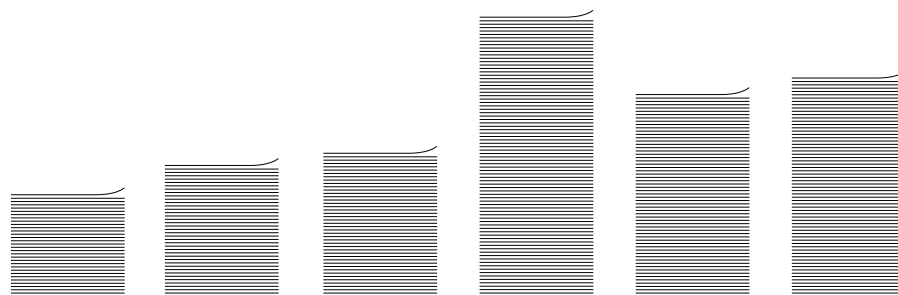
Scientific output

NUMBER OF ARTICLES



ARTICLES BY AREA

Cardiovascular



2012
17

2013
22

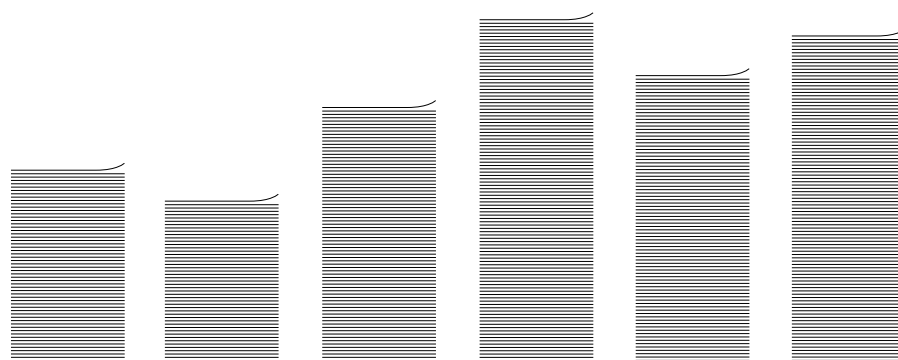
2014
24

2015
47

2016
34

2017
37

Metabolism



2012
32

2013
27

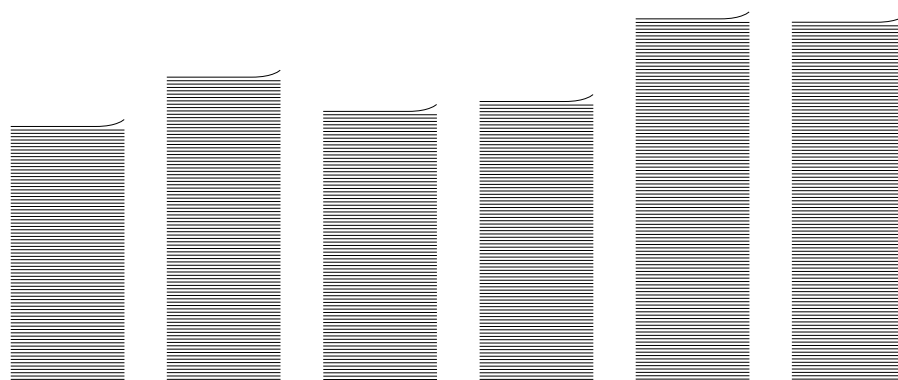
2014
43

2015
56

2016
48

2017
52

Neurosciences



2012
42

2013
50

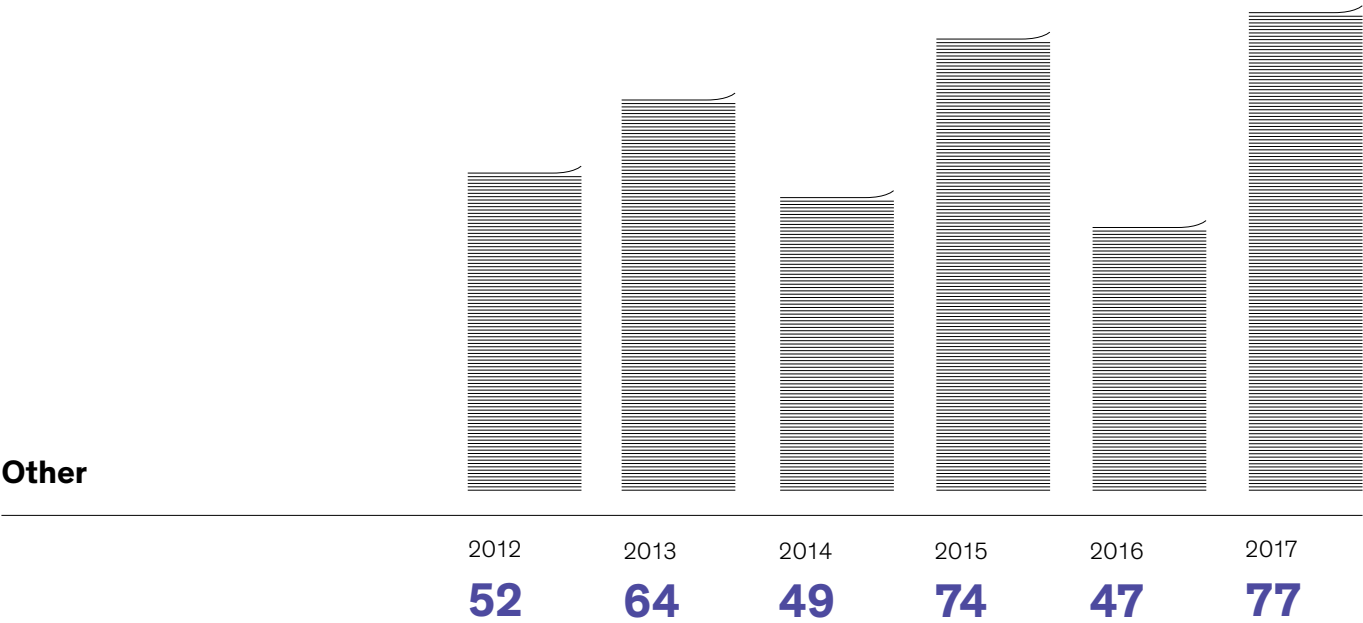
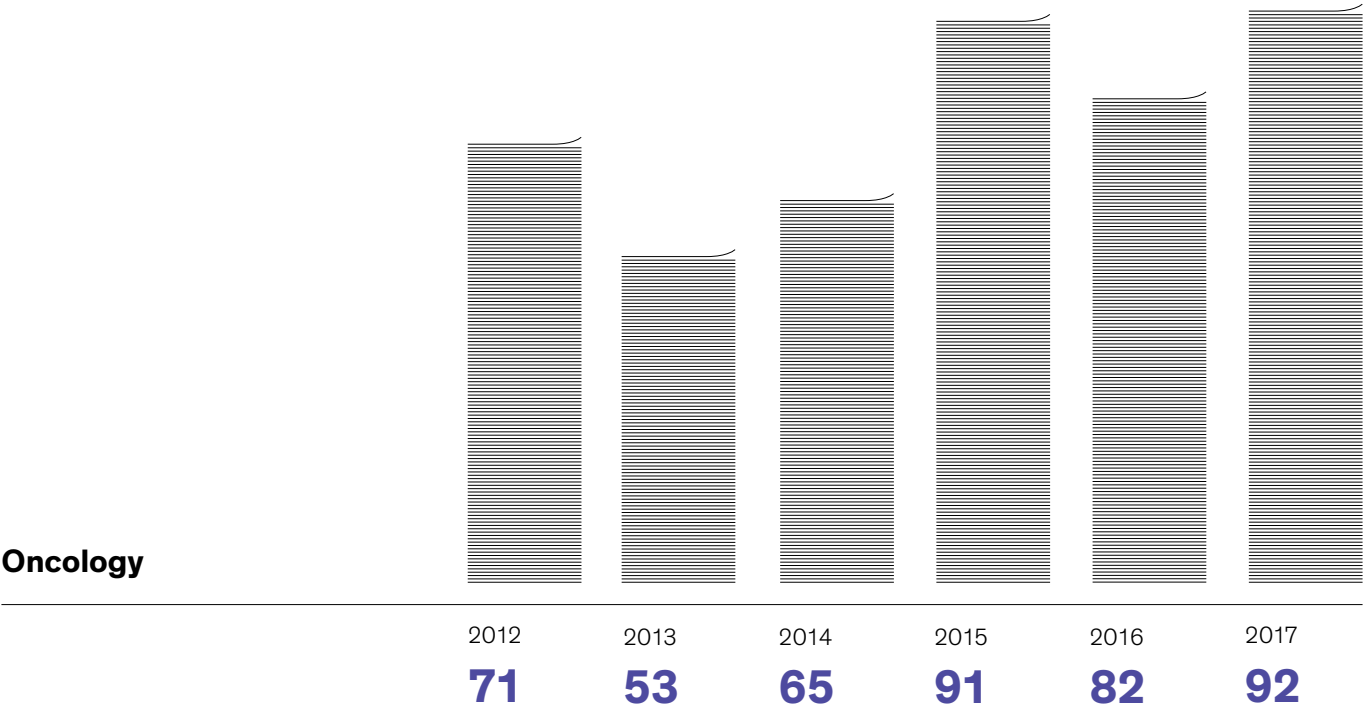
2014
45

2015
46

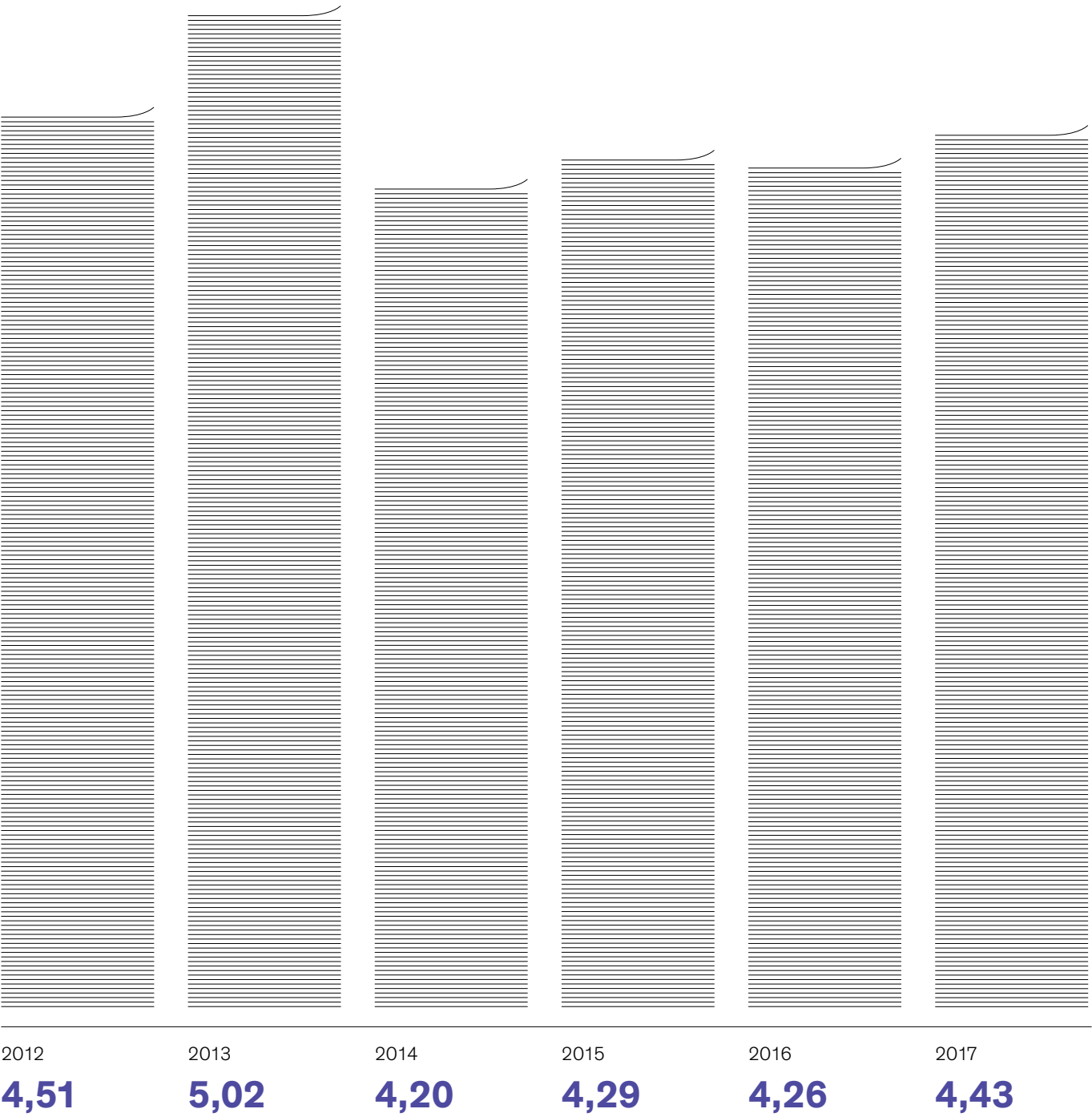
2016
62

2017
61

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 2017. The journals on Decile 1 are highlighted.

JOURNAL	Total Articles Published	IF
THE NEW ENGLAND JOURNAL OF MEDICINE	2	72,41
LANCET	1	47,83
LANCET ONCOLOGY	2	33,90
NATURE MEDICINE	1	29,89
NATURE GENETICS	1	27,96
LANCET NEUROLOGY	1	25,28
JOURNAL OF CLINICAL ONCOLOGY	1	24,01
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY	1	19,90
NATURE REVIEWS ENDOCRINOLOGY	1	18,32
NATURE REVIEWS CARDIOLOGY	1	14,30
INTENSIVE CARE MEDICINE	1	12,02
LEUKEMIA	2	11,70
EUROPEAN RESPIRATORY JOURNAL	2	10,57
ISME JOURNAL	1	9,66
DIABETES	1	8,68
CANCER TREATMENT REVIEWS	1	8,59
NEUROLOGY	1	8,32
GENETICS MEDICINE	1	8,23
ONCOGENE	1	7,52
LANCET HAEMATOLOGY	1	7,12
SPORTS MEDICINE	1	6,83
SEMINARS IN CELL & DEVELOPMENTAL BIOLOGY	1	6,61
INTERNATIONAL JOURNAL OF CANCER	1	6,51
JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY	1	6,43
INTERNATIONAL JOURNAL OF CARDIOLOGY	1	6,19
DIABETOLOGIA	1	6,08
CRITICAL REVIEWS IN FOOD SCIENCE AND NUTRITION	1	6,08
STROKE	4	6,03
EUROPEAN JOURNAL OF CANCER	3	6,03
NEUROIMAGE	1	5,84
JOURNAL OF CLINICAL LIPIDOLOGY	1	5,81
JOURNAL OF MOLECULAR AND CELLULAR CARDIOLOGY	2	5,68
AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY	1	5,57
FASEB JOURNAL	1	5,50
PSYCHOLOGICAL MEDICINE	1	5,49
INTERNATIONAL JOURNAL OF OBESITY	5	5,49
JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM	3	5,46
CIRCULATION. ARRHYTHMIA AND ELECTROPHYSIOLOGY	2	5,41
ONCOTARGET	4	5,17
INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY, BIOLOGY, PHYSICS	1	5,13
JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM	2	5,08

CLINICAL GUIDELINES

Polverino E, Goeminne PC, McDonnell MJ, Aliberti S, Marshall SE, Loebinger MR, Murris M, Cantón R, Torres A, Dimakou K, De Soyza A,, Hill AT, Haworth CS, **Vendrell M**, Ringshausen FC19, Subotic D20, Wilson R, Vilaró J, Stallberg B, Welte T, Rohde G, Blasi F, Elborn S, Almagro M, Timothy A, Ruddy T, Tonia T, Rigau D, Chalmers JD. European Respiratory Society guidelines for the management of adult bronchiectasis. *European Respiratory Journal*. 2017 Sep 9;50(3)

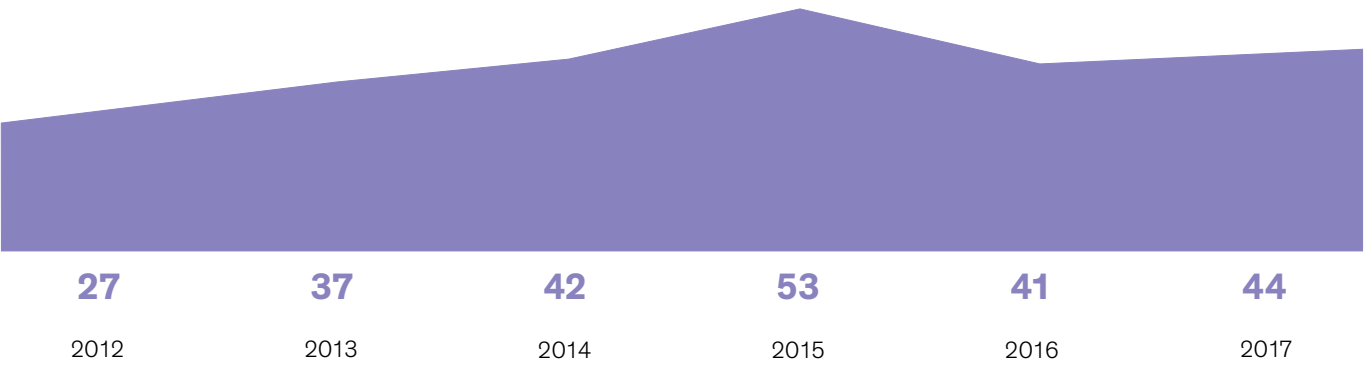
Turró-Garriga O, **Calvó-Perxas L**, Vilalta-Franch J, Hernández-Ferrándiz M, Flaqué M, Linares M, Cullell M, Gich J, Casas I, **Perkal H**, **Garre-Olmo J**; Registry of Dementia of Girona Study Group (ReDeGi Study Group). Adherence to Clinical Practice Guidelines during Dementia Work-Up in a Real-World Setting: A Study from the Registry of Dementias of Girona. *Journal of Alzheimer's Disease*. 2017;59(3):997-1007

Baena Díez, JM; Barcelo Colomer, E; Ciurana Misol, R; Franzi Sisó, A; García Cerdán, MR; Ríos Rodríguez, MA; **Ramos Blanes, R**; Solanas Saura, P; Vilaseca Canals, J. *Cholesterol i risc coronari*. Barcelona: Institut Català de la Salut, 2009. Guies de pràctica clínica i material docent, núm. 2017

CLINICAL TRIALS

Clinical Trials

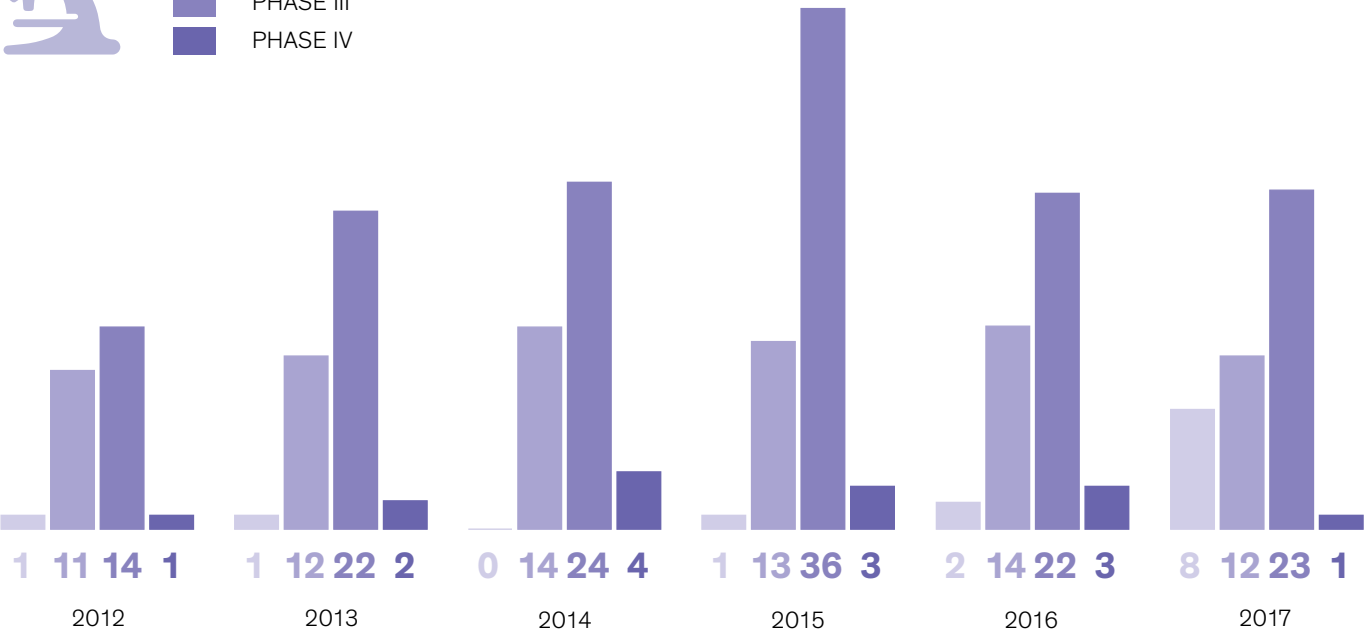
Clinical Trials initiated 2010-2017



Clinical Trials by Phase 2010-2017



- PHASE I
- PHASE II
- PHASE III
- PHASE IV





CARDIO- VASCULAR AREA

**CARDIOVASCULAR GENETICS
RESEARCH IN VASCULAR HEALTH**



Cardiovascular genetics

Recognised as a consolidated research group

Team involved in "Red de Enfermedades Cardiovasculares"

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



Group members

Group leader

Ramón Brugada

Senior researchers

Óscar Campuzano

Sara Pagans

Guillermo Pérez

Fabiana Scornik

Marcel Vergés

Postdoctoral researchers

Mireia Alcalde

Mónica Coll

Elisabet Selga

Jesús Matés

Marta Puigmulé

Predoctoral researchers

Eric Cortada

Anna Fernández

David Carreras

Rebecca Martínez

Mel·lina Pinsach

Alexandra Pérez

Bernat del Olmo

Marta Prats

Clinical researchers

Maria Emilce

Coloma Tiron

Xavier Albert Bertran

Daniel Bosch

Jaime Aboal

Sergi Moral

Merica Cardenas

Pablo Loma-Osorio

Maria Núñez

Daniel Rivero

Technicians

Ferran Picó

Support

Eloi Arias

Elisabet Canals (administrative)

Laia Noguer

Anna Iglesias (administrative)



Overview

The Cardiovascular Genetics laboratory was created in 2008 and is dedicated to the investigation of inherited cardiac diseases. Its research aims to improve understanding of the mechanisms associated with heart disease and sudden cardiac death to enhance diagnostic tools, and the prevention and treatment of the same. The investigation engages both basic and clinical research working in collaboration with hospitals and health centers, to better understand the biological basis of arrhythmogenic diseases in six major areas: genetics, epigenetics, histology, electrophysiology, membrane traffic and proteomics.

Research topics

1. Unexplained Sudden Cardiac Death in the young
2. Inherited arrhythmias and cardiomyopathies
3. Sudden Cardiac Death in epilepsy
4. Biophysical basis of ion channelopathies
5. Cellular and animal models of disease
6. Ion trafficking to the membrane
7. Epigenetics and genetic regulators of expression
8. Public access defibrillation
9. Sudden Cardiac Death in the general population. Etiology, risk factors, prognostic factors

Publications

Case reports:

van der Steld LP, Campuzano O, Pérez-Serra A, Moura de Barros Zamorano M, Sousa Matos S, Brugada R. Wolff-Parkinson-White Syndrome with Ventricular Hypertrophy in a Brazilian Family. *Am J Case Rep.* 2017 Jul 10; 18:766-776

Editorial:

Campuzano O, Sarquella-Brugada G, Brugada R. Molecular autopsy in SIDS cases. (2017) *J Paedi Care Inol* 1(2): 1-2

Pérez-Serra A, Brugada R, Campuzano O. Reply to Letter to editor: Genetic basis of dilated cardiomyopathy, *Int J Cardiol.* 2017 Feb 15;229:32

Originals:

Milman A, Andorin A, Gourraud JB, Sacher F, Mabo P, Kim SH, Maeda S, Takahashi Y, Kamakura T, Aiba T, Conte G, Juang JJM, Leshem E, Rahkovich M, Hochstadt A, Mizusawa Y, Postema PG, Arbelo E, Huang Z, Denjoy I, Giustetto C, Wijeyeratne YD, Napolitano C, Michowitz Y, Brugada R, Casado-Arroyo R, Champagne J, Calo L, Sarquella-Brugada G, Tfelt-Hansen J, Priori SG, Takagi M, Veltmann C, Delise P, Corrado D, Behr ER, Gaita F, Yan GX, Brugada J, Leenhardt A, Wilde AAM, Brugada P, Kusano KF, Hirao K, Nam GB, Probst V, Belhassen B. Age of First Arrhythmic Event in Brugada Syndrome: Data From the SABRUS (Survey on Arrhythmic Events in Brugada Syndrome) in 678 Patients. *Circ Arrhythm Electrophysiol.* 2017 Dec; 10 (12)

Coll M, Striano P, Ferrer-Costa C, Campuzano O, Matés J, Del Olmo B, Iglesias A, Pérez-Serra A, Mademont I, Picó F, Oliva A, Brugada R. Targeted next-generation sequencing provides novel clues for associated epilepsy and cardiac conduction disorder/SUDEP. *PLoS One.* 2017 Dec 19; 12 (12):e0189618

Coll M, Pérez-Serra A, Mates J, Del Olmo B, Puigmulé M, Fernandez-Falgueras A, Iglesias A, Picó F, Lopez L, Brugada R, Campuzano O. Incomplete Penetrance and Variable Expressivity: Hallmarks in Channelopathies Associated with Sudden Cardiac Death. *Biology (Basel).* 2017 Dec 26; 7(1)

Hernandez-Ojeda J, Arbelo E, Borrás R, Berne P, Tolosana JM, Gomez-Juanatey A, Berruezo A, Campuzano O, Sarquella-Brugada G, Mont L, Brugada R, Brugada J. Patients With Brugada Syndrome and Implanted Cardioverter-Defibrillators: Long-Term Follow-Up. *J Am Coll Cardiol.* 2017 Oct 17; 70(16):1991-2002

Campuzano O, Sanchez-Molero O, Fernandez A, Mademont-Soler I, Coll M, Perez-Serra A, Mates J, Del Olmo B, Pico F, Nogue-Navarro L, Sarquella-Brugada G, Iglesias A, Cesar S, Carro E, Borondo JC, Brugada J, Castellà J, Medallo J, Brugada R. Sudden Arrhythmic Death During Exercise: A Post-Mortem Genetic Analysis. *Sports Med.* 2017 Oct;47(10):2101-2115

Selga E, Sendfeld F, Martinez-Moreno R, Medine CN, Tura-Ceide O, Wilmut SI, Pérez GJ, Scornik FS, Brugada R, Mills NL. Sodium channel current loss of function in induced pluripotent stem cell-derived cardiomyocytes from a Brugada syndrome patient. *J Mol Cell Cardiol.* 2017 Oct 9;114:10-19

Onwuli DO, Yañez-Bisbe L, Pinsach-Abuin ML, Tarradas A, Brugada R, Greenman J, Pagans S, Beltran-Alvarez P. Do sodium channel proteolytic fragments regulate sodium channel expression? *Channels (Austin).* 2017 Sep 3;11(5):476-481

Gastellurrutia P, Gálvez-Montón C, Cámara ML, Bustamante-Munguira J, García-Pavia P, Avanzas P, Alberto San Román J, Pascual-Figal D, Teresa E, Crespo-Leiro MG, Manito N, Núñez J, Fernández-Avilés F, Caballero Á, Teis A, Lupón J, Brugada R, Martín C, Silva J, Revilla-Orodea A, Cánovas SJ, Melero JM, Cuenca-Castillo JJ, Gonzalez-Pinto A, Bayes-Genis A. Rationale and design of a multicentre, prospective, randomised, controlled clinical trial to evaluate the efficacy of the adipose graft transposition procedure in patients with a myocardial scar: the AGTP II trial. *BMJ Open.* 2017 Aug 4;7(8):e017187

Mademont-Soler I, Mates J, Yotti R, Espinosa MA, Pérez-Serra A, Fernandez-Avila AI, Coll M, Méndez I, Iglesias A, Del Olmo B, Riuró H, Cuenca S, Allegue C, Campuzano O, Picó F, Ferrer-Costa C, Álvarez P, Castillo S, Garcia-Pavia P, Gonzalez-Lopez E, Padron-Barthe L, Díaz de Bustamante A, Darnaude MT, González-Hevia JI, Brugada J, Fernandez-Aviles F, Brugada R. Additional value of screening for minor genes and copy number variants in hypertrophic cardiomyopathy. *PLoS One.* 2017 Aug 3;12(8):e0181465

Dulsat G, Palomeras S, Cortada E, Riuró H, Brugada R, Vergés M. Trafficking and localisation to the plasma membrane of Nav 1.5 promoted by the $\beta 2$ subunit is defective due to a $\beta 2$ mutation associated with Brugada syndrome. *Biol Cell.* 2017 Jul;109(7):273-291

D'Ovidio C, Carnevale A, Grassi VM, Rosato E, Del Olmo B, Coll M, Campuzano O, Iglesias A, Brugada R, Oliva A. Sudden death due to catecholaminergic polymorphic ventricular tachycardia following negative stress-test outcome: genetics and clinical implications. *Forensic Sci Med Pathol.* 2017 Jun;13(2):217-225

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Morales E, Ramos R, Brugada J, Onaga H, Morales A, Olivet J, Brugada R. The Girona Territori Cardioprotegit Project: Performance Evaluation of Public Defibrillators. *Rev Esp Cardiol (Engl Ed).* 2017 May 15

Pappone C, Brugada J, Vicedomini G, Ciconte G, Manguso F, Saviano M, Vitale R, Cuko A, Giannelli L, Calovic Z, Conti M, Pozzi P, Natalizia A, Crisà S, Borrelli V, Brugada R, Sarquella-Brugada G, Guazzi M, Frigiola A, Menicanti L, Santinelli V. Electrical Substrate Elimination in 135 Consecutive Patients with Brugada Syndrome. *Circ Arrhythm Electrophysiol.* 2017 May

Aboal J, Núñez M, Bosch D, Tirón C, Brugada R, Loma-Orsorio P. Primary angioplasty versus fibrinolysis in patients at a distance from a hospital with a catheterization laboratory. *Emergencias.* 2017 Abr;29(2):99-104

Alejandra Restrepo-Cordoba M, Campuzano O, Ripoll-Vera T, Cobo-Marcos M, Mademont-Soler I, Gámez JM, Dominguez F, Gonzalez-Lopez E, Padron-Barthe L, Lara-Pezzi E, Alonso-Pulpon L, Brugada R, Garcia-Pavia P. Usefulness of Genetic Testing in Hypertrophic Cardiomyopathy: an Analysis Using Real-World Data. *J Cardiovasc Transl Res.* 2017 Feb;10(1):35-46

Campuzano O, Sanchez-Molero O, Mademont-Soler I, Coll M, Allegue C, Ferrer-Costa C, Mates J, Perez-Serra A, Del Olmo B, Iglesias A, Sarquella-Brugada G, Brugada J, Borondo JC, Castella J, Medallo J, Brugada R. Genetic analysis in post-mortem samples with micro-ischemic alterations. *Forensic Sci Int.* 2017 Feb;271:120-125

Bosch C, Campuzano O, Sarquella-Brugada G, Cesar S, Perez-Serra A, Coll M, Mademont I, Mates J, Del Olmo B, Iglesias A, Brugada J, Petersen V, Brugada R. A novel variant in RyR2 causes familial catecholaminergic polymorphic ventricular tachycardia. *Forensic Sci Int.* 2017 Jan;270:173-177

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Pereira R, Campuzano O, Sarquella-Brugada G, Cesar S, Iglesias A, Brugada J, Cruz Filho FES, Brugada R. Short QT syndrome in

pediatrics. Clin Res Cardiol. 2017 Jun;106(6):393-400

Pérez-Serra A, Campuzano O, Brugada R. Update about atrial fibrillation genetics. Curr Opin Cardiol. 2017 Feb 4

Cardiac Channelopathies and Sudden Death: Recent Clinical and Genetic Advances. Cardiac Channelopathies and Sudden Death: Recent Clinical and Genetic Advances. Biology (Basel). 2017 Jan 29;6(1)

de Gonzalo-Calvo D, Quezada M, Campuzano O, Perez-Serra A, Broncano J, Ayala R, Ramos M, Llorente-Cortes V, Blasco-Turrión S, Morales FJ, Gonzalez P, Brugada R, Mangas A, Toro R. Familial dilated cardiomyopathy: A multidisciplinary entity, from basic screening to novel circulating biomarkers. Int J Cardiol. 2017 Feb 1;228:870-880

Oliva A, Grassi VM, Campuzano O, Brion M, Arena V, Partemi S, Coll M, Pascali VL, Brugada J, Carracedo A, Brugada R. Medico-legal perspectives on sudden cardiac death in young athletes. Int J Legal Med. 2017 Mar;131(2):393-409

Moncayo-Arlandi J, Brugada R. Unmasking the molecular link between arrhythmogenic cardiomyopathy and Brugada syndrome. Nat Rev Cardiol. 2017 Dec;14(12):744-756.

Books chapters:

Georgia Sarquella-Brugada, Sergi Cesar, Anna Fernandez-Falgueras, Maria Dolores Zambrano, Anna Iglesias, Josep Brugada, Ramon Brugada and Oscar Campuzano. Chapter: Negative autopsy in infant and juvenile population: role of cardiac arrhythmias. Book: Post Mortem Examination and Autopsy - From Death Scene to Laboratory Analysis. Book editor: Kamil Hakan Dogan, Selcuk University Faculty of Medicine, Turkey, ISBN: 978-953-51-5751-9. 2017

Oscar Campuzano, Georgia Sarquella-Brugada, Sergi Cesar, Esther Carro, Anna Fernandez-Falgueras, Josep Brugada, Ramon Brugada. Capítulo: Update on genetic basis of Long QT Syndrome. Libro: Advances in Human Genetic Diseases. Avid Science Publications, 2017
Campuzano O, Brugada R. Proyecto MOSCAT: Análisis genético post-mortem y traslación clínica. Revista Genética Médica. Abril, 2017

Current grants

Project: Síndromes hereditarios en la muerte súbita inexplicada. Estudio genético

Funding agency: Instituto de Salud Carlos III (PI14/01773)

Duration: 2014-2017

Lead Researcher: Ramon Brugada / Óscar Campuzano

Project: Genetic and molecular basis of arrhythmogenic right ventricular cardiomyopathy: translation into clinical care

Funding agency: La Marató de TV3

Duration: 2015-2018

Lead Researcher: Ramon Brugada

Project: Suport a les activitats del grup de recerca

Funding agency: AGAUR

Duration: 2015-2018

Lead Researcher: Ramon Brugada

Project: Early detection and prevention of neonatal sudden death using ECG and massive ultrasequencing genetic analysis

Funding agency: La Marató de TV3

Duration: 2015-2018

Lead Researcher: Óscar Campuzano

Project: Pedi-SUDS. Translational Genetic Medicine in Paediatric Sudden Death

Funding agency: Fundación Daniel Bravo

Duration: 2015-2018

Lead Researcher: Ramon Brugada

Project: Role of nonexonic regions in Brugada Syndrome (SAF2015-70823-R)

Funding agency: Ministerio de Economía y Competitividad, Retos de la Sociedad

Duration: 2016-2018

Coordinator: Universitat de Girona

Lead Researcher: Sara Pagans/ Miquel Duran

Project: Mecanismes epigenètics de regulació de l'expressió del canal de sodi cardíac (MPCUdG2016/039)

Funding agency: Ajuts per a la millora de la productivitat científica dels grups de recerca de la Universitat de Girona 2016-2018

Duration: 2016-2018

Coordinator: Universitat de Girona

Lead Researcher: Guillermo J. Pérez, Sara Pagans

Project: Pathophysiologic and therapeutic in vitro assessment of patient-specific iPS cell-derived cardiomyocytes.

Funding agency: Pla 350130113 Programa de Doctorat en Biologia Molecular, Biomedicina i Salut

Duration: 2016-2018

Lead Researcher: Fabiana Scornik

PhD: Rebecca Martínez Moreno

Project: Regulació del tràfic del canal de sodi cardíac dependent de voltatge (MPCUdG2016/138)

Funding agency: Ajuts per a la millora de la productivitat científica dels grups de recerca de la Universitat de Girona 2016-2018

Duration: 2016-2018

Coordinator: Universitat de Girona

Lead Researcher: Marcel Vergés

Project: Muerte súbita inexplicada en población joven: estudio genético (PI17/01690)

Funding agency: Instituto de Salud Carlos III

Duration: 2017-2020

Lead Researcher: Ramon Brugada / Oscar Campuzano

Project: Pathophysiologic and therapeutic in vitro assessment of patient-specific iPS cell-derived cardiomyocytes (Expedient 20153910)

Funding agency: Universitat de Girona

Duration: 2016-2019

Coordinator: Universitat de Girona

Lead Researcher: Fabiana Scornik

Patents

Number of application: 201431546

Title: Aparato para el entrenamiento del masaje cardiaco

Holder: IDIBGI/UdG

Inventor: Ramon Brugada

Number of application: US 8,580,492 B2

Title: Screening method for the identification of inhibitors of HIV Tat methylation by the lysine methyltransferase Set7/9

Holder: The J. David Gladstone Institutes

Inventor: Melanie Ott, **Sara Pagans**

Number of application: 8,034,350

Title: Methylated Tat polypeptides and methods to use thereof

Holder: The J. David Gladstone Institutes

Inventor: Melanie Ott, **Sara Pagans**

Theses

Title: Els factors GATA4 i GATA5 en la regulació transcripcional del gen que codifica pel canal de sodi cardíac (SCN5A)

Doctoral student: Anna Tarradas Pou

Thesi director: Sara Pagans/ Ramon Brugada

University: University of Girona

Faculty/school: School of Medicine

Date: 14/03/2017

Title: Muerte súbita natural inexplicada: valor de la investigación genética post mortem

Doctoral student: Olallo-Efrén Sánchez-Molero Núñez

Thesi director: Óscar Campuzano / Ramon Brugada

University: University of Girona

Faculty/school: School of Medicine

Date: 15/12/2017

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

Group members

Group leader

Rafael Ramos

Established researchers

Maria del Mar Gacia

Ruth Martí

Post-doctoral researchers

Anna Ponjoan

Lia Alves

Miquel Quesada

Pre-doctoral researchers

Dídac Parramon

Eli Carlemagno León

Lourdes Camós

Àlex Llobera

Marc Elosua

Medical researchers

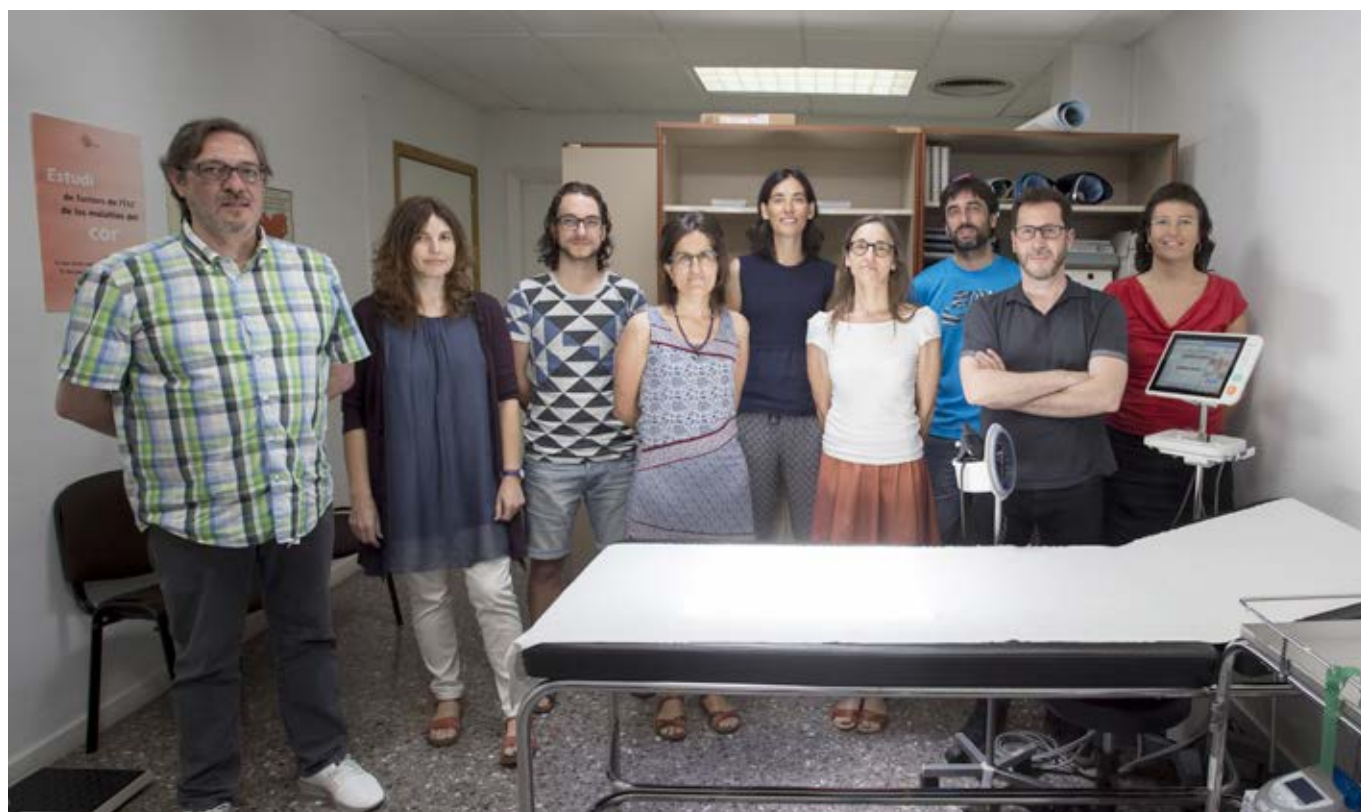
Pascual Solans

Neus Morell

Technicians

Marc Comas

Jordi Blanch



Overview

The Vascular Health Research Group (ISV) includes professionals from multiple disciplines, with expertise in epidemiology and methodology working along with clinical researchers. This association ensures a translational perspective when interpreting and discussing projects, accounting for the requirements and contingencies of clinical practice. The group integrates family physicians, an epidemiologist, mathematicians, a specialist in laboratory medicine, nurses, and biologists. Such diversity has been key to the quality of the results obtained and will be essential to carry on with these high standards in the future. The areas of expertise of the group include Primary Care, prevention, epidemiology, lipidology, cardiology, statistics, and analysis of big databases.

Research topics

Our group is working on three main research lines:

10. Epidemiology of vascular diseases, -especially asymptomatic- and their risk factors
11. Mathematical modelling of risk prediction by designing decision-making support tools
12. Evaluation of preventive interventions, and study of the effectiveness of drugs used in primary prevention, using primary care clinical digital records (SIDIAP platform).

Publications

Originals:

Loma-Orsorio P, Nuñez M, Aboal J, Bosch D, Batlle P, Ruiz de Morales E, Ramos R, Brugada J, Onaga H, Morales A, Olivet J, Brugada R. The Girona Territori Cardioprotegit Project: Performance Evaluation of Public Defibrillators. *Rev Esp Cardiol (Engl Ed)*. 2017 May 15

García-Gil M, Comas-Cufí M, Blanch J, Martí R, Ponjoan A, Alves-Cabrato L, Petersen I, Marrugat J, Elosua R, Grau M, Ramos R. Effectiveness of statins as primary prevention in people with different cardiovascular risk: A population-based cohort study. *Clin Pharmacol Ther*. 2017 Dec 1

Vázquez-Oliva G, Zamora A, Ramos R, Martí R, Subirana I, Grau M, R Degano I, Marrugat J, Elosua R. Acute Myocardial Infarction Population Incidence and Mortality Rates, and 28-day Case-fatality in Older Adults. The REGICOR Study. *Rev Esp Cardiol (Engl Ed)*. 2017 Nov 21

Barroso M, Goday A, Ramos R, Marín-Ibañez A, Guembe MJ, Rigo F, Tormo-Díaz MJ, Moreno-Iribas C, Cabré JJ, Segura A, Baena-Díez JM, de la Cámara AG, Lapetra J, Quesada M, Medrano MJ, Berjón J, Frontera G, Gavrilá D, Barricarte A, Basora J, García JM, García-Lareo M, Lora-Pablos D, Mayoral E, Grau M, Marrugat J; FRESCO Investigators. Interaction between cardiovascular risk factors and body mass index and 10-year incidence of cardiovascular disease, cancer death, and overall mortality. *Prev Med*. 2017 Nov 16

Salvador-González B, Gil-Terrón N, Cerain-Herrero MJ, Subirana I, Güell-Miró R, Rodríguez-Latre LM, Cunillera-Puértolas O, Elosua R, Grau M, Vila J, Pascual-Benito L, Mestre-Ferrer J, Ramos R, Baena-Díez JM, Soler-Vila M, Alonso-Bes E, Ruipérez-Guijarro L, Álvarez-Funes V, Freixes-Villaró E, Rodríguez-Pascual M, Martínez-Castelao A. Estimated Glomerular Filtration Rate, Cardiovascular Events and Mortality Across Age Groups Among Individuals Older Than 60 Years in Southern Europe. *Rev Esp Cardiol (Engl Ed)*. 2017 Oct 28

Elosua-Bayés M, Martí-Lluch R, García-Gil MDM, Camós L, Comas-Cufí M, Blanch J, Ponjoan A, Alves-Cabrato L, Elosua R, Grau M, Marrugat J, Ramos R. Association of Classic Cardiovascular Risk Factors and Lifestyles with the Cardio-ankle Vascular Index in a General Mediterranean Population. *Rev Esp Cardiol (Engl Ed)*. 2017 Oct 25

Alves-Cabrato L, García-Gil M, Comas-Cufí M, Ponjoan A, Martí-Lluch R, Parramon D, Blanch J, Elosua-Bayes M, Ramos R. Statins and new-onset atrial fibrillation in a cohort of patients

with hypertension. Analysis of electronic health records, 2006-2015. PLoS One. 2017 Oct 26;12(10)

Gomez-Sanchez L, Garcia-Ortiz L, Patino-Alonso MC, Recio-Rodriguez JI, Rigo F, Martí R, Agudo-Conde C, Rodriguez-Sanchez E, Maderuelo-Fernandez JA, Ramos R, Gomez-Marcos MA; MARK Group. Adiposity measures and arterial stiffness in primary care: the MARK prospective observational study. BMJ Open. 2017 Sep 27;7(9):e016422

Dégano IR, Marrugat J, Grau M, Salvador-González B, Ramos R, Zamora A, Martí R, Elosua R. The association between education and cardiovascular disease incidence is mediated by hypertension, diabetes, and body mass index. Sci Rep. 2017 Sep 28;7(1):12370

Zamora A, Masana L, Comas-Cufí M, Vila À, Plana N, García-Gil M, Alves-Cabrato L, Marrugat J, Roman I, Ramos R; XULA and ISV-Girona groups. Familial hypercholesterolemia in a European Mediterranean population-Prevalence and clinical data from 2.5 million primary care patients. Clin Lipidol. 2017 Jul - Aug;11(4):1013-1022

Martí-Lluch R, Garcia-Gil MDM, Camós L, Comas-Cufí M, Elosua-Bayés M, Blanch J, Ponjoan A, Alves-Cabrato L, Elosua R, Grau M, Marrugat J, Ramos R. Differences in cardio-ankle vascular index in a general Mediterranean population depending on the presence or absence of metabolic cardiovascular risk factors. Atherosclerosis. 2017 Sep;264:29-35

Garcia-Gil M, Reyes C, Ramos R, Sanchez-Santos MT, Prieto-Alhambra D, Spector TD, Hart DJ, Arden NK. Serum Lipid Levels and Risk Of Hand Osteoarthritis: The Chingford Prospective Cohort Study. Sci Rep. 2017 Jun 9;7(1):3147

Baena-Díez JM, Subirana I, Ramos R, Gómez de la Cámara A, Elosua R, Vila J, Marín-Ibáñez A, Guembe MJ, Rigo F, Tormo-Díaz MJ, Moreno-Iribas C, Cabré JJ, Segura A, Lapetra J, Quesada M, Medrano MJ, González-Diego P, Frontera G, Gavrila D, Ardanaz E, Basora J, García JM, García-Lareo M, Gutiérrez-Fuentes JA, Mayoral E, Sala J, R Degano I, Francès A, Castell C, Grau M, Marrugat J. Validity Assessment of Low-risk SCORE Function and SCORE Function Calibrated to the Spanish Population in the FRESCO Cohorts. Rev Esp Cardiol (Engl Ed). 2017 May 26

Gomez-Sanchez L, Garcia-Ortiz L, Patino-Alonso MC, Recio-Rodriguez JI, Feuerbach N, Martí R, Agudo-Conde C, Rodriguez-Sanchez E, Maderuelo-Fernandez JA, Ramos R, Gomez-Marcos MA; MARK Group. Glycemic markers and relation with arterial stiffness in Caucasian subjects of the MARK study. PLoS One. 2017 Apr 17;12(4):e0175982

Ponjoan A, Blanch J, Alves-Cabrato L, Martí-Lluch R, Comas-Cufí M, Parramon D, Del Mar Garcia-Gil M, Ramos R, Petersen I. Effects of extreme temperatures on cardiovascular emergency hospitalizations in a Mediterranean region: a self-controlled case series study. Environ Health. 2017 Apr 4;16(1):32

Massó-van Roessel A, Escobar-Robledo LA, R Dégano I, Grau M, Sala J, Ramos R, Marrugat J, Bayés de Luna A, Elosua R. Analysis of the Association Between Electrocardiographic P-wave Characteristics and Atrial Fibrillation in the REGICOR Study. Rev Esp Cardiol (Engl Ed). 2017 Oct;70(10):841-847

NCD Risk Factor Collaboration (NCD-RisC) [Ramos-Blanes R]. Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128.9 million children, adolescents, and adults. Lancet. 2017 Dec 16;390(10113):2627-2642

Recio-Rodriguez JI, Garcia-Yu IA, Alonso-Dominguez R, Maderuelo-Fernandez JA, Patino-Alonso MC, Agudo-Conde C, Sanchez-Aguadero N, Ramos R, Martí R, Rodriguez-Sanchez E, Gómez-Marcos MA, Garcia-Ortiz L. Diet quality and carotid atherosclerosis in intermediate cardiovascular risk individuals. Nutrition journal 2017 Jul 3;16(1):40

Velescu A, Clara A, Martí R, Ramos R, Perez-Fernandez S, Marcos L, Grau M, Degano IR, Marrugat J, Elosua R. Abnormally High Ankle-Brachial Index Is Associated with All-cause and Cardiovascular Mortality: The REGICOR Study. Eur J Vasc Endovasc Surg. 2017 Sep;54(3):370-377

Current grants

Project: Association between sudden changes in ambient temperature and cardiovascular hospitalisations or mortality: a population study from Catalonia (SURIA Study)

Funding agency: IDIAP Jordi Gol

Duration: 2015-2017

Lead Researcher: Anna Ponjoan

Project: EIRA. Ensayo híbrido de evaluación de una intervención compleja multiriesgo para promover conductas saludables en personas de 45-75 años atendidas en Atención Primaria: estudio EIRA3

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: Carlos Cerezo Goyeneche

Project: Seguiment de la cohort poblacional de l'estudi REGICOR: tendències en la incidència de malaltia cardiovascular, en la prevalença de factors de risc, identificació de nous mecanismes i biomarcadors predictius, i avaluació d'estratègies de prevenció

Funding agency: Pla estratègic de recerca i innovació en salut (PERIS). Departament de Salut. Generalitat de Catalunya

Duration: 2017-2019

Coordinator: Jaume Marrugat

Lead Researcher: Rafel Ramos Blanes

Project: EIRA. Ensayo híbrido de evaluación de una intervención compleja multiriesgo para promover conductas saludables en personas de 45-75 años atendidas en Atención Primaria: estudio EIRA3

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: Carlos Cerezo Goyeneche

Project: Real world Outcomes across the AD spectrum to better care: Multi-modal data Access Platform

Funding agency: European project. Innovative Medicines Initiative (IMI)

Duration: 2016-2018

Lead Researcher: Rafel Ramos Blanes

Project: 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)

Funding agency: Instituto de Salud Carlos III

Duration: 2013-2016

Lead Researcher: Rafel Ramos Blanes

Project: PROTEO. Predicción del Riesgo vascular en población de edad avanzada del Mediterráneo

Funding agency: Instituto de Salud Carlos III

Duration: 2018-2020

Lead Researcher: Rafel Ramos Blanes

Project: COLGE. Epidemiologia de la Hipercolesterolèmia Familiar; predicció de risc, efectivitat i seguretat del tractament hipolipemiant

Funding agency: Departament de Salut

Duration: 2017-2019

Lead Researcher: Rafel Ramos Blanes

Project: ELECTRA. Efectividad de los Objetivos Terapéuticos de la Lipoproteína de Baja Densidad (cLDL) en la Reducción de Eventos Aterotrombóticos

Funding agency: Instituto de Salud Carlos III

Duration: 2017-2019

Lead Researcher: Garcia Gil, M^a del Mar

Theses

Arteriopatia perifèrica asimptomàtica: prevalença, factors de risc associats, utilitat del cribratge poblacional i efectivitat de les estatines en la prevenció de malalties vasculars i mortalitat en aquesta població

Doctoral student: Miquel Quesada Sabaté

Thesi director: Rafel Ramos

University: University of Girona

Faculty/school: School of Medicine

Date: 17/02/2017

METABOLISM AND INFLAM- MATION AREA

MICROBIOLOGY AND INFECTION OF CRITICALLY ILL PATIENTS
DIGESTIVE DISEASES AND MICROBIOTA RESEARCH GROUP
NUTRITION, EUMETABOLISM AND HEALTH
PEDIATRIC ENDOCRINOLOGY
RESPIRATORY GROUP
MATERNAL AND FETAL METABOLIC RESEARCH



Microbiology and infection of critically ill patients

Group members

Group leader

Josep Maria Sirvent

Medical researchers

Patricia Ortiz

Cristina Murcia

Juliana González

Silvia Cuenca

Carolina Lorencio

Anna Baró

Claudia Vera

Abdó Taché

Montse Motjé

Adriana Sánchez

Overview

Created more than 15 years ago, this group included all projects on infectious disease of the University Hospital of Girona Doctor Josep Trueta (HUGDJT) as well as a group from the University of Girona working in conjunction with them. Further, Dr. Sirvent participates in the CIBER respiratory group.

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).

Research topics

- 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

Publications

Editorials:

Murcia-Gubianas C, Ching CV, Sirvent JM. Air embolisms in pulmonary artery, right atrium and portal vein: an unusual case of decompression sickness. *Intensive Care Med.* 2017 Mar;43(3):450-451

Original:

Sirvent JM. Antibiotic prophylaxis against ventilator-associated pneumonia in patients with coma: Where are we now? *Med Intensiva.* 2017 May;41(4):248-251

Yébenes JC, Ruiz-Rodríguez JC, Ferrer R, Clèries M, Bosch A, Lorenzo C, Rodríguez A, Nuvials X, Martín-Loeches I, Artigas A; SOCMIC (Catalonian Critical Care Society) Sepsis Working Group. Epidemiology of sepsis in Catalonia: analysis of incidence and outcomes in a European setting. *Ann Intensive Care.* 2017 Dec;7(1):19.

Digestive diseases and microbiota research group

Group members

Group leaders

Xavier Aldeguer and Jesús García-Gil

Post-doctoral researchers

Anna Bahí Salavedra
Margarita Martínez Medina
Marc Llíros Dupré
Mireia López Siles

Pre-doctoral researchers

David Busquets Casals
Josep Oriol Miquel
Sílvia Virolés Torrent
Marta Malagón Rodríguez
Mireia Vila Currius
Carmen López Núñez
Carla Camprubí Font

Medical researchers

Esther Fort Martorell
Hugo Uchima
Carlos Huertas Nadal
Isabel Serra Matamala
Virginia Piñol Sánchez
Leyanira Torrealba Medina



Overview

This group studies the human gut microbiome in all diseases affecting the digestive tract (e.g., inflammatory bowel disease, colorectal cancer, chronic pancreatitis, pancreatic cancer, hepatic steatosis, hepatocarcinoma, barret disease, among others) with the intention to define a set of microbial biomarkers as prognosis tools for such disease collection, but also paying attention to their diagnosis and monitoring to support clinicians.

Research topics

The main strategic research lines of our group are based on the following pillars:

1. Dysbiosis indicators in inflammatory bowel diseases (IBD)
Over the last years, the group is performing a wide-range study aimed to correlate microbiological indexes (based on logarithmic ratios of absolute quantifications) and clinical determinants for inflammatory bowel disorders (CD, UC, and CRC). We propose such ratios for risk determination, pre-screening processes and diagnostic of bowel disorders. Besides IBD, the utility of logarithmic ratios on Inflammatory Bowel Syndrome is also under study. Moreover, a step forward in the healing mucosa concept is underlining our scientific proxy.

In close collaboration with the clinical microbiology team at Universitat de Girona lead by PhD Margarita Martínez-Medina, we are digging into the genetic elements defining the "adherent-invasive" pathovar within *Escherichia coli* and its role on Crohn's disease (CD). Microbiologically based molecular tools for detection of AIEC on CD patients are under process.

2. Hepatopancreatic line
Recently the group has opened a new research line studying the microbial community in fecal samples of patients suffering of hepatic inflammatory diseases, basically chronic pancreatitis and its evolution towards cancer or steatotic liver ending in hepatocellular carcinoma.

3. Dysbiosis and rheumatic diseases
A new research line aimed to connect the inflammatory process of rheumatic disorders with the gut microbiome has been recently activated. As for the IBD, the presence of inflammatory signals might be correlated with the gut microbiome. In this sense the use and application of logarithmic ratios of absolute microbial quantifications to establish threshold values for rheumatic disorders is proposed.

4. Healing dysbiosis with traditional bread
The group has been awarded with a new research proposal to investigate the effect of traditional bread produced from

wholemeal with long fermentation and wild starters on patients suffering from IBD (ulcerative colitis) and obesity syndrome. This new research line establishes collaboration with the private sector (Elias Boulanger®) and IMIM in Barcelona (public partner).

Current grants

Project: Desarrollo de un sistema no invasivo para el cribado de cáncer colorrectal basado en marcadores bacterianos en heces (RTC-2016-5017-1)

Funding agency: Ministerio de Economía y Competitividad

Duration: 2016-2018

Lead Researcher: Xavier Aldeguer

Patents

Number of application: P201830112

Title: New molecular markers for the adherent-invasive *Escherichia coli* (aiec) pathotype, related methods and kits

Holder: Universitat de Girona

Inventor: Margarita Martínez-Medina, Mireia López-Siles and Carla Camprubí-Font

Number of application: PXEP1522/2013

Title: Method for diagnosing colorectal cancer from a human feces sample by quantitative PCR, primers and kit

Holder: Institut d'Investigació Biomèdica de Girona | Universitat de Girona

Spin-Off: GOODGUT SL

Inventor: Xavier Aldeguer Manté; Mariona Serra Pagès; Jesús García Gil; Teresa Mas de Xaxars

Number of application: 15382427.1

Title: Method for the detection, follow up and/or classification of intestinal diseases

Holder: Institut d'Investigació Biomèdica de Girona | Universitat de Girona

Spin-Off: GOODGUT SL

Inventor: Xavier Aldeguer, Jesús García-Gil, Margarita Martínez, Mireia López-Siles

Publications

Originals:

López-Siles, M; Duncan, S.H; García-Gil, L.J; Martínez-Medina, M. *Faecalibacterium prausnitzii*: from microbiology to diagnostics and prognostics. *ISME Journal*. 11, pp. 841 - 852. (USA): 2017. ISSN 1751-7362

Nutrition, eumetabolism and health

Team involved in:



Team associated to “Centro de Investigación Biomédica en Red Fisiopatología de la Obesidad y Nutrición” (CIBERObn)
Recognised as a consolidated research group

Group members

Group leader

José-Manuel Fernández-Real

Established researchers

José María Moreno (CIBERObn)

Francisco José Ortega

Post-doctoral researchers

Estefania Caballano (CIBERObn)

Yenny Leal

Pre-doctoral researchers

Mònica Sabater

María Arrioriaga

Jessica Latorre

Ferran Comas

Maria de la Encarnación Palomo

Medical researchers

Marzena Wos

Eduardo Esteve

Mònica Recasens

Gemma Xifra

Josefina Biarnés

Mercè Fernández

Wifredo Ricart

Mariona Esteve

Elisabet Costa

David Pérez

Lidia Sojo

Technicians

Aina Lluch

Nursing staff

Oscar Rovira (CIBERObn)

Support

Isma Ishaq

Anna Pibernat

Cristina Planella

Emilio Loshuertos



Overview

The "Nutrition, Eumetabolism and Health" group research is focused on the pathophysiology of obesity, type 2 diabetes mellitus and their complications. The main lines of research are centered on innate immune system, inflammation and metabolic disease. The group has done significant work on the association of various genetic inflammatory polymorphisms of the innate immune system with insulin resistance and several other parameters of the metabolic syndrome. Further, it has also contributed to genomic / genetic studies in type 2 diabetes and obesity (including microRNAs and long-non-coding RNAs). In parallel, the group's work has contributed to characterize new phenotypic variables linked to insulin resistance.

**Biology of adipose tissue*, the group coordinates the FatBANK at the state level, the only biobank specializing in adipose tissue;

**Iron metabolism (systemic, circulating and tissue in liver, brain, fatty tissue and muscle)*, with the study of iron as an important modulator of inflammation and glucose metabolism. The group has pioneered the study of the links between iron metabolism and type 2 diabetes and was the first to propose ferritin as a component of the metabolic syndrome (Diabetes Care 1998) and to measure the effects of iron-depletion on insulin sensitivity in type 2 diabetes mellitus (Diabetes 2002);

**The role of the gut microbiota composition in obesity and type 2 diabetes*. The microbiota is a very important regulatory factor of aggression and response to aggression. Intestinal bacteria are a part of the unconscious system that regulates our behaviour. It has been postulated that in the absence of bacteria humans would not have developed their level of cognitive performance;

**Non-alcoholic steatohepatitis and fatty liver linked to metabolic disease*.

**The brain as a metabolic organ*, with the study of the Gut microbiota-brain axis

**Computational tools to optimize glycemic control*.

The group has led a part of a European project (FLORINASH) that characterizes the signature of the microbiota related to non-alcoholic steatohepatitis in patients with morbid obesity and is currently part of another Horizon 2020 project, PEPPER (patient empowerment through predictive personalised decision support), which contemplates the development of a personalized decision support system for the management of chronic diseases. The system, based on reasoning based on cases and predictive models, will allow patients to manage their own illnesses, as is the case of diabetes.

Research topics

- 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.

Publications

Editorials:

Ortega FJ, Fernández-Real JM. Inflammation in the spotlight-clinical relevance of genetic variants affecting nuclear factor κ B and tumor necrosis factor receptor 1. *Ann Transl Med*. 2017 May;5(10):219.

Originals:

Quintana E, Ortega FJ, Robles-Cedeño R, Villar ML, Buxó M, Mercader JM, Alvarez-Cermeño JC, Pueyo N, Perkal H, Fernández-Real JM, Ramió-Torrentà L. miRNAs in cerebrospinal fluid identify patients with MS and specifically those with lipid-specific oligoclonal IgM bands. *Mult Scler*. 2017 Nov;23(13):1716-1726.

Moreno-Navarrete JM, Blasco G, Puig J, Biarnés C, Rivero M, Gich J, Fernández-Aranda F, Garre-Olmo J, Ramió-Torrentà L, Alberich-Bayarri Á, García-Castro F, Pedraza S, Ricart W, Fernández-Real JM. Neuroinflammation in obesity: circulating lipopolysaccharide-binding protein associates with brain structure and cognitive performance. *Int J Obes (Lond)*. 2017 Nov;41(11):1627-1635.

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Chacón MR, Lozano-Bartolomé J, Portero-Otín M, Rodríguez MM, Xifra G, Puig J, Blasco G, Ricart W, Chaves FJ, Fernández-Real JM. The gut mycobiome composition is linked to carotid atherosclerosis. *Benef Microbes*. 2017 Nov 10:1-14.

Mysore R, Ortega FJ, Latorre J, Ahonen M, Savolainen-Peltonen H, Fischer-Posovszky P, Wabitsch M, Olkkonen VM, Fernández-Real JM, Haridas PAN. MicroRNA-221-3p Regulates Angiopoietin-Like 8 (ANGPTL8) Expression in Adipocytes. *J Clin Endocrinol Metab*. 2017 Nov 1;102(11):4001-4012.

Xifra G, Moreno-Navarrete JM, Moreno M, Ricart W, Fernández-Real JM. Obesity status influences the relationship among serum osteocalcin, iron stores and insulin sensitivity. *Clin Nutr*. 2017 Oct 6. pii: S0261-5614(17)31361-4.

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Moreno-Navarrete JM, Moreno M, Ortega F, Xifra G, Hong S, Asara JM, Serrano JCE, Jové M, Pissios P, Blüher M, Ricart W, Portero-Otin M, Fernández-Real JM. TSHB mRNA is linked to cholesterol metabolism in adipose tissue. *FASEB J*. 2017 Oct;31(10):4482-4491.

López B, Torrent-Fontbona F, Viñas R, Fernández-Real JM. Single Nucleotide Polymorphism relevance learning with Random Forests for Type 2 diabetes risk prediction. *Artif Intell Med*. 2017 Sep 21.

Osorio-Conles O, Guitart M, Moreno-Navarrete JM, Escoté X, Duran X, Fernandez-Real JM, Gomez-Foix AM, Fernández-Veledo S, Vendrell J. Adipose tissue and serum CCDC80 in obesity and its association with related metabolic disease. *Mol Med*. 2017 Aug 23; 23.

Blasco G, Moreno-Navarrete JM, Rivero M, Pérez-Brocal V, Garre-Olmo J, Puig J, Daunis-I-Estadella P, Biarnés C, Gich J, Fernández-Aranda F, Alberich-Bayarri Á, Moya A, Pedraza S, Ricart W, López M, Portero-Otin M, Fernandez-Real JM. The Gut Metagenome Changes in Parallel to Waist Circumference, Brain Iron Deposition, and Cognitive Function. *J Clin Endocrinol Metab*. 2017 Aug 1;102 (8):2962-2973.

Wu H, Esteve E, Tremaroli V, Khan MT, Caesar R, Mannerås-Holm L, Ståhlman M, Olsson LM, Serino M, Planas-Fèlix M, Xifra G, Mercader JM, Torrents D, Burcelin R, Ricart W, Perkins R, Fernández-Real JM, Bäckhed F. Metformin alters the gut microbiome of individuals with treatment-naïve type 2 diabetes, contributing to the therapeutic effects of the drug. *Nat Med*. 2017 Jul;23 (7):850-858.

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Moreno-Navarrete JM, Rodríguez A, Ortega F, Becerril S, Sabater-Masdeu M, Latorre J, Ricart W, Frühbeck G, Fernández-Real JM. Increased adipose tissue heme levels and exportation are associated with altered systemic glucose metabolism. *Sci Rep*. 2017 Jul 13;7 (1):5305.

Moreno-Navarrete JM, Ortega F, Rodríguez A, Latorre J, Becerril S, Sabater-Masdeu M, Ricart W, Frühbeck G, Fernández-Real JM. HMOX1 as a marker of iron excess-induced adipose tissue dysfunction, affecting glucose uptake and respiratory capacity in human adipocytes. *Diabetologia*. 2017 May;60 (5):915-926.

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Grasa MD, Gulfo J, Camps N, Alcalá R, Monserrat L, Moreno-Navarrete JM, Ortega FJ, Esteve M, Remesar X, Fernández-López JA, Fernández-Real JM, Alemany M. Modulation of SHBG binding to testosterone and estradiol by sex and morbid obesity. *Eur J Endocrinol*. 2017 Apr; 176 (4):393-404.

Fernandez-Garcia JC, Alcaide J, Santiago-Fernandez C, Roca-Rodriguez MM, Agüera Z, Baños R, Botella C, de la Torre R, Fernandez-Real JM, Frühbeck G, Gomez-Ambrosi J, Jimenez-Murcia S, Menchon JM, Casanueva FF, Fernandez-Aranda F, Tinahones FJ, Garrido-Sanchez L. An increase in visceral fat is associated with a decrease in the taste and olfactory capacity. *PLoS One*. 2017 Feb 3; 12(2):e0171204.

Moreno-Navarrete JM, Jové M, Padró T, Boada J, Ortega F, Ricart W, Pamplona R, Badimón L, Portero-Otín M, Fernández-Real JM. Adipocyte lipopolysaccharide binding protein (LBP) is linked to a specific lipidomic signature. *Obesity (Silver Spring)*. 2017 Feb;25(2):391-400.

Martínez-Sánchez N, Moreno-Navarrete JM, Contreras C, Rial-Pensado E, Fernø J, Nogueiras R, Diéguez C, Fernández-Real JM, López M. Thyroid hormones induce browning of white fat. *J Endocrinol*. 2017 Feb;232(2):351-362.

Moreno-Navarrete JM, López-Navarro E, Candenás L, Pinto F, Ortega FJ, Sabater-Masdeu M, Fernández-Sánchez M, Blasco V, Romero-Ruiz A, Fontán M, Ricart W, Tena-Sempere M, Fernández-Real JM. Ferroportin mRNA is down-regulated in granulosa and cervical cells from infertile women. *Fertil Steril*. 2017 Jan;107(1):236-242.

Reviews:

Perakakis N, Triantafyllou GA, Fernández-Real JM, Huh JY, Park KH, Seufert J, Mantzoros CS. Physiology and role of irisin in glucose homeostasis. *Nat Rev Endocrinol*. 2017 Jun;13 (6):324-337.

Fernández Real JM, Moreno-Navarrete JM, Manco M. Iron influences on the Gut-Brain axis and development of type 2 diabetes. *Crit Rev Food Sci Nutr*. 2017 Sep 8:1-7.

Moreno-Navarrete JM, Fernández-Real JM. The complement system is dysfunctional in metabolic disease: Evidences in plasma and adipose tissue from obese and insulin resistant subjects. *Semin Cell Dev Biol*. 2017 Oct 26. pii: S1084-9521(17)30132-5.

Books chapters:

Gemma Xifra, José María Moreno-Navarrete and José Manuel Fernández-Real. The Microbiota and Energy Balance. *Obesity, Endocrinology*, 4, 2017.

José María Moreno-Navarrete and José Manuel Fernández-Real. Adipocyte differentiation. *Adipose Tissue Biology*, ch 3, 2017.

Current grants

Project: INFLAMES-Study of adipose tissue, muscle and brain iron in obese subjects, with gut microbiota and effects of weight loss (PI15/01934)

Funding agency: Instituto de Salud Carlos III

Duration: 2016-2019

Lead Researcher: J.M. Fernández-Real

Project: Patient empowerment through personalised decision support (PEPPER)

Funding agency: European Comission

Duration: 2016-2019

Lead Researcher: J.M. Fernández-Real

Project: Estudi de la biosíntesis de H₂S en el teixit adipós humà i el seu possible efecte en la fisiologia de l'adipòcit

Funding agency: Sociedad Española de Diabetes

Duration: 2016-2017

Lead Researcher: José María Moreno Navarrete

Project: Regulació de l'activitat mitocondrial com a estratègia terapèutica per a l'obesitat i la diabetis de tipus 2

Funding agency: La Marató TV3 Foundation

Duration: 2017-2019

Lead Researcher: Wifredo Ricart

Project: Rellevància del clúster miR-424(322)/503 en el desenvolupament d'un teixit adipós hiperplàsic

Funding agency: La Marató TV3 Foundation

Duration: 2017-2019

Lead Researcher: Francsico José Ortega Delgado

Project: Identificació de mediadors moleculars de la senyalització de l'intestí vers la sensibilització a la insulina i el "browning" del teixit adipós: paper de LBP i FGF15/19

Funding agency: La Marató TV3 Foundation

Duration: 2017-2019

Lead Researcher: José Maria Moreno Navarrete

Project: Estudi de la Biosíntesi intestinal de LBP i cèl·lules de Paneth en relació amb la sensibilitat a insulina i obesitat.

Funding agency: Instituto de Salud Carlos III

Duration: 2017-2019

Lead Researcher: Wifredo Ricart Engel

Project: Estudio de la biosíntesis de H₂S en el tejido adiposo humano y su posible efecto en la adipogenesis y en la sensibilidad a la insulina

Funding agency: Instituto de Salud Carlos III

Duration: 2017-2019

Lead Researcher: José María Moreno Navarrete

Project: Rellevància del cluster miR-424(322)/503 en el desenvolupament d'un teixit adipós hiperplàsic.
Funding agency: Pla estratègic de recerca i innovació en salut (PERIS). Departament de Salut, Generalitat de Catalunya
Duration: 2017-2019
Lead Researcher: Francsico José Ortega Delgado

Patents

Number of application: P201330998
Title: Moléculas útiles para el tratamiento y/o prevención de trastornos metabólicos asociados a obesidad y resistencia a insulina
Holder: CIBERobn, IDIBGI, Clínica Universidad de Navarra, Barcelona Supercomputing Center
Inventor: José Maria Moreno Navarrete, José Manuel Fernández-Real, Francesc Villarroya, Wifredo Ricart, Gemma Frühbeck

Number of application: ES2654.4
Title: Método para el diagnóstico y/o pronóstico de obesidad mórbida
Holder: CIBERobn, IDIBGI, Clínica Universidad de Navarra, Barcelona Supercomputing Center
Inventor: Francisco José Ortega Delgado, José Manuel Fernández-Real, Gemma Frühbeck, Josep Maria Mercader, Wifredo Ricart

Number of application: CN2015827331 20150423
Title: Method for diagnosing hepatic fibrosis
Holder: VAIOMER, SL12
Inventor: Cortney Michael, Lelouvier Benjmin, Federici Massimo, Fernández-Real José Manuel, Paissé Sandrine

Theses

Title: Estudi de l'expressió de factors al teixit adipós. Relació amb la resistència a la insulina
Doctoral student: Gemma Xifra Villarroya
Thesi director: José Manuel Fernández-Real
University: University of Girona
Date: 03/02/2017

Awards

Title: Young researcher's grant "Estudio de la biosíntesis de H2S en tejido humano y su posible efecto en la fisiología de adipocito"
Institution: SED2016
Awardee/s: José María Moreno Navarrete

Pediatric endocrinology

Group members

Group leader

Abel López Bermejo

Post-doctoral researchers

Esther Lizarraga

Sílvia Xargay

Pre-doctoral researchers

Montserrat Gispert

Ferran Díaz

Medical researchers:

Lluís Mayol

Pilar Soriano

Elena Riera

Joan-Carles Riera

Inés Osiniri

Support:

Anna Prats

Gemma Carreras



Overview

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.

Research topics

Obesity prevention and identification of cardiometabolic risk markers at childhood.

Specific research lines:

- Molecular basis of childhood obesity
- Cardiovascular risk markers at childhood
- Prenatal basis of metabolic programming
- Epigenetics of development (DNA methylation)

Publications

Originals:

Prats-Puig A, Carreras-Badosa G, Bassols J, Cavelier P, Magret A, Sabench C, de Zegher F, Ibáñez L, Feil R, López-Bermejo A. The placental imprinted DLK1-DIO3 domain: a new link to prenatal and postnatal growth in humans. *Am J Obstet Gynecol*. 2017 Sep;217(3):350.e1-350.e13.

Díaz M, García C, Sebastiani G, de Zegher F, López-Bermejo A, Ibáñez L. Placental and Cord Blood Methylation of Genes Involved in Energy Homeostasis: Association with Fetal Growth and Neonatal Body Composition. *Diabetes*. 2017 Mar;66(3):779-784. doi: 10.2337/db16-0776.

Carreras-Badosa G, Bonmatí A, Ortega FJ, Mercader JM, Guindo-Martínez M, Torrents D, Prats-Puig A, Martínez-Calcerrada JM, de Zegher F, Ibáñez L, Fernández-Real JM, López-Bermejo A, Bassols J. Dysregulation of Placental miRNA in Maternal Obesity Is Associated with Pre- and Postnatal Growth. *J Clin Endocrinol Metab*. 2017 Jul 1;102(7):2584-2594.

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. α -Defensins and bacterial/permeability-increasing protein as new markers of childhood obesity. *Pediatr Obes*. 2017 Apr;12(2):e10-e13.

Ibáñez L, Del Río L, Díaz M, Sebastiani G, Pozo ÓJ, López-Bermejo A, de Zegher F. Normalizing Ovulation Rate by Preferential Reduction of Hepato-Visceral Fat in Adolescent Girls with Polycystic Ovary Syndrome. *J Adolesc Health*. 2017 Oct;61(4):446-453.

Bassols J, Martínez-Calcerrada JM, Prats-Puig A, Carreras-Badosa G, Xargay-Torrent S, Lizarraga-Mollinedo E, Feliu-Alsina M, Riera-Pérez E, Osiniri I, de Zegher F, Ibáñez L, López-Bermejo A. Perirenal fat is related to carotid intima-media thickness in children. *Int J Obes (Lond)*. 2017 Sep 25.

Díaz M, García-Beltrán C, López-Bermejo A, de Zegher F, Ibáñez L. GLP-1 and IGF-I levels are elevated in late infancy in low birth weight infants, independently of GLP-1 receptor polymorphisms and neonatal nutrition. *Int J Obes (Lond)*. 2017 Nov 1.

de Zegher F, García Beltrán C, López-Bermejo A, Ibáñez L. Metformin for Rapidly Maturing Girls with Central Adiposity: Less Liver Fat and Slower Bone Maturation. *Horm Res Paediatr*. 2017 Nov 7.

Ibáñez L, Oberfield SE, Witchel S, Auchus RJ, Chang RJ, Codner E, Dabadghao P, Darendeliler F, Elbarbary NS, Gambineri A, García Rudaz C, Hoeger KM, López-Bermejo A, Ong K, Peña

AS, Reinehr T, Santoro N, Tena-Sempere M, Tao R, Yildiz BO, Alkhayat H, Deeb A, Joel D, Horikawa R, de Zegher F, Lee PA. An International Consortium Update: Pathophysiology, Diagnosis, and Treatment of Polycystic Ovarian Syndrome in Adolescence. *Horm Res Paediatr*. 2017;88(6):371-395.

de Zegher F, Reinehr T, Malpique R, Darendeliler F, López-Bermejo A, Ibáñez L. Reduced Prenatal Weight Gain and/or Augmented Postnatal Weight Gain Precedes Polycystic Ovary Syndrome in Adolescent Girls. *Obesity (Silver Spring)*. 2017 Sep;25(9):1486-1489.

de Zegher F, Díaz M, Lopez-Bermejo A, Ibáñez L. Recognition of a sequence: more growth before birth, longer telomeres at birth, more lean mass after birth. *Pediatr Obes*. 2017 Aug;12(4):274-279.

Current grants

Project: Efecto de la sobrenutrición materna en las marcas epigenéticas de programación metabólica: identificación y reversibilidad terapéutica

Funding agency: Instituto de Salud Carlos III

Duration: 2017-2019

Lead Researcher: Abel Lopez-Bermejo

Project: Vigilancia poscomercialización para controlar la seguridad y la eficacia a largo plazo de Omnitrope® en niños y adolescentes (PATRO Children: EP00-501)

Funding agency: Sandoz (private company)

Duration: 2015-2018

Lead Researcher: Abel Lopez-Bermejo

Project: A Phase 2, Randomized, Open-Label, Safety and Dose-Finding Study Comparing 3 Different Doses of Weekly TV-1106 and Daily Recombinant Human Growth Hormone (Genotropin®) Therapy in Treatment-Naive, Pre-Pubertal, Growth Hormone-Deficient Children (TV1106-IMM-20001)

Funding agency: Pfizer (private company)

Duration: 2015-2017

Lead Researcher: Abel Lopez-Bermejo

Project: Easypod Connect Observational Study (ECOS)

Funding agency: Merck (private company)

Duration: 2015-2017

Lead Researcher: Abel Lopez-Bermejo

Theses

Title: Identificació de microRNAs circulants i placentaris en obesitat materna gestacional i la seva relació amb paràmetres metabòlics materns i el creixement pre i postnatal

Doctoral student: Alexandra Bonmatí Santané

Thesi director: Judit Bassols - Abel Lopez-Bermejo

University: University of Girona

Faculty/school: School of Medicine

Date: 28/11/2017

Awards

Title: La grasa renal, un nuevo indicador de riesgo cardiovascular en niños prepuberales

Institution: Spanish Society of Pediatric Endocrinology (SEEP)

Awardee/s: 20th Prize for oral communication in pediatric endocrinology

Other: Sponsored by Lilly

Respiratory group

Group members

Group leader

Ramón Orriols

Established researchers:

Montserrat Vendrell

Olga Tura

Post-doctoral researchers:

Manel Haro

Susana Mota

Gerard Muñoz

Pre-doctoral researchers:

Eric Rojas

Daniel S. Torres

Medical researchers:

Sònia Belda

Anton Obrador

Juan Carlos Calderón

Maria José Redondo

Saioa Eizaguirre

Gladis Sabater

Technicians

Neus Luque

Support

Laia Merchan

Cristina Martínez



Overview

The Respiratory Research Group is composed by several researchers from the Pneumology Service at Hospital Dr. Josep Trueta – Hospital Santa Caterina. It is focused on bronchiectasis, sleep diseases, occupational respiratory diseases and Interstitial Lung Diseases research.

Research topics

Sleep diseases: diagnostic at Primary Health care level and vascular impact.

Bronchiectasis: Etiology, diagnostic and treatment. Physiotherapy. Primary immunodeficiencies.

Occupational diseases and immunoallergic respiratory diseases.

Diffuse Interstitial pulmonary disease: diagnostic and treatment.

Publications

Case reports:

Ramon Orriols, Roser Costa, María-Ángeles Montero, Esther Pallisa, Ricardo Bravo, Ana Villar, Ferran Morell. Peribronchiolar metaplasia interstitial pneumonia in cleaning workers. *Int J ClinExp Med* 2017;10(2):3778-3786

Originals:

Olveira C, Padilla A, Martínez-García MÁ, de la Rosa D, Girón RM, Vendrell M, et al. Etiology of Bronchiectasis in a Cohort of 2047 Patients. An Analysis of the Spanish Historical Bronchiectasis Registry. *Arch Bronconeumol.* 2017 Jul;53(7):366-374

Martinez-Garcia MA, Athanazio RA, Girón R, Máiz-Carro L, de la Rosa D, Olveira C, et al (Vendrell M). Predicting high risk of exacerbations in bronchiectasis: the E-FACED score. *Int J Chron Obstruct Pulmon Dis.* 2017 Jan 18;12:275-284.

Girón RM, de Gracia Roldán J, Olveira C, Vendrell M, Martínez-García MÁ, et al. Sex bias in diagnostic delay in bronchiectasis: An analysis of the Spanish Historical Registry of Bronchiectasis. *ChronRespir Dis.* 2017 Nov;14(4):360-369.

De la Rosa D, Martínez-Garcia MA, Giron RM, Vendrell M, OlveiraC, et al. Clinical impact of chronic obstructive pulmonary disease on non-cystic fibrosis bronchiectasis. A study on 1,790 patients from the Spanish Bronchiectasis Historical Registry. *PLoSOne.* 2017;12(5):e0177931.

Abós-Herrándiz R, Rodriguez-Blanco T, Garcia-Allas I, Orriols R, Grimau-Malet I, Canela-Soler J. et al. Risk Factors of Mortality from All Asbestos-Related Diseases: A Competing Risk Analysis. *Can Respir J.* 2017;2017:9015914.

Muñoz G, de Gracia J, Buxó M, Alvarez A, Vendrell M. Long-term benefits of airway clearance in bronchiectasis: a randomized placebo-controlled trial. *EurRespir J* 2017 (in press)

Hill A; Haworth C; Aliberti, S; Barker A, Blasi; Vendrell M, et al. Pulmonary Exacerbation in Adults with Bronchiectasis: A Consensus Definition for clinical research. *EurRespir J.* 2017 Jun 8;49(6)

Polverino E, Goeminne PC, McDonnell MJ, Aliberti S, Marshall SE, Vendrell M, et al. European Respiratory Society guidelines for the management of adult bronchiectasis. *EurRespir J.* 2017 Sep 9;50(3)

Reviews:

Chalmers JD, Crichton M, Goeminne PC, Loebinger MR, Haworth C, Almagro M, et al (Vendrell M). The European Multicentre Bronchiectasis Audit and Research Collaboration (EMBARC): experiences from a successful ERS Clinical Research Collaboration. *Breathe* (Sheff). 2017;13:180-192. doi: 10.1183/20734735.005117. Review.

Books chapters:

Javier de Gracia; Montserrat Vendrell; Ramon Orriols. Bronquiectasias. Guía Pneumológica: Pautas, exploraciones complementarias y datos en medicina respiratoria. 2017;pp. 28-34. Ed Méderic Ediciones, S.L.(A1080) (décima edición).

Javier De Gracia; Ramon Orriols. Montserrat Vendrell. Antonio Alvarez. Antibioticoterapia inhalada. Guía Pneumológica: Pautas, exploraciones complementarias y datos en medicina respiratoria; 2017;pp. 6-7. Méderic Ediciones, S.L. (A1080) (décima edición)

Xavier Muñoz; Ramon Orriols. Asma ocupacional. En Guía Pneumológica: Pautas, exploraciones complementarias y datos en medicina respiratoria; 2017;pp. 169-178. Ed Méderic Ediciones, S.L. (A1080) (décima edición)

Ramon Orriols. Hemoptisis. Guía Pneumológica: Pautas, exploraciones complementarias y datos en medicina respiratoria; 2017. pp. 105-106. Ed Méderic Ediciones, S.L. (A1080) (décima edición)

Ferran Morell; Ramon Orriols. Pautas, exploraciones complementarias y datos en medicina respiratoria. Guía Pneumológica. Méderic; 2017. Ediciones, S.L.,

Maria Jesús Cruz; Ramon Orriols. Patología ocupacional y ambiental. Guía Pneumológica: Pautas, exploraciones complementarias y datos en medicina respiratoria. 2017;pp. 167-169. Ed Méderic Ediciones, S.L. (A1080) (décima edición)

Javier De Gracia; Ramon Orriols. Pseudomonas: Colonización e infección bronquial. Guía Pneumológica: Pautas, exploraciones complementarias y datos en medicina respiratoria; 2017. pp. 188 - 189. Ed Méderic Ediciones, S.L.(A1080) (décima edición)

Vendrell M, Obradović D, Diel R, de Gracia J. Epidemiology. In Chalmers J, Polverino E, Aliberti S. Bronchiectasis. The EMBARC Manual. Springer (in press)

Rojas E, Barrio E, Vendrell M. Neumonías bacterianas adquiridas en la comunidad. En Alfageme I, Ancochea J, de Lucas P. Manual del Médico Residente en Neumología; 2017. Pp127-137. Ediciones Mayo SA (ISBN 978-84-945873-8-2). Dep Legal B 22865-2017

Current grants

Project: SLT006/17/251. Laboratory technician PERIS

Funding agency: Departament de Salut

Duration: 2017-2021

Coordinator: Olga Tura

Lead Researcher: Ramon Orriols

Project: CQVM149B2302. Estudio multicéntrico, aleatorizado, doble ciego, de grupos paralelos, con control activo de 52 semanas de duración para comparar la eficacia y la seguridad de QVM149 con QMF149 en pacientes con asma

Funding agency: Novartis

Coordinator: Gladis Sabater

Lead Researcher: Ramon Orriols

Project: 200879. A Phase IIb, Randomized (Stratified), Double-Blind (Sponsor Open), Parallel Group, Placebo-Controlled, Dose-Finding Study of Nemoralisib (GSK2269557) Added to Standard of Care (SoC) Versus SoC Alone in Participants Diagnosed with an Acute Moderate or Severe Exacerbation of Chronic Obstructive Pulmonary Disease. (COPD)

Funding agency: GSK

Coordinator: Sonia Belda

Lead Researcher: Ramon Orriols

Project: 1199-0296: Estudio observacional del impacto socioeconómico de la FIP en España

Funding agency: BI

Coordinator: Saioa Eizaguirre

Lead Researcher: Ramon Orriols

Project: INS1007-201. A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, MultiCenter Study to Assess the Efficacy, Safety and Tolerability, and Pharmacokinetics of INS1007 Administered Once Daily for 24 Weeks in Subjects with Non-Cystic Fibrosis Bronchiectasis - The Willow Study

Funding agency: Insmed/GSK

Coordinator: Montserrat Vendrell

Lead Researcher: Montserrat Vendrell

Project: Miquel Servet (col·laboració IDIBAPS)

Funding agency: ISCIII

Lead Researcher: Olga Tura

Project: DISON: Endothelial dysfunction, metabolomics and biomarkers in patients with Obstructive Sleep Apnea Syndrome (OSAS)

Funding agency: SEPAR

Coordinator: Olga Tura

Lead Researcher: Olga Tura

Clinical essays

- 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

- Estudio fase III, aleatorizado, doble ciego, con 3 grupos paralelos, de 52 semanas de duración para comparar la eficacia, seguridad y tolerabilidad de la combinación triple de dosis fija FF/UMEC/VI con las combinaciones dobles de dosis fija FF/VI y UMEC/VI, administradas una vez al día por la mañana mediante un inhalador de polvoseco en sujetos con enfermedad pulmonar obstructiva crónica"

Sponsored by: GSK

Duration: 2015-

Dr. Ramon Orriols

- Estudi de les malalties relacionades amb l'amiant

Sponsored by: IDIAP Jordi Gol

Duration: 2013-

Dr. Rafael Abós Herrandiz

Theses

Title: Eficàcia de la fisioteràpia respiratòria en pacients amb bronquiectàsia

Doctoral student: Gerard Muñoz

Thesi director: Montserrat Vendrell/ Javier de Gracia

University: Autonomous University of Barcelona

Faculty/school: School of Medicine

Date: 10/07/2017

Partner groups

- Member of the Steering Committee: The European bronchiectasis registry (EMBARC). Montserrat Vendrell.
- Member of the TaskForce on adult non-cystic fibrosis bronchiectasis (TF-2014-13) of the European Respiratory Society (ERS). Montserrat Vendrell.
- Member of the Scientific Committee: The European bronchiectasis registry (EMBARC). Montserrat Vendrell
- Researcher collaborating at Grup Emergent "Observatori per l'estudi de les malalties relacionades amb l'Amiant". Institut Català de la Salut – IDIAP. Jordi Gol, Ramon Orriols.

Maternal and fetal metabolic research

Recognised as a research group

Group members

Group leader

Judit Bassols

Technicians

Berta Mas

Post-doctoral researchers

José Maria Martínez Calcerrada Alexandra Bonmatí

Support

Estibaliz Platero

Medical researchers

Mercè Montesinos



Overview

There is lack of good biomarkers, which could be used to accurately identify pregnant women who are at risk of developing metabolic diseases and/or have newborns at risk of developing metabolic problems. The differential abundance of miRNA in pregnancy available tissues (placenta, umbilical cord and peripheral maternal blood during gestation) may offer new insights into the mechanisms and systemic manifestations of fetal growth and metabolic pregnancy diseases.

Research topics

Main Research line:

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

Specific research lines:

1. Alterations of prenatal development: gestational obesity and restriction of fetal growth
2. Postnatal recovery growth (catch-up)
3. Metabolic programming during pregnancy
4. Epigenetics of development

Publications

Originals:

Prats-Puig A, Carreras-Badosa G, Bassols J, Cavelier P, Magret A, Sabench C, de Zegher F, Ibáñez L, Feil R, López-Bermejo A. The placental imprinted DLK1-DIO3 domain: a new link to prenatal and postnatal growth in humans. *Am J Obstet Gynecol*. 2017 Sep;217(3):350.e1-350.e13.

Carreras-Badosa G, Bonmatí A, Ortega FJ, Mercader JM, Guindo-Martínez M, Torrents D, Prats-Puig A, Martínez-Calcerrada JM, de Zegher F, Ibáñez L, Fernandez-Real JM, Lopez-Bermejo A, Bassols J. Dysregulation of Placental miRNA in Maternal Obesity Is Associated with Pre- and Postnatal Growth. *J Clin Endocrinol Metab*. 2017 Jul 1;102(7):2584-2594.

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. α -Defensins and bacterial/permeability-increasing protein as new markers of childhood obesity. *Pediatr Obes*. 2017 Apr;12(2):e10-e13.

Malpique R, Bassols J, López-Bermejo A, Diaz M, Villarroja F, Pavía J, Congo A, de Zegher F, Ibáñez L. Liver volume and hepatic adiposity in childhood: relations to body growth and visceral fat. *Int J Obes (Lond)*. 2018 Jan;42(1):65-71.

Bassols J, Martínez-Calcerrada JM, Prats-Puig A, Carreras-Badosa G, Xargay-Torrent S, Lizarraga-Mollinedo E, Feliu-Alsina M, Riera-Pérez E, Osiniri I, de Zegher F, Ibáñez L, López-Bermejo A. Perirenal fat is related to carotid intima-media thickness in children. *Int J Obes (Lond)*. 2017 Sep 25.

Current grants

Project: Identification of pregnancy-associated microRNAs in placenta and maternal plasma and their relationship with fetal growth and metabolic parameters (CP12/03239)

Funding agency: Instituto de Salud Carlos III

Duration: 2013-2017

Lead Researcher: Judit Bassols

Project: Perfil desfavorable de ácidos grasos en placenta y epigenética del desarrollo

Funding agency: Societat Catalana d'Endocrinologia i Nutrició (SCEN)

Duration: 2016-2017

Lead Researcher: Judit Bassols

Project: Identificación de microRNAs en sangre de cordón asociados al crecimiento recuperador postnatal tras restricción fetal. Modulación del crecimiento recuperador por metformina (PI14/01625)

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: Judit Bassols

Theses

Title: Identificació de microRNAs circulants i placentaris en obesitat materna gestacional i la seva relació amb paràmetres metabòlics materns i el creixement pre i postnatal

Doctoral student: Alexandra Bonmatí Santané

Thesi director: Judit Bassols - Abel Lopez-Bermejo

University: University of Girona

Faculty/school: Faculty of Medicine

Duration: 2018-2020

Lead Researcher: Judit Bassols

Date: 28/11/2017

Awards

Title: La grasa renal, un nuevo indicador de riesgo cardiovascular en niños prepuberales

Institution: Spanish Society of Pediatric Endocrinology (SEEP)

Awardee/s: XX Prize for oral communication in pediatric endocrinology

Other: Sponsored by Lilly

NEUROSCIEN- CE AREA

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
The Survey of Health, Ageing and Retirement in Europe Consortium



Group members

Group leader

Josep Garre-Olmo

Post-doctoral researchers

Laia Calvó

Oriol Turró

Medical researchers

Josep Lluís Conde

Secundí López-Pousa

Manuel de Gracia

Joan Vilalta-Franch



Overview

The research group on Ageing, Health and Disability studies the socio-demographic, clinical and epidemiological factors associated with the normal and pathological aging and with the process of disability and dependence.

Research topics

- Clinical characteristics and consequences of pathological aging associated with dementia
- Epidemiology of dementia and aging
- Development, adaptation and validation of psychometric instruments to measure variables related to aging (normal and pathological) and disability

Publications

Originals:

Garre-Olmo J, Faúndez-Zanuy M, López-de-Ipiña K, Calvó-Perxas L, Turró-Garriga O. Kinematic and Pressure Features of Handwriting and Drawing: Preliminary Results Between Patients with Mild Cognitive Impairment, Alzheimer Disease and Healthy Controls. *Curr Alzheimer Res.* 2017;14(9):960-968.

Turró-Garriga O, Calvó-Perxas L, Vilalta-Franch J, Hernández-Ferrándiz M, Flaqué M, Linares M, Culléll M, Gich J, Casas I, Perkal H, Garre-Olmo J; Registry of Dementia of Girona Study Group (ReDeGi Study Group). Adherence to Clinical Practice Guidelines during Dementia Work-Up in a Real-World Setting: A Study from the Registry of Dementias of Girona. *J Alzheimers Dis.* 2017;59(3):997-1007.

Viñas-Diez V, Turró-Garriga O, Portellano-Ortiz C, Gascón-Bayarri J, Reñé-Ramírez R, Garre-Olmo J, Conde-Sala JL. Kinship and cohabitation in relation to caregiver burden in the context of Alzheimer's disease: a 24-month longitudinal study. *Int J Geriatr Psychiatry.* 2017 Dec;32(12):e72-e82.

Moreno-Navarrete JM, Blasco G, Puig J, Biarnés C, Rivero M, Gich J, Fernández-Aranda F, Garre-Olmo J, Ramió-Torrentà L, Alberich-Bayarri Á, García-Castro F, Pedraza S, Ricart W, Fernández-Real JM. Neuroinflammation in obesity: circulating lipopolysaccharide-binding protein associates with brain structure and cognitive performance. *Int J Obes (Lond).* 2017 Nov;41(11):1627-1635.

Portellano-Ortiz C, Garre-Olmo J, Calvó-Perxas L, Conde-Sala JL. Factor structure of depressive symptoms using the EURO-D scale in the over-50s in Europe. Findings from the SHARE project. *Aging Ment Health.* 2017 Aug 31:1-9.

Blasco G, Moreno-Navarrete JM, Rivero M, Pérez-Brocá V, Garre-Olmo J, Puig J, Daunis-I-Estadella P, Biarnés C, Gich J, Fernández-Aranda F, Alberich-Bayarri Á, Moya A, Pedraza S, Ricart W, López M, Portero-Otin M, Fernandez-Real JM. The Gut Metagenome Changes in Parallel to Waist Circumference, Brain Iron Deposition, and Cognitive Function. *J Clin Endocrinol Metab.* 2017 Aug 1;102(8):2962-2973.

Blanco-Silvente L, Castells X, Saez M, Barceló MA, Garre-Olmo J, Vilalta-Franch J, Capellà D. Discontinuation, Efficacy, and Safety of Cholinesterase Inhibitors for Alzheimer's Disease: a Meta-Analysis and Meta-Regression of 43 Randomized Clinical Trials Enrolling 16 106 Patients. *Int J Neuropsychopharmacol.* 2017 Jul 1;20(7):519-528.

Turró-Garriga O, Hermoso Contreras C, Olives Cladera J, Mioshi E, Pelegrín Valero C, Olivera Pueyo J, Garre-Olmo J, Sánchez-Valle R. Adaptation and validation of a Spanish-language version of the Frontotemporal Dementia Rating Scale (FTD-FRS). *Neurologia.* 2017 Jun;32(5):290-299.

Calvó-Perxas L, Turró-Garriga O, Vilalta-Franch J, Lozano-Gallego M, de Eugenio R, Márquez F, Carmona O, Gich J, Manzano A, Viñas M, Roig AM, Garre-Olmo J; Registry of Dementias of Girona Study Group (ReDeGi Study Group). Trends in the Prescription and Long-Term Utilization of Antidementia Drugs Among Patients with Alzheimer's Disease in Spain: A Cohort Study Using the Registry of Dementias of Girona. *Drugs Aging.* 2017 Apr;34(4):303-310.

Conde-Sala JL, Portellano-Ortiz C, Calvó-Perxas L, Garre-Olmo J. 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). *Qual Life Res.* 2017 Apr;26(4):1059-1070.

Masferrer L, Garre-Olmo J, Caparrós B. Factor structure and concurrent construct validity of ICG among bereaved substance users. *Actas Esp Psiquiatr.* 2017 Mar;45(2):47-55.

Llinàs-Reglà J, Vilalta-Franch J, López-Pousa S, Calvó-Perxas L, Torrents Rodas D, Garre-Olmo J. The Trail Making Test. Assessment. 2017 Mar;24(2):183-196

Garre-Olmo J, Vilalta-Franch J, Calvó-Perxas L, López-Pousa S; CoDep-AD Study Group. A Path Analysis of Dependence and Quality of Life in Alzheimer's Disease. *Am J Alzheimers Dis Other Demen*. 2017 Mar;32(2):108-115.

Virues-Ortega J, Vega S, Seijo-Martinez M, Saz P, Rodriguez F, Rodriguez-Laso A, de Las Heras SP, Mateos R, Martinez-Martin P, Mahillo-Fernandez I, Garre-Olmo J, Gascon J, Garcia-Garcia FJ, Fernandez-Martinez M, Bermejo-Pareja F, Bergareche A, Benito-Leon J, de Pedro-Cuesta J; Spanish Epidemiological Studies on Ageing Group. A protective personal factor against disability and dependence in the elderly: an ordinal regression analysis with nine geographically-defined samples from Spain. *BMC Geriatr*. 2017 Jan 31;17(1):42.

Corominas Barnadas JM, López-Pousa S, Vilalta-Franch J, Calvó-Perxas L, Juvinyà Canal D, Garre-Olmo J. [MESGI50 study: description of a cohort on Maturity and Satisfactory Ageing]. *Gac Sanit*. 2017 Nov - Dec;31(6):511-517.

Current grants

Project: Riesgo y variables asociadas a la mortalidad tras el diagnóstico de demencia en población general (PI15/01980)

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2018

Lead Researcher: Josep Garre-Olmo

Project: Trastorns afectius i risc cardiovascular en població general: efecte diferencial dels mecanismes fisiopatològics

Funding agency: Pla estratègic de recerca i innovació en salut (PERIS) 2017. Departament de Salut, Generalitat de Catalunya

Duration: 2017-2020

Lead Researcher: Josep Garre-Olmo

Project: Desigualdades socioeconómicas en salud en los cuidadores informales (PI16/00184).

Funding agency: Instituto de Salud Carlos III

Duration: 2016-2019

Lead Researcher: Laia Calvó

Project: El sentido de coherencia de las personas cuidadoras como factor determinante de los costes asistenciales de la enfermedad de Alzheimer (PI17/00029)

Funding agency: Instituto de Salud Carlos III

Duration: 2017-2020

Lead Researcher: Oriol Turró

Project: Estudi Maduresa I Envel·liment Satisfactori a Girona [MESGI50]

Funding agency: Dipsalut

Duration: 2017

Lead Researcher: Josep Garre-Olmo

Project: Real world Outcomes across the AD spectrum for better care: Multimodal data Access Platform (ROADMAP).

Funding agency: Innovative Medicines Initiative 2. Research and Innovation Actions.

Duration: 2017-2018

Lead Researcher: John Gallacher

Project: Imagenoma de l'Envel·liment (SLT002/16/00250)

Funding agency: Pla estratègic de recerca i innovació en salut (PERIS) 2016. Departament de Salut, Generalitat de Catalunya

Duration: 2017-2020

Lead Researcher: Reinald Pamplona Gras

Theses

Title: Estudio epidemiológico en pacientes con esquizofrenia ambulatorios del estado cognitivo en áreas específicas relacionadas con resultados funcionales

Doctoral student: Silvia Zaragoza Domingo

Thesi director: Joan Vilalta-Franch

University: Autonomous University of Barcelona

Faculty/school: Psychiatric en Legal Medicine Department

Date: 04/12/2017



Cerebrovascular pathology

Team involved in "Red de Enfermedades Vasculares Cerebrales (RED INVICTUS)"
Recognised as a consolidated research group



Group members

Group leaders

Joaquín Serena Leal

Established researchers:

Carme Gubern

Post-doctoral researchers

Gemma Huguet

Elisabet Kádár

Post-doctoral researchers:

Pau Comajoan

Irene Bragado

Saïma Bashir

Medical Researchers:

Yolanda Silva

Mikel Terceño

Nursing staff

Laura Pardo

Montserrat Reina



Overview

The neurovascular research group, with more than 15 years of experience in the area of cerebrovascular diseases, has consolidated itself as new investigators have joined. It maintains scientific relations with other member centres of a network of scientific collaboration which began more than 10 years ago. Relations are particularly close with the groups that make up the Stroke area of the Thematic Network of Cooperative Health Investigation (RETICS), of the Carlos III Health Institute, which leads investigation in our country. We are one of the 11 members of this group, who have all been selected on the basis of their experience and results.

Research topics

1. Clinical and experimental approach for identification of vulnerable plaque and validation of non-invasive biomarkers in patients with atherothrombotic disease: identification of stroke risk subgroups of patients.
2. Clinical and experimental research on the predictive capacity of biomarkers in functional outcome of patients with ischemic and haemorrhagic stroke, with special attention to biomarkers of endothelial and extracellular matrix lesion as predictors of haemorrhagic transformation of ischemic lesion and recanalization response in patients receiving fibrinolytic therapy.
3. Basic research on molecular mechanisms related to cerebral ischemia in experimental models, in vivo and in vitro. In vitro Blood-Brain Barrier model development. Mechanisms of gene regulation (miRNA) and its relevance in cerebral ischemia.
4. Clinical and experimental research on the predictive capacity of biomarkers associated with the haematoma growth in patients with primary intracerebral haemorrhage.
5. Application and utility of advanced neuroimaging in the identification of brain tissue at risk in patients with ischemic penumbra and as predictor of haematoma growth in patients with intracerebral haemorrhage.
6. Clinical research using ultrasonography in patent foramen ovale: epidemiology, markers of stroke recurrence and evaluation of efficacy of pharmacological therapy in secondary stroke prevention.

Publications

Originals:

Puig J, Blasco G, Daunis-I-Estadella P, van Eendendburg C, Carrillo-García M, Aboud C, Hernández-Pérez M, Serena J, Biarnés C, Nael K, Liebeskind DS, Thomalla G, Menon BK, Demchuk A, Wintermark M, Pedraza S, Castellanos M. High-permeability region size on perfusion CT predicts hemorrhagic transformation after intravenous thrombolysis in stroke. *PLoS One*. 2017 Nov 28;12(11):e0188238.

Bustamante A, López-Cancio E, Pich S, Penalba A, Giralt D, García-Berrocó T, Ferrer-Costa C, Gasull T, Hernández-Pérez M, Millán M, Rubiera M, Cardona P, Cano L, Quesada H, Terceño M, Silva Y, Castellanos M, Garcés M, Reverté S, Ustrell X, Marés R, Baiges JJ, Serena J, Rubio F, Salas E, Dávalos A, Montaner J. Blood Biomarkers for the Early Diagnosis of Stroke: The Stroke-Chip Study. *Stroke*. 2017 Sep;48(9):2419-2425.

Purroy F, Vena A, Cánovas D, Cardona P, Cocho D, Cuadrado-Godia E, Chamorro A, Dávalos A, Garcés M, Gomis M, Krupinski J, Palomeras E, Ribó M, Roquer J, Rubiera M, Sanahuja J, Saura J, Serena J, Ustrell X, Vargas M, Benabdelhak I, Abilleira S, Gallofré M; Catalan Stroke Code and Reperfusion Consortium. Influence of Hospital Type on Outcomes of Individuals Aged 80 and Older with Stroke Treated Using Intravenous Thrombolysis. *J Am Geriatr Soc*. 2017 Sep;65(9):E117-E122.

Suñer-Soler R, Grau-Martín A, Terceno M, Silva Y, Dávalos A, Sánchez JM, Font-Mayolas S, Gras E, Rodrigo J, Kazimierczak M, Malagón C, Serena J. Biological and Psychological Factors Associated With Smoking Abstinence Six Years Post-Stroke. *Nicotine Tob Res*. 2017 Jul 4.

Dávalos A, Cobo E, Molina CA, Chamorro A, de Miquel MA, Román LS, Serena J, López-Cancio E, Ribó M, Millán M, Urra X, Cardona P, Tomasello A, Castaño C, Blasco J, Aja L, Rubiera M, Gomis M, Renú A, Lara B, Martí-Fàbregas J, Jankowitz B, Cerdà N, Jovin TG; REVASCAT Trial Investigators. Safety and efficacy of thrombectomy in acute ischaemic stroke (REVASCAT): 1-year follow-up of a randomised open-label trial. *Lancet Neurol*. 2017 May;16(5):369-376.

Fernández-Cadenas I, Mendióroz M, Giralt D, Nafria C, Garcia E, Carrera C, Gallego-Fabrega C, Domingues-Montanari S, Delgado P, Ribó M, Castellanos M, Martínez S, Freijo M, Jiménez-Conde J, Rubiera M, Alvarez-Sabín J, Molina CA, Font MA, Grau Olivares M, Palomeras E, Perez de la Ossa N, Martinez-Zabaleta M, Masjuan J, Moniche F, Canovas D, Piñana C, Purroy F, Cocho D, Navas I, Tejero C, Aymerich N, Culléll N, Muiño E, Serena J, Rubio F, Dávalos A, Roquer J, Arenillas JF, Martí-Fàbregas J, Keene K,

Chen WM, Worrall B, Sale M, Arboix A, Krupinski J, Montaner J; GRECOS Study Group. GRECOS Project (Genotyping Recurrence Risk of Stroke): The Use of Genetics to Predict the Vascular Recurrence After Stroke. *Stroke*. 2017 May;48(5):1147-1153.

Engedal TS, Hjort N, Hougaard KD, Simonsen CZ, Andersen G, Mikkelsen IK, Boldsen JK, Eskildsen SF, Hansen MB, Angleys H, Jespersen SN, Pedraza S, Cho TH, Serena J, Siemonsen S, Thomalla G, Nighoghossian N, Fiehler J, Mouridsen K, Østergaard L. Transit time homogenization in ischemic stroke - A novel biomarker of penumbral microvascular failure? *J Cereb Blood Flow Metab*. 2017 Jan 1:271678X17721666.

Engedal T, Hjort N, Hougaard K, Simonsen G, Andersen G, Mikkelsen I, Eskildsen S, Boldsen J, Angleys H, Jespersen S, Hansen M, Pedraza S, Serena J, Cho TH, Siemonsen S, Thomalla G, Nighoghossian N, Fiehler J, Mouridsen K, Østergaard L. Transit time homogenization in ischemic stroke – a biomarker of penumbral microvascular failure? *JCBFM* 2017 Jan 1:271678X17721666 (Epub ahead of print)

Purroy F, Vena A, Cánovas D, Cardona P, Cocho D, Cuadrado E, Chamorro A, Davalos A, Garcés M, Gomis M, Krupinski J, Palomeras E, Ribo M, Roquer J, Rubiera M, Sanahuja J, Serena J, Ustrell X, Vargas M, Abilleira S, Gallofré M; Catalan Stroke Code and Reperfusion Consortium. Influence of hospital type on the outcome of stroke patients over 80 years old treated with intravenous thrombolysis. *J Am Geriatr Soc*. 2017 Jun 2. doi: 10.1111/jgs.14935. [Epub ahead of print]. PMID: 28574595

Terceño M, Serena J, Bragado I, Silva Y. Contrast Extravasation through MRI Precedes Cerebral Hemorrhage in a Patient with Eclampsia. *Neurol Sci*. 2017 Apr;38(4):693-694. PMID: 27885447. DOI 10.1007/s10072-016-2781-9

Serena J. La Controvèrsia. Tancament del foramen oval permeable després d'un ictus criptogènic: no. *Butlletí de la Societat Catalana de Neurologia* 2017. 33:23-27. ISSN 2013-1186.

Huguet, G; Kádár E; Temel, Y; Lim, Lw. Electrical stimulation normalizes c-Fos expression in the deep cerebellar nuclei of depressive-like rats: implication of antidepressant activity. *Cerebellum*. 16;2, p398-410, 2017. ISSN 1473-4222

Castaño C, Terceño M, Remollo S, García-Sort MR, Domínguez C. Endovascular treatment of wide-neck intracranial bifurcation aneurysms with 'Y'-configuration, double Neuroform® stents-assisted coiling technique: Experience in a single center. *Interv Neuroradiol*. Interv Neuroradiol. 2017 Aug; 23(4):362-370.

Castaño C, Remollo S, García-Sort R, Domínguez C, Terceño

M. Treatment of Barrow type 'B' carotid cavernous fistulas with flow diverter stent (Pipeline). *Neuroradiol J*. 2017 Jan 1:1971400917695319. doi: 10.1177/1971400917695319.

Puig J, Blasco G, Schlaug G, Stinear CM, Daunis-I-Estadella P, Biarnes C, Figueras J, Serena J, Hernández-Pérez M, Alberich-Bayarri A, Castellanos M, Liebeskind DS, Demchuk AM, Menon BK, Thomalla G, Nael K, Wintermark M, Pedraza S. Diffusion tensor imaging as a prognostic biomarker for motor recovery and rehabilitation after stroke. *Neuroradiology*. 2017 Apr;59(4):343-351.

Current grants

Project: 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)

Funding agency: Instituto de Salud Carlos III

Duration: 2016-2018

Lead Researcher: Joaquín Serena

Project: Dispositivo point of care de diagnóstico del ictus mediante biomarcadores plasmáticos: 2-stroke-chip

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: Maria del Mar Castellanos

Project: Efficacy and safety of MRI-based thrombolysis in wake-up stroke: a randomised, double-blind, placebo-controlled trial (Wake-Up Stroke)

Funding agency: European Commission

Duration: 2012-2017

Lead Researcher: Maria del Mar Castellanos

Project: Prediction of intracerebral hemorrhage growth by CT-perfusion: a prospective study.

Funding agency: Fundació La Marató de TV3

Duration: 2017-2019

Lead Researcher: Yolanda Silva

Theses

Title: Relació entre el flux a l'artèria cerebral mitja i la pressió a l'artèria carotídea interna durant l'endarterectomia carotídea.

Doctoral student: Patrícia Rodríguez Cabeza

Thesis director: Joaquín Serena / Yolanda Silva

University: University of Girona

Faculty/school: School of Medicine

Date: 03/10/2017

Medical imaging

Group members

Group leader

Salvador Pedraza

Established researchers

Josep Puig

Post-doctoral researchers

Gerard Blasco

Technicians

Carles Biarnés

Marian Marti



Overview

The main objectives of the research group of Medical Imaging are:

- Validation of Imaging Biomarkers
- Validation of cerebral connectivity as prognostic biomarker in stroke patients
- Validation of Imaging Biomarkers related to healthy aging
- Population studies

Research topics

The research lines of the group are:

- Validation of DTI to predict the clinical outcome of stroke patients
- Validation of DTI in the determination of time of evolution of acute wake-up stroke
- Validation of DWI-FLAIR mismatch in the clinical management of patients with wake-up stroke
- Validation of Perfusion CT in the clinical management of patients with acute stroke
- Validation of Perfusion CT in the clinical management of patients with acute cerebral hematoma
- Validation of MR biomarkers to predict the clinical outcome of stroke patients
- Validation of MRI contrast to determine real extension of brain tumors
- Validation of MR biomarkers to predict the clinical outcome of patients with obesity

Publications

Originals:

Puig J, Blasco G, Daunis-I-Estadella P, van Eendendburg C, Carrillo-García M, Aboud C et al. High-permeability region size on perfusion CT predicts hemorrhagic transformation after intravenous thrombolysis in stroke. *PLoS One*. 2017 Nov 28;12(11):e0188238.

Moreno-Navarrete JM, Blasco G, Puig J, Biarnés C, Rivero M, Gich J et al. Neuroinflammation in obesity: circulating lipopolysaccharide-binding protein associates with brain structure and cognitive performance. *Int J Obes (Lond)*. 2017 Nov;41(11):1627-1635.

Thomalla G, Boutitie F, Fiebach JB, Simonsen CZ, Nighoghossian N, Pedraza S et al. Effect of informed consent on patient characteristics in a stroke thrombolysis trial. *Neurology*. 2017 Sep 26;89(13):1400-1407.

Codina J, Gelabert A, Casellas M, Preciado Borreguero D, Huetas C et al. Percutaneous Plastic Stent Insertion for Treatment of Disconnected Pancreatic Duct. *J Vasc Interv Radiol*. 2017 Aug;28(8):1203-1205.

Blasco G, Moreno-Navarrete JM, Rivero M, Pérez-Brocal V, Garre-Olmo J, Puig J et al. The Gut Metagenome Changes in Parallel to Waist Circumference, Brain Iron Deposition, and Cognitive Function. *J Clin Endocrinol Metab*. 2017 Aug 1;102(8):2962-2973.

Thomalla G, Boutitie F, Fiebach JB, Simonsen CZ, Nighoghossian N, Pedraza S et al. Stroke With Unknown Time of Symptom Onset: Baseline Clinical and Magnetic Resonance Imaging Data of the First Thousand Patients in WAKE-UP (Efficacy and Safety of MRI-Based Thrombolysis in Wake-Up Stroke: A Randomized, Doubleblind, Placebo-Controlled Trial). *Stroke*. 2017 Mar;48(3):770-773.

Engedal TS, Hjort N, Hougaard KD, Simonsen CZ, Andersen G, Mikkelsen IK et al. Transit time homogenization in ischemic stroke - A novel biomarker of penumbral microvascular failure? *J Cereb Blood Flow Metab*. 2017 Jan 1;271678X17721666.

Makris N, Chamard L, Mikkelsen IK, Hermier M, Derex L, Pedraza S et al. Acute reperfusion without recanalization: Serial assessment of collaterals within 6h of using perfusion-weighted magnetic resonance imaging. *J Cereb Blood Flow Metab*. 2017 Jan 1;271678X17744716.

Moreno-Navarrete JM, Moreno M, Puig J, Blasco G, Ortega F, Xifra G et al. Hepatic iron content is independently associated with serum hepcidin levels in subjects with obesity. *Clinical Nutrition*. Elsevier, 10/2017

Hernández-Pérez M, Bos D, Dorado L, Pellikaan K, Vernooij MW, López-Cancio E et al. Intracranial Carotid Artery Calcification Relates to Recanalization and Clinical Outcome After Mechanical Thrombectomy. *Stroke*. 2017;48(2):342-347.

Balaña C, Capellades J, Pineda E, Estival A, Puig J, Domenech S et al. Pseudoprogession as an adverse event of glioblastoma therapy. *Cancer Med*. 2017 Dec;6(12):2858-2866.

Puig J, Blasco G, Schlaug G, Stinear CM, Daunis-I-Estadella P et al. Diffusion tensor imaging as a prognostic biomarker for motor recovery and rehabilitation after stroke. *Neuroradiology*. 2017 Apr;59(4):343-351.

Munuera J, Blasco G, Hernández-Pérez M, Daunis-I-Estadella P, Dávalos A, Liebeskind DS et al. Venous imaging-based biomarkers in acute ischaemic stroke. *J Neurol Neurosurg Psychiatry*. 2017 Jan;88(1):62-69.

Current grants

Project: Development of imaging biomarkers to predict long-term functional outcome in acute stroke patients based on structural and functional connectivity

Funding agency: Instituto de Salud Carlos III

Duration: 2014-2017

Lead Researcher: Salvador Pedraza

Project: Imagenoma de l'Envelliment (SLT002/16/00250). Aging Imageomics Study': An observational population study in adult subjects 50 years of age or older in the province of Girona to develop advanced imaging biomarkers based on whole-body magnetic resonance imaging associated with aging and its relation with biopsychosocial, metabolomics, lipidomics and microbiomics characteristics

Funding agency: Pla estratègic de recerca i innovació en salut (PERIS) 2016. Departament de Salut, Generalitat de Catalunya

Duration: 2017-2019

Lead Researcher: Josep Puig

Project: Validación y desarrollo de un laboratorio de simulación virtual "MEDGAME" para entrenar a estudiantes de Medicina en el manejo de urgencias radiológicas agudas

Funding agency: SERAM

Duration: 2014-2017

Lead Researcher: Salvador Pedraza

Project: BRAIN-CONNECTS': MRI Biomarkers of Brain Connectivity during Stroke Recovery and Rehabilitation

Funding agency: La Marató TV3 Foundation

Duration: 2017-2019

Lead Researcher: Josep Puig

Project: Nuevas tecnologías aplicables a la práctica clínica para la obtención de biomarcadores de atrofia y de lesiones en imágenes de resonancia magnética de pacientes con esclerosis múltiples (BiomarkEM-cat)

Funding agency: La Marató TV3 Foundation

Duration: 2014-2017

Lead Researcher: Kai Vilanova

Mental health and epidemiology actions, prevention and results

Group members

Group leaders

Jordi Cid

Post-doctorate researchers

Doménec Serrano

Jordi Font

Medical researchers

Rene Morgan

Pre-doctorate researchers

Angels Deu

Meritxell Beltran

Laura Masferrer

Eduard Palomer

Nursing Staff

Miriam Broncano

Overview

This group is working to consolidate the Mental Health and Addictions Network as a reference in mental health research referent in the next five years, in the following three 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.

Research topics

Main research lines:

The research lines are focused on:

1. Results on Health and health economics
 - Evaluation of attention patterns in the Attention Deficit Disorder. Project together with UIC-Salut Mental Catalunya-SM IDIBGI
2. Early intervention in Psicosis:
 - Evaluation of subjective discomfort in schizophrenia: Validation and viability of PRE Scale in Spain. Study PRE-España. Financed by: Ministerio de Sanidad, Servicios Sociales e Igualdad. Project code: PI16/00647
 - INNOBRAIN: New technologies for Innovation in Rehabilitation and Cognitive Stimulation. Comunitat RIS3CAT: Project Number: 6
3. Patient Promotion, Prevention and Safety
 - Promotion, suicide prevention in patients addicted to psychoactive substances

Publications

Originals:

Gutiérrez-Colosía, M. R., Salvador-Carulla, L., Salinas-Pérez, J. A., García-Alonso, C. R., Cid, J., Salazzari, D., ... & Kalseth, J. (2017). Standard comparison of local mental health care systems in eight European countries. *Epidemiology and psychiatric sciences*, 1-14.

Ochoa S, López-Carrilero R, Barrigón ML, Pousa E, Barajas A, Lorente-Rovira E, González-Higueras F, Grasa E, Ruiz-Delgado I, Cid J, Birulés I, Esteban-Pinos I, Casañas R, Luengo A, Torres-Hernández P, Corripio I, Montes-Gámez M, Beltran M, De Apraiz A, Domínguez-Sánchez L, Sánchez E, Llacer B, Pélaez T, Bogas JL, Moritz S; Spanish Metacognition Study Group. Randomized control trial to assess the efficacy of metacognitive training compared with a psycho-educational group in people with a recent-onset psychosis. *Psychol Med*. 2017 Jul;47(9):1573-1584.

Lahera, G., Cid, J., González-Pinto, A., Cabrera, A., González, I., Vieta, E., ... & Crespo-Facorro, B. (2017). Needs of people with schizophrenia/psychosis and their caregivers: A large scale survey. *European Psychiatry*, 41, S97.

Masferrer L, Caparrós B. Risk of Suicide and Dysfunctional Patterns of Personality among Bereaved Substance Users. *Int J Environ Res Public Health*. 2017 Mar 20;14(3).

Masferrer L, Garre-Olmo J, Caparrós B. Factor structure and concurrent construct validity of ICG among bereaved substance users. *Actas Esp Psiquiatr*. 2017 Mar;45(2):47-55.

Masferrer L, Garre-Olmo J, Caparrós B. Is complicated grief a risk factor for substance use? A comparison of substance-users and normative grievers. *Addiction Research & Theory*. Volume 25, 2017 - Issue 5. Pag. 361-367.

Grants for research in progress

- 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
- Noves technologies per a la innovació en rehabilitació i estimulació cognitiva (COMRD15-1-0017) INNOBRAIN. Funding Agency: ACCIO. Duration: 2017-2019

Neurodegeneration and neuroinflammation

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

redEspañolade
esclerosismúltiple

Group members

Group leader

Lluís Ramió i Torrentà

Post-doctoral researchers

René Robles

Jordi Tomàs

Jordi Gich

Ester Quintana

Pre-doctorate researchers

María Muñoz

Clàudia Coll

Naiara Celarain

Judit Salavedra

Medical researchers

Héctor Perkal

Joan Carles Vilanova

Imma Pericot

Héctor Perkal

Joan Carles Vilanova

Imma Pericot

Berta Solano

Antoni Turón

Berta Alemany

Technicians

Imma Gómez

Natália González

Veronica Cruz

Miguel Merchan

Dagmar Keller

Marina González

Míriam Broncano

Support

Pepi López

Cristina Ridao

Mireia Montserrat



Overview

Our multidisciplinary research group is made by neurologists, neuropsychologists, radiologists, lab personal, nurses and office personal with common aim of giving responses to each challenge that MS could give us. We are involved in several clinical studies (clinical trials, epidemiologic studies) and in basic research (genetic and epigenetic factors, biomarkers, cognitive rehabilitation, rare clinical phenotypes).

Research topics

Priority clinical research lines:

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. Improve the clinical data collection by developing of a multiparametric, multidisciplinary database for multiple sclerosis
6. Application of Deep Learning technique as a new brain MRI analyzer to generate prognosis markers in multiple sclerosis
8. Shared decisions, expert patient empowerment and patient with multiple sclerosis

Priority lines in basic research:

1. Study of epigenetic factors in multiple sclerosis
2. Study of miRNA pattern expression in different clinical subtype
3. Study of the relation between viruses miRNAs and multiple sclerosis
4. Study of pattern methylation in multiple sclerosis
5. Genetic studies in familial multiple sclerosis
6. 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)
7. Determination of biological response factors (genetic and biochemical) to immunomodulatory treatments in multiple sclerosis
8. Microbiota in multiple sclerosis and other neurodegenerative diseases.

Bank of DNA, CSF and serum samples of neuroimmunological diseases and control subjects

Publications

Originals:

Quintana E, Ortega FJ, Robles-Cedeño R, Villar ML, Buxó M, Mercader JM, Alvarez-Cermeño JC, Pueyo N, Perkal H, Fernández-Real JM, Ramió-Torrentà L. miRNAs in cerebrospinal fluid identify patients with MS and specifically those with lipid-specific oligoclonal IgM bands. *Mult Scler*. 2017 Nov;23(13):1716-1726.

Moreno-Navarrete JM, Blasco G, Puig J, Biarnés C, Rivero M, Gich J, Fernández-Aranda F, Garre-Olmo J, Ramió-Torrentà L, Alberich-Bayarri Á, García-Castro F, Pedraza S, Ricart W, Fernández-Real JM. Neuroinflammation in obesity: circulating lipopolysaccharide-binding protein associates with brain structure and cognitive performance. *Int J Obes (Lond)*. 2017 Nov;41(11):1627-1635.

Sepúlveda M, Aldea M, Escudero D, Llufríu S, Arrambide G, Otero-Romero S, Sastre-Garriga J, Romero-Pinel L, Martínez-Yélamos S, Sola-Valls N, Armangué T, Sotoca J, Escartín A, Robles-Cedeño R, Ramió-Torrentà L, Presas-Rodríguez S, Ramo-Tello C, Munteis E, Pelayo R, Gubieras L, Brieva L, Ortiz N, Hervás M, Mañé-Martínez MA, Cano A, Vela E, Tintoré M, Blanco Y, Montalban X, Graus F, Saiz A. Epidemiology of NMOSD in Catalonia: Influence of the new 2015 criteria in incidence and prevalence estimates. *Mult Scler*. 2017 Oct 1;1352458517735191.

Valverde S, Cabezas M, Roura E, González-Villà S, Pareto D, Vilanova JC, Ramió-Torrentà L, Rovira À, Oliver A, Lladó X. Improving automated multiple sclerosis lesion segmentation with a cascaded 3D convolutional neural network approach. *Neuroimage*. 2017 Jul 15;155:159-168.

González-Villà S, Valverde S, Cabezas M, Pareto D, Vilanova JC, Ramió-Torrentà L, Rovira À, Oliver A, Lladó X. Evaluating the effect of multiple sclerosis lesions on automatic brain structure segmentation. *Neuroimage Clin*. 2017 May 8;15:228-238.

Valverde S, Oliver A, Roura E, González-Villà S, Pareto D, Vilanova JC, Ramió-Torrentà L, Rovira À, Lladó X. Automated tissue segmentation of MR brain images in the presence of white matter lesions. *Med Image Anal*. 2017 Jan;35:446-457.

Hauser SL, Bar-Or A, Comi G, Giovannoni G, Hartung HP, Hemmer B, Lublin F, Montalban X, Rammohan KW, Selmaj K, Traboulsee A, Wolinsky JS, Arnold DL, Klingelschmitt G, Masterman D, Fontoura P, Belachew S, Chin P, Mairon N, Garren H, Kappos L; OPERA I and OPERA II Clinical Investigators. Ocrelizumab versus Interferon Beta-1a in Relapsing Multiple

Sclerosis. *N Engl J Med*. 2017 Jan 19;376(3):221-234.
Montalban X, Hauser SL, Kappos L, Arnold DL, Bar-Or A, Comi G, de Seze J, Giovannoni G, Hartung HP, Hemmer B, Lublin F, Rammohan KW, Selmaj K, Traboulsee A, Sauter A, Masterman D, Fontoura P, Belachew S, Garren H, Mairon N, Chin P, Wolinsky JS; ORATORIO Clinical Investigators. Ocrelizumab versus Placebo in Primary Progressive Multiple Sclerosis. *N Engl J Med*. 2017 Jan 19;376(3):209-220.

Fernandez O, Oterino A, Oreja-Guevara C, Prieto JM, Mendibe-Bilbao MM, Garcia-Merino JA, Ramio-Torrenta L, Ginestal R, Meca-Lallana JE, Romero-Pinel L, Munoz D, Oliva-Nacarino P, Calles-Hernandez MC, Izquierdo G, Martinez-Gines ML, Saiz A, Comabella M, Casanova-Estruch B, Brieva L, Arroyo R, Rodriguez-Antiguedad A. Review of the novelties from the 32nd ECTRIMS Congress, 2016, presented at the 9th Post-ECTRIMS Meeting (I). *Rev Neurol*. 2017 Jul 1;65(1):31-40.

Fernandez O, Oterino A, Oreja-Guevara C, Prieto JM, Mendibe-Bilbao MM, Garcia-Merino JA, Ramio-Torrenta L, Ginestal R, Meca-Lallana JE, Romero-Pinel L, Munoz D, Oliva-Nacarino P, Calles-Hernandez MC, Izquierdo G, Martinez-Gines ML, Saiz A, Comabella M, Casanova-Estruch B, Brieva L, Arroyo R, Rodriguez-Antiguedad A. Review of the novelties from the 32nd ECTRIMS Congress, 2016, presented at the 9th Post-ECTRIMS Meeting (II). *Rev Neurol*. 2017 Jul 16;65(2):75-84.

Turró-Garriga O, Calvó-Perxas L, Vilalta-Franch J, Hernández-Ferrándiz M, Flaqué M, Linares M, Culléll M, Gich J, Casas I, Perkal H, Garre-Olmo J; Registry of Dementia of Girona Study Group (ReDeGi Study Group). Adherence to Clinical Practice Guidelines during Dementia Work-Up in a Real-World Setting: A Study from the Registry of Dementias of Girona. *J Alzheimers Dis*. 2017;59(3):997-1007.

Calvó-Perxas L, Turró-Garriga O, Vilalta-Franch J, Lozano-Gallego M, de Eugenio R, Márquez F, Carmona O, Gich J, Manzano A, Viñas M, Roig AM, Garre-Olmo J; Registry of Dementias of Girona Study Group (ReDeGi Study Group). Trends in the Prescription and Long-Term Utilization of Antidementia Drugs Among Patients with Alzheimer's Disease in Spain: A Cohort Study Using the Registry of Dementias of Girona. *Drugs Aging*. 2017 Apr;34(4):303-310.

Blasco G, Moreno-Navarrete JM, Rivero M, Pérez-Brocal V, Garre-Olmo J, Puig J, Daunis-I-Estadella P, Biarnés C, Gich J, Fernández-Aranda F, Alberich-Bayarri Á, Moya A, Pedraza S, Ricart W, López M, Portero-Otin M, Fernandez-Real JM. The Gut Metagenome Changes in Parallel to Waist Circumference, Brain Iron Deposition, and Cognitive Function. *J Clin Endocrinol Metab*. 2017 Aug 1;102(8):2962-2973.

Tomas-Roig J, Benito E, Agis-Balboa RC, Piscitelli F, Hoyer-Fender S, Di Marzo V, Havemann-Reinecke U. Chronic exposure to cannabinoids during adolescence causes long-lasting behavioral deficits in adult mice. *Addict Biol*. 2017 Nov;22(6):1778-1789.

Garcia Bennett J, Vilanova JC, Gumà Padró J, Parada D, Conejero A. Evaluation of MR imaging-targeted biopsies of the prostate in biopsy-naïve patients. A single centre study. *Diagn Interv Imaging*. 2017 Oct;98(10):677-684.

Catalá V, Vilanova JC, Gaya JM, Algaba F, Martí T. Multiparametric magnetic resonance imaging and prostate cancer: what's new? *Radiologia*. 2017 May - Jun;59(3):196-208.

Martín Noguerol T, Luna Alcalá A, Beltrán LS, Gómez Cabrera M, Broncano M, Cabrero J, Vilanova JC. Advanced MR Imaging Techniques for Differentiation of Neuropathic Arthropathy and Osteomyelitis in the Diabetic Foot. *Radiographics*. 2017 Jul-Aug;37(4):1161-1180.

Vilanova JC, Catalá V. Magnetic resonance imaging in the new paradigm for the diagnosis of prostate cancer. *Radiologia*. 2017 Mar - Apr;59(2):94-99.

Gich, J., Coll-Martínez, C., Salavedra-Pont, J., Ramió-Torrentà LI (2017). Nuevas tecnologías en la rehabilitación cognitiva. En G. Izquierdo Ayuso, Monografías en Esclerosis Múltiple: Impacto de Internet y las TIC en la esclerosis múltiple. España: Ambos Marketing Services.

Book chapters:

Vanhoenacker FM, Parizel PM, Gielen JL. Imaging of Soft Tissue Tumors. Vilanova JC. Cap 11. WHO Classification of Soft Tissue Tumors. Switzerland. Springer International Publishing. 2017. P 187-195.

Vilanova JC, Catalá V, Algaba F, Laucirica O. Atlas of Multiparametric Prostate MRI - With PI-RADS. Berlin. Springer. 2017. P. 156.

Gich, J., Coll-Martínez, C., Salavedra-Pont, J., Ramió-Torrentà LI (2017). Nuevas tecnologías en la rehabilitación cognitiva. En G. Izquierdo Ayuso, Monografías en Esclerosis Múltiple: Impacto de Internet y las TIC en la esclerosis múltiple. España: Ambos Marketing Services.

Current grants

Project: Estudio de metiloma completo en células de sistema inmune de pacientes con esclerosis múltiple (PI16/O1140)

Funding agency: Instituto de Salud Carlos III

Duration: 2016-2019

Lead Researcher: Lluís Ramió Torrentà

Project: A methylome-wide study of immune cells in relapsing-remitting multiple sclerosis

Funding agency: Deutsche Forschungsgemeinschaft (DFG) (private company)

Duration: 2017-2019

Lead Researcher: Lluís Ramió Torrentà

Project: Influencia del virus Epstein-barr en el risc de patir una malaltia autoimmune com l'esclerosis múltiple

Funding agency: FRISELVA (private company)

Duration: 2017

Lead Researcher: Lluís Ramió Torrentà

Project: Determinación del patrón de miRNAs en líquido cefalorraquídeo y suero de pacientes con esclerosis múltiple. Asociación con otros biomarcadores.

Funding agency: Fundación Salud 200

Duration: 2015-2017

Lead Researcher: Lluís Ramió Torrentà

Project: 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 esclerosis múltiple (BiomarkEM.cat)

Funding agency: La Marató TV3 Foundation

Duration: 2015-2017

Lead Researcher: Lluís Ramió Torrentà

Project: Papel de los miRNA en la esclerosis múltiple. Estudios de miRNAs en líquido cefalorraquídeo específicos para cada uno de los subtipos clínicos y de la respuesta a tratamiento

Funding agency: AGAUR

Duration: 2017

Lead Researcher: Lluís Ramió Torrentà



ONCOLOGY AND HEMATOLOGY AREA

CHROMOSOME REPLICATION

DESCRIPTIVE EPIDEMIOLOGY, GENETICS AND CANCER PREVENTION

HEMATOLOGY

HEPATOBIILIARY & PANCREATIC SURGERY AND ONCOLOGY

METABOLISM AND CANCER GROUP

Chromosome replication

Group members

Group leader

Jordi Frigola Mas

Pre-doctoral researchers

Marina Guerrero



Overview

DNA replication is an essential process to living organisms. Faithfull genome duplication ensures genome stability and it contributes to pass genetic information from generation to generation. Errors during this process lead to cancer. Our laboratory is interested in understanding, at a molecular level, how the replication machinery (known as replisome) works in yeast and human cells. If we understand how the replisome works, we not only find out what goes wrong during cancer development but also we would be able to design new cancer treatments.

Research topics

Find out how the helicase is recruited and activated during chromosome replication.

Develop new ways to stop cell proliferation without inducing DNA damage (one of the main limitations of the current cancer treatments).

Study how chromosome termination occurs.

Publications

Cdt1 stabilizes an open MCM ring for helicase loading. Frigola J, He J, Kinkelin K, Pye VE, Renault L, Douglas ME, Remus D, Cherepanov P, Costa A, Diffley JFX. Nat Commun. 2017 Jun 23;8:15720. doi: 10.1038/ncomms15720

Current grants

Project: BFU2016-79927-P

Funding agency: MINECO

Duration: 2016-2019

Coordinator: Jordi Frigola

Leader Researcher: Jordi Frigola

Partner groups

Dr. Narcis Fernandez Fuentes
Universitat de Vic.

Descriptive epidemiology, genetics and cancer prevention

Team involved in “Centro de Investigación Biomédica en Red Epidemiológica y Salud pública” (CIBERESP)

Member of the steering committee: EUROCARE

Member of the steering committee: Spanish cancer registries

Group members

Group leader

Rafael Marcos-Gragera

Post-doctoral researchers

Gemma Osca

Pre-doctoral researchers

Gemma Osca

Marta Solans

Medical researchers

Carme Carmona

Rafael Fuentes

Sónia del Barco

Angel Izquierdo

Neus Vilar

Jordi Rubió

Loreto Vilardell

Adelaida García

Maria Aranzazu Eraso

Technicians

Joana Fuentes

Aina Roca

Anna Vidal

Raquel Comas

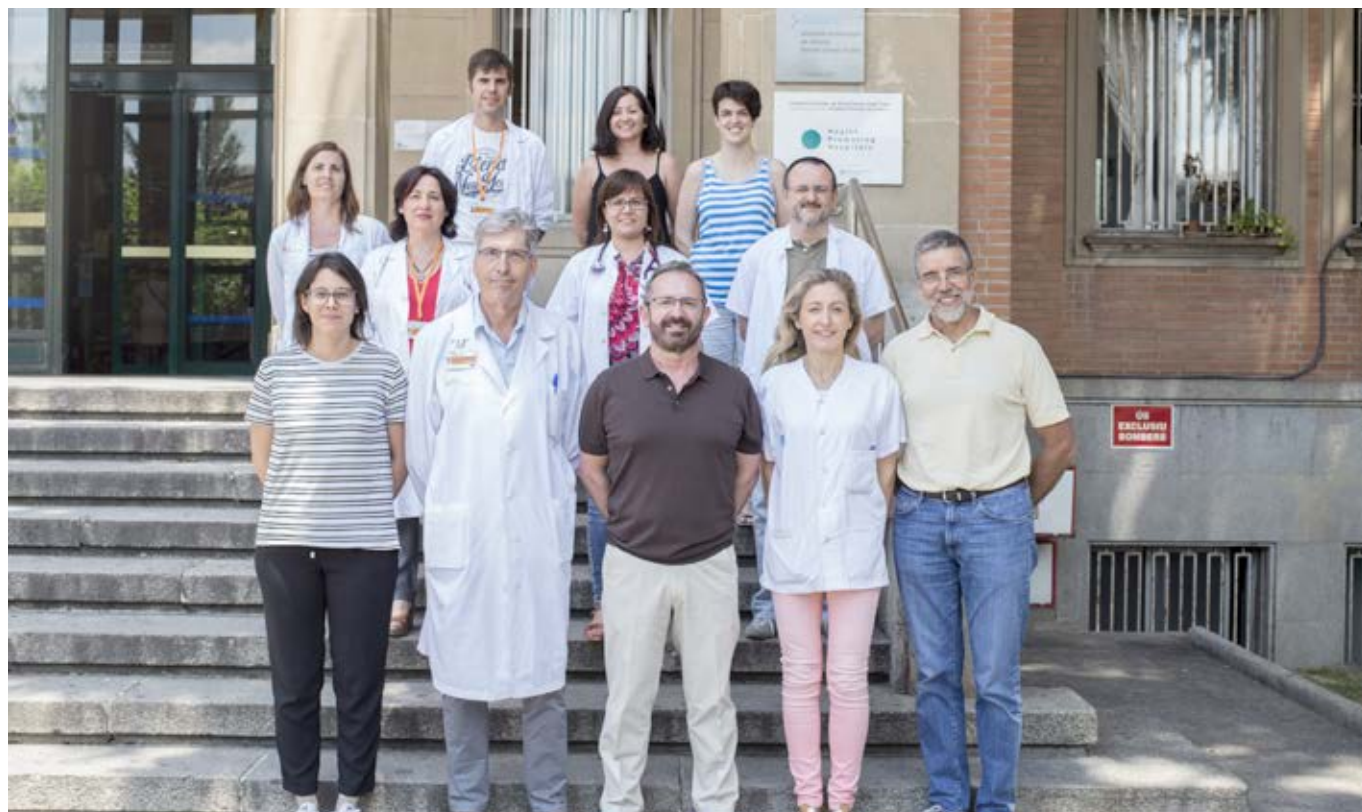
Martí Rispau

Support

Montse Puigdemont

Montse Puig

Bernat Serdà



Overview

The Descriptive Epidemiology, Genetics and Cancer prevention group is made up of a multidisciplinary group including epidemiologists, statisticians, oncologists, radiotherapists, physical therapist, dermatologist; biologist, nurse and medical documentalists, biologist. The group main focus is cancer epidemiology (descriptive and analytical), cancer prevention and genetic.

The group takes part in numerous national and international collaborations:

- La Red Española de Registros de Cáncer (REDECAN)
- Cancer Incidence in Five Continents (CI5)
- International Incidence of Childhood Cancer (IICC)
- The European Network of Cancer Registries (ENCR)
- European Cancer Information System (ECIS)
- European Cancer Registry based study on survival and care of cancer patients (EUROCARE) (member of the Steering Committee)
- RARECARENet project
- Global surveillance of cancer survival (CONCORD programme)
- EUPancreas. COST Action-BM1204-
- Multicentre case-control studies:
 - MCC Spain
 - International Lymphoma Epidemiology Consortium (InterLymph)

Research topics

Descriptive and analytical epidemiology of cancer

Population-based cancer registry in the province of Girona (national and international collaborations)

- To monitor the cancer burden (incidence, prevalence and survival) and its evolution in Girona, Spain, Europe and worldwide
- To provide a basis for research on cancer causes
- Aetiological studies of chronic lymphocytic leukaemia (CLL) and breast cancer
- Study of the genetic and molecular prognosis factors in breast cancer and haematological tumours
- Study of the genetic and environmental risk factors in breast cancer and chronic lymphocytic leukaemia
- Studies of infectious, genetic and environmental risk factors linked to the development of lymphomas
- Genetic susceptibility and the interaction between genes and environment. The study of the interaction of environmental factors with genetic factors is a key part of aetiopathogenesis

Cancer prevention

- Primary prevention
 - Evaluation of the efficacy of vaccination against the human papilloma virus
- Secondary prevention
 - Evaluation of the organized breast cancer detection program:
 - Benefits and adverse effects of breast cancer detection: a method to improve the measurement of the results of early detection
 - Evaluation of the rate of interval of cancer and its determinants in the program of early detection of breast cancer at the province of Girona
- Screening and prevention of cervical cancer.
 - Evaluation of the program of timely detection of cervical cancer:
 - Determination of the sensitivity and specificity of cervical cytology
- Tertiary prevention
 - Tertiary prevention in cancer care: the use of treatment and rehabilitation programmes to improve the outcome of illness among affected individuals
 - To design strategic rehabilitation programmes improve Quality of Life in cancer patients
 - To design and implement rehabilitation programmes based on epidemiological knowledge
 - To maintain strategic and collaborative links with rehabilitation cancer research programmes
 - To improve the quality of survival in older cancer population based on multimodal rehabilitation programmes
 - To generate knowledge on cancer recovery and Quality of Life by conducting, assisting and evaluating innovative, internationally competitive, public health programs
 - To form and maintain strategic and collaborative links with cancer research / control programs and related institutions nationally and internationally

Genetics (Genetic Epidemiology of Cancer)

- Evaluation of the risk of developing cancer
- Study of the genetic risk factors for cancer
- Genetic susceptibility to cancer

Publications

Case Report:

Sais E & Del Barco S. A case report of a patient with HER2-positive metastatic breast cancer on dialysis, who responded to ado-trastuzumab emtansine. *Revista: Annals of Clinical Case Reports*.

Originals:

Castelló A, Boldo E, Pérez-Gómez B, Lope V, Altzibar JM, Martín V, Castaño-Vinyals G, Guevara M, Dierssen-Sotos T, Tardón A, Moreno V, Puig-Vives M, Llorens-Ivorra C, Alguacil J, Gómez-Acebo I, Castilla J, Gràcia-Lavedán E, Dávila-Batista V, Kogevinas M, Aragonés N, Amiano P, Pollán M. Adherence to the Western, Prudent and Mediterranean dietary patterns and breast cancer risk: MCC-Spain study. *Maturitas*. 2017 Sep;103:8-15.

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Izquierdo A, Jakubowska A, James P, Janavicius R, Jernetz M, Jensen A, Jensen UB, John EM, Johnatty S, Jones ME, Kannisto P, Karlan BY, Karnezis A, Kast K; KConFab Investigators, Kennedy CJ, Khusnutdinova E, Kiemeny LA, Kiiski JI, Kim SW, Kjaer SK, Köbel M, Kopperud RK, Kruse TA, Kupryjanczyk J, Kwong A, Laitman Y, Lambrechts D, Larrañaga N, Larson MC, Lazaro C, Le ND, Le Marchand L, Lee JW, Lele SB, Leminen A, Leroux D, Lester J, Lesueur F, Levine DA, Liang D, Liebrich C, Lilyquist J, Lipworth L, Lissowska J, Lu KH, Lubinski J, Luccarini C, Lundvall L, Mai PL, Mendoza-Fandiño G, Manoukian S, Massuger LFAG, May T, Mazoyer S, McAlpine JN, McGuire V, McLaughlin JR, McNeish I, Meijers-Heijboer H, Meindl A, Menon U, Mensenkamp AR, Merritt MA, Milne RL, Mitchell G, Modugno F, Moes-Sosnowska J, Moffitt M, Montagna M, Moysich KB, Mulligan AM, Musinsky J, Nathanson KL, Nedergaard L, Ness RB, Neuhausen SL, Nevanlinna H, Niederacher D, Nussbaum RL, Odunsi K, Olah E, Olopade OI, Olsson H, Olswold C, O'Malley DM, Ong KR, Onland-Moret NC; OPAL study group, Orr N, Orsulic S, Osorio A, Palli D, Papi L, Park-Simon TW, Paul J, Pearce CL, Pedersen IS, Peeters PHM, Peissel B, Peixoto A, Pejovic T, Pelttari LM, Permut JB, Peterlongo P, Pezzani L, Pfeiler G, Phillips KA, Piedmonte M, Pike MC, Piskorz AM, Poblete SR, Poca T, Poole EM, Poppe B, Porteous ME, Prieur F, Prokofyeva D, Pugh E, Pujana MA, Pujol P, Radice P, Rantala J, Rappaport-Fuerhauser C, Rennert G, Rhiem K, Rice P, Richardson A, Robson M, Rodriguez GC, Rodríguez-Antona C, Romm J, Rookus MA, Rossing MA,

Rothstein JH, Rudolph A, Runnebaum IB, Salvesen HB, Sandler DP, Schoemaker MJ, Senter L, Setiawan VW, Severi G, Sharma P, Sheldford T, Siddiqui N, Side LE, Sieh W, Singer CF, Sobol H, Song H, Southey MC, Spurdle AB, Stadler Z, Steinemann D, Stoppa-Lyonnet D, Sucheston-Campbell LE, Sukiennicki G, Sutphen R, Sutter C, Swerdlow AJ, Szabo CI, Szafron L, Tan YY, Taylor JA, Tea MK, Teixeira MR, Teo SH, Terry KL, Thompson PJ, Thomsen LCV, Thull DL, Tihomirova L, Tinker AV, Tischkowitz M, Tognazzo S, Toland AE, Tone A, Trabert B, Travis RC, Trichopoulou A, Tung N, Tworoger SS, van Altena AM, Van Den Berg D, van der Hout AH, van der Luijt RB, Van Heetvelde M, Van Nieuwenhuysen E, van Rensburg EJ, Vanderstichele A, Varon-Mateeva R, Vega A, Edwards DV, Vergote I, Vierkant RA, Vijai J, Vratimos A, Walker L, Walsh C, Wand D, Wang-Gohrke S, Wappenschmidt B, Webb PM, Weinberg CR, Weitzel JN, Wentzensen N, Whittemore AS, Wijnen JT, Wilkens LR, Wolk A, Woo M, Wu X, Wu AH, Yang H, Yannoukakos D, Ziogas A, Zorn KK, Narod SA, Easton DF, Amos CI, Schildkraut JM, Ramus SJ, Ottini L, Goodman MT, Park SK, Kelemen LE, Risch HA, Thomassen M, Offit K, Simard J, Schmutzler RK, Hazelett D, Monteiro AN,

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Rodríguez A, Algara M, Monge D, López-Torrecilla J, Caballero F, Morera R, Escó R, Pérez-Montero H, Ferrer C, Lara PC; Spanish society of Oncology and radiotherapy (SEOR) Analysis Group (Eraso A) Infrastructure and equipment for radiation oncology in the Spanish National Health System: analysis of external beam radiotherapy 2015-2020. *Clin Transl Oncol.* 2017 Aug 3.

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Book chapters / Book:

Josep Maria Borràs; Angel Izquierdo; Loreto Vilardell; Rafael Marcos-Gragera; Josepa Ribes; Jordi Gálvez; Laura Esteban (2017). Cancer Incidence in Girona (2008-2012). In: Bray F, Colombet M, Mery L, Piñeros M, Znaor A, Zanetti R and Ferlay J, editors Cancer Incidence in Five Continents, Vol. XI (electronic version). Lyon: International Agency for Research on Cancer. Available from: <http://ci5.iarc.fr>, accessed [16 de gener de 2018].

Sonia Del Barco Berron. Tratamiento de primera línea con Nfulestrant en paciente que presenta recidiva de la enfermedad antes de un año tras haber finalizado el tratamiento adyuvante con hormonoterapia. ARCHIVOS CLINICOS DE CANCER DE MAMA VOL.4 , 2017.Ed. YOU& US, S.A 2017: ISBN 978-84-946485-4-0.

Helena Pla Juher, Anna Carbó, Walter Carbajal Ochoa, Raquel Liñán Planas, Claudia Fina. SUPERVISIÓN: Sonia Del Barco Berron. Comprensión medular por metástasis endomédulas de un glioblastoma de células gigantes. Concurso + mir de Casos Clínicos para Residentes de Oncología Médica 2017,ISBN: 978-84-7989-748-2 .

Pere Soler Masó, Anna Planas Lladó, Bernat-Carles Serdà Ferrer. La educación para la salud como elemento clave en el desarrollo humano.

Current grants

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

Funding agency: Instituto de Salud Carlos III

Duration: 2016-2018

Lead Researcher: Rafael Marcos-Gragera

Collaborator researcher: Loreto Vilardell, Marta Solans, Gemma Osca

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

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: Ramón Clèries

Collaborator researcher: Angel Izquierdo

Project: Highcare: High resolution project on prognosis and care of cancer patients (AC14/00036)

Funding agency: ERA-NET on Translational Cancer Research- Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: Rafael Marcos-Gragera- Maria José Sánchez

Project: Ajuts complementaris per a la mobilitat d'investigadors de la UdG (MOB2017)

Funding agency: Universitat de Girona (UdG)

Duration: 15/02/2018-15/05/2018

Lead Researcher: Bernat- Carles Serdà

Project: Grup d'Estudi de les Neoplàsies Hematològiques de Girona (2017-SGR-733)

Funding agency: Agència de Gestió d'Ajuts Universitaris i Recerca (AGAUR)

Duration: 2018-2020

Leader Researcher: Rafael Marcos-Gragera- David Gallardo

Project: Implications of medical low dose radiation exposure (MEDIRAD)

Funding agency: European Commission - Horizon 2020, Call NFRP-2016-2017

Duration: 2014-2018

Lead Researcher: Arantxa Eraso

Project: "Impacto poblacional de las nuevas pautas diagnósticas y terapéuticas en la supervivencia del cáncer de páncreas en la provincia de Girona y su asociación pronóstica con mutaciones somáticas de genes reparadores.

Funding agency: Ayudas a proyectos de investigación del Servicio de Oncología Médica del ICO-Girona, convocatoria interna.

Duration: 2017

Coordinator- Lead Researcher: Adelaida García-Velasco

Project: COST Actions

Funding agency: European cooperation in science & Technology

Duration: 2017

Coordinator: Núria Malats

Lead Researcher: Adelaida García-Velasco, Rafael Marcos-Gragera

Awards

Title: BECA AEPCC-Investiga Xavier Castells Sagué 2017. Asociación Española de Patología Cervical y colposcopia.

Institution: XXIX Congreso de la AEPCC.

Awardee/s: Rafael Marcos-Gragera; María Brotons

Date: 23-25 de Novembre.

Other: Logroño (España)

Title: INEQUITIES IN HEALTH: Social inequities in the survival of women diagnosed with an invasive breast cancer in the Girona province. (Premi a la millor tesina de l'IdIBGI)

Institution: Universitat de Girona

Awardee/s: Aina Roca Barceló

Date: June 2017

Other: Final Masters project (Master's Program on Health Promotion)

Hematology

Team involved in “Red Temática de Investigación Cooperativa en Cáncer (RTICC)”
Recognised as a consolidated research group

Group members

Group leader

David Gallardo Giralt

Technicians

Rocío Rodríguez

Post-graduate researchers

Nazly Santos

Johana Díaz

Yolanda González

Collaborators

Rosa Coll

Josep M^a Roncero

Esperanza Tuset

Ramon Guardia

Nichollas Kelleher

Natàlia Lloveras



Overview

The Hematology Group works on the biological and clinical factors influencing the outcome of hematological malignancies. The group has been recognized by the Catalan administration as a Consolidated Research Group (SGR2017).

The translational research developed by the group is focused on the biological mismatches that generate graft-versus-host disease after an allogeneic hematopoietic transplant, the genetics pathways and the pharmacogenomics of the acute leukemia and the immunology of multiple myeloma.

The group also carries out clinical research, participating in several clinical trials in different hematological malignancies.

Research topics

1. Immunogenetics of allogeneic stem cell transplantation: minor histocompatibility antigens and costimulatory molecules.
2. Pharmacogenomic study of acute leukemia and its relationship with leukemic relapses.
3. Signal pathways in acute myeloid leukemia.
4. Role of the immune system in the multiple myeloma progression kinetics.
5. Clinical research: clinical trials focused on hematological malignancies.

Publications

Originals:

Paiva B, Puig N, Cedena MT, de Jong BG, Ruiz Y, Rapado I, Martinez-Lopez J, Cordon L, Alignani D, Delgado JA, van Zelm MC, Van Dongen JJ, Pascual M, Agirre X, Prosper F, Martín-Subero JL, Vidriales MB, Gutierrez NC, Hernandez MT, Oriol A, Echeveste MA, Gonzalez Y, Johnson SK, Epstein J, Barlogie B, Morgan GJ, Orfao A, Blade J, Mateos MV, Lahuerta JJ, San-Miguel JF. Differentiation stage of myeloma plasma cells: biological and clinical significance. *Leukemia*. 2017 Feb;31(2):382-392

Gassiot S, Motlló C, Llombart I, Morgades M, González Y, García-Caro M, Ribera JM, Oriol A. Impact of induction treatment before autologous stem cell transplantation on long-term outcome in patients with newly diagnosed multiple myeloma. *Eur J Haematol*. 2017 Jun;98(6):569-576.

Sanchez R, Ayala R, Alonso RA, Martínez MP, Ribera J, García O, Sanchez-Pina J, Mercadal S, Montesinos P, Martino R, Barba P, González-Campos J, Barrios M, Lavilla E, Gil C, Bernal T, Escoda L, Abella E, Amigo ML, Moreno MJ, Bravo P, Guàrdia R, Hernández-Rivas JM, García-Guiñón A, Piernas S, Ribera JM, Martínez-López J. Clinical characteristics of patients with central nervous system relapse in BCR-ABL1-positive acute lymphoblastic leukemia: the importance of characterizing ABL1 mutations in cerebrospinal fluid. *Ann Hematol*. 2017 Jul;96(7):1069-1075

Solans M, Serra L, Renart G, Osca-Gelis G, Comas R, Vilardell L, Gallardo D, Marcos-Gragera R. Incidence and survival of Hodgkin lymphoma patients in Girona (Spain) over three decades: a population-based study. *Eur J Cancer Prev*. 2017 Sep;26 Joining forces for better cancer registration in Europe:S164-S169.

Rosiñol L, Oriol A, Teruel AI, de la Guía AL, Blanchard M, de la Rubia J, Granell M, Sampol M, Palomera L, González Y, Etzebeste M, Martínez-Martínez R, Hernández MT, de Arriba F, Alegre A, Cibeira M, Mateos M, Martínez-López J, Lahuerta JJ, San Miguel J, Bladé J. Bortezomib and thalidomide maintenance after stem cell transplantation for multiple myeloma: a PETHEMA/GEM trial. *Leukemia*. 2017 Sep;31(9):1922-1927

Hyvärinen K, Ritari J, Koskela S, Niittyyuopio R, Nihtinen A, Volin L, Gallardo D, Partanen J. Genetic polymorphism related to monocyte-macrophage function is associated with graft-versus-host disease. *Sci Rep*. 2017 Nov 15;7(1):15666

Ribera JM, Morgades M, Montesinos P, Martino R, Barba P, Soria B, Bermúdez A, Moreno MJ, González-Campos J, Vives S, Gil C, Abella E, Guàrdia R, Martínez-Carballeira D, Martínez-Sánchez P, Amigo ML, Mercadal S, Serrano A, López-Martínez A, Vall-Llovera F, Sánchez-Sánchez MJ, Peñarrubia MJ, Calbacho M, Méndez JA, Bergua J, Cladera A, Tormo M, García-Belmonte D, Feliu E, Ciudad J, Orfao A; PETHEMA Group, Spanish Society of Hematology. Efficacy and safety of native versus pegylated *Escherichia coli* asparaginase for treatment of adults with high-risk, Philadelphia chromosome-negative acute lymphoblastic leukemia. *Leuk Lymphoma*. 2017 Nov 22:1-10.

Ribera J, Zamora L, Morgades M, Mallo M, Solanes N, Batlle M, Vives S, Granada I, Juncà J, Malinverni R, Genescà E, Guàrdia R, Mercadal S, Escoda L, Martínez-Lopez J, Tormo M, Esteve J, Pratcorona M, Martínez-Losada C, Solé F, Feliu E, Ribera JM; Spanish PETHEMA Group and the Spanish Society of Hematology. Copy number profiling of adult relapsed B-cell precursor acute lymphoblastic leukemia reveals potential leukemia progression mechanisms. *Genes Chromosomes Cancer*. 2017 Nov;56(11):810-820.

Gallardo D, Bosch-Vizcaya A, Rodríguez-Romanos R, Santos N, Buño I, de la Cámara R, Brunet S, Jiménez-Velasco A, González M, Nieto JB, Martínez-Laperche C, Vallejo C, Ferrá C, Sampol A, López-Jiménez J, Pérez-Simón JA, Martínez C, Díez JL; GvHD/Immunotherapy Committee of the Spanish Hematopoietic Transplant Group. Donor CTLA-4 Genotype Modulates the Immune Response to Minor Histocompatibility Antigen Mismatches. *Biol Blood Marrow Transplant*. 2017 Dec;23(12):2042-2047

Current grants

Project: Modulación de respuesta aloinmune frente a antígenos menores de histocompatibilidad por el genotipado de moléculas coestimuladoras y coinhibidoras.

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: David Gallardo

Collaborator researcher:

Project: Tractament individualitzat de la leucèmia aguda: identificació de pacients amb alt risc de recaiguda.

Funding agency: ONCOTRAIL

Duration: 2016-2017

Lead Researcher: David Gallardo

Project: Modulación de respuesta inmune en trasplante alogénico de progenitores hematopoyéticos por el genotipo de moléculas inhibidoras de checkpoint. Biobanco español de aloTPH (PI17/00815)

Funding agency: Instituto de Salud Carlos III

Duration: 2018-2020

Lead Researcher: David Gallardo

Project: EFA281/16/IMLINFO - Réseau transfrontalier d'immunothérapies personnalisées dans le traitement des lymphomes non Hodgkiniens

Funding agency: POCTEFA 2014-2020 FR

Duration: 2018-2020

Lead Researcher: Patricia Pérez

Collaborator researcher: David Gallardo, Josep M^a Roncero

Hepatobiliary & Pancreatic surgery and Oncology

Group members

Group leader

Joan Figueras

Post-graduate researchers

M^a José Ferri Iglesias

Rosa Peracaula

Pre-doctoral researchers

Margarida Casellas Robert

Helena Salvador Roses

Medical researchers

Maite Albiol Quer

Adelaida García Velasco

Raquel Guardado

Xavi Hernández Yagüe

Santiago López-Ben

Bernat Queralt

Jordi Soriano

Overview

Clinical research on liver, biliary tract and pancreatic cancer

Research topics

Oncology strategies in liver metastases of colon cancer

Biochemical markers of pancreatic cancer

Surgical technique of pancreatic tumors and perampular area

Development of minimally invasive oncologic surgery for pancreatic and liver tumors

Publications

Originals:

Allard MA, Adam R, Giuliani F, Lapointe R, Hubert C, Ijzermans JNM, Mirza DF, Elias D, Laurent C, Gruenberger T, Poston G, Letoublon C, Isoniemi H, Lucidi V, Popescu I, Figueras J. Long-term outcomes of patients with 10 or more colorectal liver metastases. *Br J Cancer*. 2017 Aug 22;117(5):604-611.

López-Ben S, Ranea A, Albiol MT, Falgueras L, Castro E, Casellas M, Codina-Barreras A, Figueras J. Evolution of laparoscopic surgery in a high volume hepatobiliary unit: 150 consecutive pure laparoscopic hepatectomies. *Cir Esp*. 2017 May;95(5):261-267. doi: 10.1016/j.ciresp.2017.04.010.

Reviews:

Puig J, Blasco G, Schlaug G, Stinear CM, Daunis-I-Estadella P, Biarnes C, Figueras J, Serena J, Hernández-Pérez M, Alberich-Bayarri A, Castellanos M, Liebeskind DS, Demchuk AM, Menon BK, Thomalla G, Nael K, Wintermark M, Pedraza S. Diffusion tensor imaging as a prognostic biomarker for motor recovery and rehabilitation after stroke. *Neuroradiology*. 2017 Apr;59(4):343-351.

Metabolism and cancer group

Recognised as a consolidated research group

Group members

Group leader

Javier A. Menéndez

Post-doctoral researchers

Elisabet Cuyàs

Pre-doctoral researchers

Sara Verdura

Medical researchers

Joaquim Bosch

Eugeni López

Collaborators

Salvador Fernández

Begoña Martín



Overview

The Metabolism and Cancer Group adopts the view that cancer diseases are governed by a pivotal regulatory role of metabolic reprogramming, which ultimately determines cell fate decisions during tumor formation, therapy response, and cancer relapse

Research topics

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 (CSC)
- New therapeutic strategies targeting the metabolo-epigenetic machinery of CSC
- Precision medicine approaches based on the metabolo-epigenetic machinery of CSC.
- Delineation of the so-called metabostemness hallmark

Autophagy, mitochondrial dynamics & cancer

- Role of autophagy and mitochondrial dynamics in the generation and maintenance of CSC
- Targeting autophagy and mitochondrial dynamics to overcome drug resistance in cancer therapy
- Delineation of the so-called mitostemness hallmark

Computational Systems Biology in cancer & aging

- Mathematical & computational biology: Stochastic tools, conceptual frameworks, and wet-lab validation of metabolo-epigenetic models in cancer and aging
- In silico clinical trials of healthspan-promoting interventions

Natural biocompounds

- Molecular characterization and preclinical evaluation of natural biocompounds with anti-cancer and/or anti-aging properties
- In silico modeling and pre-clinical development of biocompounds-derived anti-cancer/anti-aging drugs

Drug repositioning in cancer metabolism

- Screening, pre-clinical development, and clinical evaluation of repositioned drug candidates to target cancer metabolism

Publications

Originals:

Cuyàs E, Fernández-Arroyo S, Verdura S, García RÁ, Stursa J, Werner L, Blanco-González E, Montes-Bayón M, Joven J, Viollet B, Neuzil J, Menendez JA. Metformin regulates global DNA methylation via mitochondrial one-carbon metabolism. *Oncogene*. 2017 Oct 23.

Riera-Borrull M, García-Heredia A, Fernández-Arroyo S, Hernández-Aguilera A, Cabré N, Cuyàs E, Luciano-Mateo F, Camps J, Menendez JA, Joven J. Metformin Potentiates the Benefits of Dietary Restraint: A Metabolomic Study. *Int J Mol Sci*. 2017 Oct 28;18(11).

Cuyàs E, Verdura S, Fernández-Arroyo S, Bosch-Barrera J, Martín-Castillo B, Joven J, Menendez JA. Metabolomic mapping of cancer stem cells for reducing and exploiting tumor heterogeneity. *Oncotarget*. 2017 Oct 15;8(59):99223-99236.

Cuyàs E, Queralt B, Martín-Castillo B, Bosch-Barrera J, Menendez JA. EphA2 receptor activation with ephrin-A1 ligand restores cetuximab efficacy in NRAS-mutant colorectal cancer cells. *Oncol Rep*. 2017 Jul;38(1):263-270.

Corominas-Faja B, Vellon L, Cuyàs E, Buxó M, Martín-Castillo B, Serra D, García J, Lupu R, Menendez JA. Clinical and therapeutic relevance of the metabolic oncogene fatty acid synthase in HER2+ breast cancer. *Histol Histopathol*. 2017 Jul;32(7):687-698.

Cuyàs E, Martín-Castillo B, Bosch-Barrera J, Menendez JA. Metformin inhibits RANKL and sensitizes cancer stem cells to denosumab. *Cell Cycle*. 2017 Jun 3;16(11):1022-1028.

Cuyàs E, Corominas-Faja B, Martín MM, Martín-Castillo B, Lupu R, Brunet J, Bosch-Barrera J, Menendez JA. BRCA1 haploinsufficiency cell-autonomously activates RANKL expression and generates denosumab-responsive breast cancer-initiating cells. *Oncotarget*. 2017 May 23;8(21):35019-35032.

Menendez JA, Alarcón T. Senescence-Inflammatory Regulation of Reparative Cellular Reprogramming in Aging and Cancer. *Front Cell Dev Biol*. 2017 May 5;5:49

Menendez JA, Lupu R. Fatty acid synthase regulates estrogen receptor- α signaling in breast cancer cells. *Oncogenesis*. 2017 Feb 27;6(2):e299.

Reviews:

Luciano-Mateo F, Hernández-Aguilera A, Cabre N, Camps J, Fernández-Arroyo S, Lopez-Miranda J, Menendez JA, Joven J. Nutrients in Energy and One-Carbon Metabolism: Learning from Metformin Users. *Nutrients*. 2017 Feb 10;9(2).

Menendez JA, Lupu R. Fatty acid synthase (FASN) as a therapeutic target in breast cancer. *Expert Opin Ther Targets*. 2017 Nov;21(11):1001-1016.

Bosch-Barrera J, Queralt B, Menendez JA. Targeting STAT3 with silibinin to improve cancer therapeutics. *Cancer Treat Rev*. 2017 Jul;58:61-69.

Elia Sais, Javier A. Menendez, Joaquim Bosch-Barrera. The practice-changing QUARTZ trial: Is there any role for whole brain radiotherapy in patients with non-small cell lung cancer and brain metastases? *Translational Cancer Research* 2017; 6(Supplement 1). doi: 10.21037/tcr.2017.02.24

Books:

Celia Rodríguez-Pérez, Rosa Quirantes-Piné, Javier Menendez, Antonio Segura-Carretero. Composition and analysis of functional components of olive leaves. *OLIVES AND OLIVE OIL AS FUNCTIONAL FOODS: Bioactivity, Chemistry and Processing*. Edited by Apostolos Kiritsakis and Fereidoon Shahidi. John Wiley & Sons Ltd. 2017; Chapter 20:283.

Current grants

Project: A metabolomic framework for reducing and exploiting the multidimensional complexity of tumor heterogeneity: sub-phenotyping of cancer stem cell metabolomic states (SAF2016-80639).

Funding agency: Ministerio de Economía y Competitividad

Duration: 2016-2018

Lead Researcher: Dr. Javier A. Menéndez

Project: Impacto del metabolismo energético en las modificaciones epigenéticas derivadas de la combinación de diabetes y obesidad.

Funding agency: Fundació La Marató de TV3

Duration: 2016-2018

Coordinator: Dr. Jorge Joven

Lead Researcher: Dr. Jorge Joven/Dr. Javier A. Menéndez (collaborator)

Project: Metabostemness: deconstruyendo la reprogramación metabólica de las células madre tumorales (CD15/00033)

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2018

Lead Researcher: Dr. Javier A. Menéndez

Post-doctoral researcher: Dr. Elisabet Cuyàs

Project: Ajuts de suport als grups de recerca de Catalunya (SGR): Grup Consolitat de la Generalitat de Catalunya (2014 SGR 00229).

Funding agency: Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)

Duration: 2015-2017

Lead Researcher: Dr. Rafael de Llorens/Dr. Javier A. Menéndez

Project: Preclinical activity of the TKI nintedanib in combination with the flavonolignan silibinin in NSCLC tumors

Funding agency: Boehringer-Ingelheim

Duration: 2016-2017

Lead Researcher: Dr. Joaquim Bosch-Barrera/Dr. Javier A. Menéndez

Project: Reversing epithelia-to-mesenchymal transition (EMT)-driven resistance to crizotinib with the flavonolignan silibinin in NSCLC tumors

Funding agency: Pfizer

Duration: 2015-2017

Lead Researcher: Dr. Joaquim Bosch-Barrera/Dr. Javier A. Menéndez

Project: Fenotipado de las mutaciones NRAS en el cancer colorectal: Caracterización clinico-molecular y búsqueda de nuevas terapias

Funding agency: Fundació Roses Contra el Càncer

Duration: 2015-2017

Lead Researcher: Dr. Bernardo Queral/Dr. Javier A. Menéndez.

Project: Phase II, randomized, open, multicentric trial of neoadjuvant treatment with chemotherapy and trastuzumab with or without the addition of metformin in women diagnosed with primary HER2/ErbB2 positive breast cancer

Funding agency: Ministerio de Sanidad (Incentives for the Promotion of Independent Clinical Research)

Duration: 2010-2017

Coordinator: Dr. Begoña Martín-Castillo

Lead Researcher: Dr. Begoña Martín-Castillo (clinical coordinator)/Dr. Javier A. Menéndez (translational coordinator)

Patents

Number of application: PCT/EP2016/2016

Title: Compound for the treatment of cancer and/or cancer treatment resistance by inhibition of cancer stem cells

Holder: IDIBGI-ICO

Inventor: Javier A. Menéndez



ASSOCIATED GROUPS

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

MICELAB - MODELLING, IDENTIFICATION AND CONTROL ENGINEERING

PROTEIN ENGINEERING

STATISTICS AND DATA ANALYSIS

STATISTICS, ECONOMETRICS AND HEALTH (GRECS)

Internal medicine

ICS

Group members

Group leader

Antoni Castro i Guardiola

R3-Established researchers

Maria Rodriguez

Medical researchers

Antoni Castro

Iria Francisco

Arola Armengou

Xavier Salgado

Joel Elias Chara

Fernando García-Bragado Dalmau

Overview

The members of the group come from the Internal Medicine Service, a healthcare service that assists a wide spectrum of pathologies. The main activity of the group is clinical care, continuing medical education and clinical research as it results in a better quality of care.

Research topics

- Venous thromboembolic disease (VTE). During the last years, the group has focused on clinical research of the VTE; participating in several controlled clinical trials on the new direct-acting oral anticoagulants, all of which were published in the New England Journal of Medicine (the last in 2018). At the same time the group has remained participating in the DS1040 clinical trial as well as in two international registries on the VTE, namely RIETE and GARFIELD - VTE.

- Heart failure. Dr. Arola Armengou, member of the Heart Failure and Atrial Fibrillation group of the Spanish Internal Medicine Society and active member of the RICA registry.

- Infectious diseases. The group designed and developed a clinical trial on pneumonia acquired in the community, as well as other studies on the same pathology; These studies led to an original in the American Journal of Medicine as well as other publications and communications in different congresses. The group also works on HIV, multiresistant bacteria and urinary tract infections.

- Finally, the group also participates in the clinical investigation of systemic autoimmune diseases and recently started clinical research, together with the Ophthalmology Service, of uveitis.

Publications

Originals:

Tzoran I, Papadakis E, Brenner B, Valle R, López-Jiménez L, García-Bragado F, Riera-Mestre A, Villalobos A, Quintavalla R, Monreal M; RIETE Investigators. . Gender-related differences in the outcome of patients with venous thromboembolism and thrombophilia. *Thromb Res.* 2017 Mar;151 Suppl 1:S11-S15.

Tafur AJ, Caprini JA, Cote L, Trujillo-Santos J, Del Toro J, García-Bragado F, Tolosa C, Barillari G, Visona A, Monreal M; RIETE Investigators. Predictors of active cancer thromboembolic outcomes. RIETE experience of the Khorana score in cancer-associated thrombosis. *Thromb Haemost.* 2017 Jun 2;117(6):1192-1198

Weitz JI, Lensing AWA, Prins MH, Bausechs R, Beyer-Westendorf J, Bounameux H, Brighton TA, Cohen AT, Davidson BL, Decousus H, Freitas MCS, Holberg G, Kakkar AK, Haskell L, van Bellen B, Pap AF, Berkowitz SD, Verhamme P, Wells PS, and Prandoni P for the EINSTEIN-CHOICE Investigators. Rivaroxaban or Aspirin for extended treatment of venous thromboembolism. *N. Engl.J.Med.* 2017;376:1211-1222.

Barrios D, Chavant J, Jiménez D, Bertoletti L, Rosa-Salazar V, Muriel A, Viallon A, Fernández-Capitán C, Yusen RD, Monreal M; Registro Informatizado de la Enfermedad TromboEmbólica Investigators. Treatment of right heart thrombi associated with acute pulmonary embolism. *Am.J.Med.* 2017;130:588-595.

Newton DH, Monreal Bosch M, Amendola M, Wolfe L, Perez Ductor C, Lecumberri R, Levy MM; RIETE Investigators. Analysis of noncatheter-associated upper extremity deep venous thrombosis from the RIETE registry. *J.Vasc.Surg.Venous Lymphat Disord.* 2017;5:18-24.

Tzoran I, Papadakis M, Brenner B, Fidalgo Á, Rivas A, Wells PS, Gavín O, Adarraga MD, Moustafa F, Monreal M; Registro Informatizado de Enfermedad TromboEmbólica Investigators. Outcome of patients with venous thromboembolism and Factor V Leiden or Prothrombin 20210 carrier mutations during the course of anticoagulation. *Am.J.Med.* 2017;130:482e1-482e9.

Mahé I, Chidiac J, Bertoletti L, Font C, Trujillo-Santos J, Peris M, Pérez Ductor C, Nieto S, Grandone E, Monreal M; RIETE investigators. The clinical course of venous thromboembolism may differ according to cancer site. *Am.J.Med.* 2017;130:337-347.

Jara-Palomares L, Otero R, Jimenez D, Carrier M, Tzoran I, Brenner B, Margeli M, Praena-Fernandez JM, Grandone E, Monreal M; RIETE Investigators. Development of a risk prediction score for occult cancer in patients with VTE. *Chest* 2017;151:564-571.

Book:

Juvinyà-Canal D, Hernán M, Gallego-Diéguez J. Perspectives on Salutogenesis of Scholars Writing in Spanish. En: Mittelmark MB, Sagy S, Eriksson M, Bauer GF, Pelikan JM, Lindström B, et al., editors. *The Handbook of Salutogenesis*. Cham: Springer International Publishing; 2017. p. 423-9.

Lectures, communications & posters (in congress and other events)

Posters:

Garzon T, Oller A, Castro A, Salgado X, Batlle C, Domenech D, Fusellas M, García Bragado F. Estudio descriptivo de la infección por gripe en pacientes que requieren ingreso en un hospital. *Congrés de la Societat Catalano-Balear de Medicina Interna*. Barcelona, 4-5/May/2017.

Current grants

Project: Modulación de respuesta aloimmune frente a antígenos menores de histocompatibilidad por el genotipado de moléculas coestimuladoras y coinhibidoras.

Funding agency: Instituto de Salud Carlos III

Duration: 2015-2017

Lead Researcher: David Gallardo

Collaborator researcher:

Project: Tractament individualitzat de la leucèmia aguda: identificació de pacients amb alt risc de recaiguda.

Funding agency: ONCOTRAIL

Duration: 2016-2017

Lead Researcher: David Gallardo

Project: Modulación de respuesta inmune en trasplante alogénico de progenitores hematopoyéticos por el genotipo de moléculas inhibidoras de checkpoint. Biobanco

Nephrology

ICS

Group members

Group leader

Jordi Calabia

Post-doc researchers

Xoana Barros

Post-graduate researchers

Nadia Martin

Maria Cufi

Marcela Castillo

Medical researchers

Isabel García

Pere Torguet

Cristina Noboa

Collaborators

Cristina Martínez

Elisabeth Marcé

Nursing staff

Estibaliz Platero

Montse Jubany

Overview

The goal of the group is to consolidate the method for studying cardiovascular risk, stiffness, vascular calcification and the atheroma burden in patients with chronic kidney disease.

Innovation and advances in renal replacement therapies, specifically haemodialysis and peritoneal dialysis.

Research topics

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

Study of diagnosis, prognosis and treatment of glomerular diseases.

Study of new approaches in home renal replacement therapy.

Publications

Originals:

García, I; Calabia, J. ¿El uso de soluciones biocompatibles en diálisis peritoneal supone algún beneficio a largo plazo?. Nefropuls, 2017, Vol 9 num 2

Calabia J; Arcos E; Carrero JJ; Comas J; Valles M. Does the Obesity Survival Paradox of Dialysis Patients Differ with Age?. 905681 - Blood Purification. 39 - 1, pp. 193 - 199. (Suïssa): 2015.

Calabia J; Torguet P; Garcia I; Martin N; Mate G; Marin A; Molina C; Valles M. The relationship between renal resistive index, arterial stiffness, and atherosclerotic burden: the link between macrocirculation and microcirculation. 906391 - Journal of Clinical Hypertension. 16 - 3, pp. 186 - 191. 2014.

B. Guasch; P. Torguet; I. Garcia; J. Calabia; N. Martín; G. Maté; D. Faur; Y. Barreiro; C.P. Molina; C. Noboa; M. Vallès. Utilidad de la monitorización ambulatoria de la presión arterial en la evaluación de la rigidez arterial. Correlaciones con la velocidad de onda de pulso y las tensiones arteriales centrales. 202819 - hipertensión y riesgo vascular. 30 - 1, pp. 4 - 11. (Espanya): 2013.

Jordi Calabia; Pere Torguet; Maria Garcia; Isabel Garcia1; Nadia Martin; Bernat Guasch; Diana Faur; Martí Vallés. Doppler ultrasound in the measurement of pulse wave velocity: agreement with the Complior method. 915561 - Cardiovascular Ultrasound. 9 - 13, (Regne Unit): 2011.

Sirvent JM; Vallés M; Navas E; Calabia J; Ortiz P; Bonet A. Evolución de los pacientes cr#ticos con fracaso renal agudo y disfunción multiorgánica tratados con hemodiafiltración venovenosa continua. 916123 - Medicina Intensiva. 34 - 2, pp. 95 - 101. (Espanya): 2009.

Llufriu S; Castillo J; Blanco Y; Ramió-Torrentà L; Ríó J; Vallés M; Lozano M; Castellà MD; Calabia J; Horga A; Graus F; Montalban X; Saiz A. Plasma exchange for acute attacks of CNS demyelination: Predictors of improvement at 6 months.905828 - Neurology. 73 - 12, pp. 949 - 953. (Estats Units d'Amèrica): American Academy of Neurology (AAN), 2009

Biochemistry of cancer

University of Girona

Recognised as a consolidated research group

Group members

Group leaders

Rafael de Llorens and Rosa Peracaula

Senior researchers

Rosa Nuria Aleixandra

Sílvia Barrebés

Josep Comet

M^a José Ferri

Esther Llop

Anna Massaguer

Manuel Ramírez

Post-graduate researchers

Pedro Guerrero

Technicians support

Montserrat Ferrer

Fellowships

Pedro Guerrero

Adrià Duran

Laura Miró

Overview

Early diagnosis of cancer and its treatment

Research topics

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:

- 1-Montserrat Ferrer-Batallé, Esther Llop, Manel Ramírez, R. Núria Aleixandre, Marc Saez, Josep Comet, Rafael de Llorens and Rosa Peracaula. "Comparative study of blood-based biomarkers, α 2,3-sialic acid PSA and PHI, for high risk prostate cancer detection". *International Journal of Molecular Sciences* (2017) 18, pii: E845. doi: 10.3390/ijms18040845.
- 2-Barrabés S, Llop E, Ferrer-Batallé M, Ramírez M, Aleixandre RN, Perry AS, de Llorens R, Peracaula R. "Analysis of urinary PSA glycosylation is not indicative of high-risk prostate cancer". *Clin Chim Acta*. (2017) May 8. pii: S0009-8981(17) 30173-0. doi: 10.1016/j.cca.2017.05.009.
- 3-Martínez MÁ, Carranza MP, Massaguer A, Santos L, Organero JA, Aliende C, de Llorens R, Ng-Choi I, Feliu L, Planas M, Rodríguez AM, Manzano BR, Espino G, Jalón FA. "Synthesis and Biological Evaluation of Ru(II) and Pt(II) Complexes Bearing Carboxyl Groups as Potential Anticancer Targeted Drugs". *Inorg Chem*. (2017) Nov 3. doi: 10.1021/acs.inorgchem.7b01178.
- 4- Mancera-Arteu M, Giménez E, Barbosa J, Peracaula R, Sanz-Nebot V. Zwitterionic-hydrophilic interaction capillary liquid chromatography coupled to tandem mass spectrometry for the characterization of human alpha-acid-glycoprotein N-glycan isomers. *Anal Chim Acta*. 2017 Oct 23;991:76-88. doi: 10.1016/j.aca.2017.07.068.
- 5- Farina-Gomez N, Barrabés S, Gomez-Lopez JE, Gonzalez M, Puerta A, Navarro-Calderon D, Albers-Acosta E, Olivier C, Diez-Masa JC, Peracaula R, de Frutos M. Sample preparation of serum to allow capillary electrophoresis analysis of prostate specific antigen isoforms. *J Pharm Biomed Anal*. 2017 Feb 5;134:220-227. doi: 10.1016/j.jpba.2016.11.045. Epub 2016 Nov 24.
- 6- Gandioso A, Massaguer A, Villegas N, Salvans C, Sánchez D, Brun-Heath I, Marchán V, Orozco M, Terrazas M. Efficient siRNA-peptide conjugation for specific targeted delivery into tumor cells. *Chem Commun (Camb)*. 2017 Mar 2;53(19):2870-2873. doi: 10.1039/c6cc10287e.

Invited lectures

- 1-Clinical utility of new PSA isoforms. Glyco PSA. Dra. R. Peracaula.

CONGRESS: XV International Symposium on Biology and Clinical Usefulness of tumor markers. Barcelona, 2017.

2-Improved pancreatic adenocarcinoma diagnosis in jaundiced and non-jaundiced pancreatic adenocarcinoma patients through the combination of routine clinical markers associated to pancreatic adenocarcinoma pathophysiology. Dra. M^aJ. Ferri. CONGRESS: XV International Symposium on Biology and Clinical Usefulness of tumor markers. Barcelona, 2017.

Grants for research in progress

- Influencia de la glicosilación alterada en cáncer de páncreas. Estrategias glicoproteómicas para la búsqueda de nuevos marcadores tumorales". Reference: N/r: BIO2015-66356-R Sponsored by: Ministerio de Educación y Ciencia. Duration: 2016-2019. Leading Researchers: Rosa Peracaula and R. de Llorens. Number of researchers: 8
- Grups de Recerca Consolidats - Bioquímica i Clínica del Càncer (Grupos de Investigación Consolidados). Sponsored by: DGR (Dirección General de Investigación de la Generalitat de Catalunya). N/r: 2017 SGR 673. Participants: Universidad de Girona and "Fundació Privada Institut d'investigació Biomèdica de Girona" (IdIBGi - Hospital Universitari Dr. J. Trueta)". Duration: from 2018 until 2020. Leading researcher: Rafael de Llorens. Number of researchers: 15.

Patents

- Authors: Ferri M^aJ, 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

Group members

Group leader

Joan Martí

Established researchers

Xavier Lladó

Arnau Oliver

Jordi Freixenet

Robert

Martí

Post-doctoral researchers

Oliver Díaz

Sergi Valverde

Mariano Cabezas

Pre-doctoral researchers:

Alexandra González

Mostafa Salem

Albert Malet

Eloy García

José Bernal Moyano

Richa Agarwal

Kaisar Kushibar

Overview

The Image Analysis and 3D Perception research group (G3DAI) belongs to the VICOROB research Institute of the University of Girona. G3DAI focuses its effort on two main research lines: image analysis and 3D perception. In the field of image analysis, G3DAI is committed in developing and optimizing methods (including both hardware and software developments) for analysis of data, with particular focus on the study of medical images. In the 3D perception field, G3DAI brings together extensive experience in many of the scientific and technological fields related to the acquisition of three-dimensional information of a real scene, as well as the processing of this information to approach tasks of automation of machinery or quality control of up to 100 % of the production.

Research topics

G3DAI's motivation is driven by the scientific challenges which continuously appear as a consequence of the society's requirements. G3DAI is working towards the development of imaging tools to help women stratification for personalized breast cancer screening programs. In this sense, new algorithms and image acquisition protocols will be proposed to improve breast cancer detection using the most appropriate technology (mammography, ultrasound, magnetic resonance) for each woman, according to their cancer risk (e.g. breast density). With respect to multiple sclerosis, the group's research intends to develop novel algorithms to improve the current magnetic

resonance biomarkers such as brain lesions, longitudinal brain atrophy, and regional cortical and subcortical gray matter, which indeed will improve the diagnosis, monitoring and follow-up of patients. Furthermore, we will tackle the challenge of developing predictive models fusing MRI information with other relevant clinical information. Moreover, G3DAI plans also to continue the development of novel 3D reconstruction techniques based on scanner systems and computer vision algorithms, with the main focus to deal with other quality control challenges from industrial companies.

Publications

Originals:

Mahmood, M.H.; Diez, Y.; Salvi, J.; Lladó, X. A collection of challenging motion segmentation benchmark datasets. *Pattern Recognition* 2017; 61: 1-14

Valverde, S.; Oliver, A.; Roura, E.; González, S.; Pareto, D.; Vilanova, J.C., et al. Automated tissue segmentation of MR brain images in the presence of white matter lesions. *Medical Image Analysis* 2017; 35: 446-457

S. Valverde, M. Cabezas, E. Roura, S. González-Villà, D. Pareto, J.C. Vilanova, et al. Improving automated multiple sclerosis lesion segmentation with a cascaded 3D convolutional neural network approach. *Neuroimage* 2017; 155: 159-168

Garcia, E.; Diaz, O.; Martí, R.; Diez, Y.; Gubern-Mérida, A.; Melcior, S.; Martí, J.; Oliver, A. Local breast density assessment using reacquired mammographic images. *European Journal of Radiology* 2017; 93: 121-127

González-Villà, S.; Valverde, S.; Cabezas, M.; Pareto, D.; Vilanova, J.C.; Ramió-Torrentà, L.; Rovira, A.; Oliver, A.; Lladó, X. Evaluating the effect of multiple sclerosis lesions on automatic brain structure segmentation. *NeuroImage: Clinical* 2017; 15:228-238

Agarwal, R.; Diaz, O.; Lladó, X.; Gubern-Mérida, A.; Vilanova, J.C.; Martí, R. Lesion Segmentation in Automated 3D Breast Ultrasound: Volumetric Analysis. *Ultrasonic Imaging* 2017; 40: 97-112

Garcia, E.; Diez, Y.; Diaz O.; Llado, X.; Gubern-Merida, A.; Marti, R.; Marti, J.; Oliver, A. Multimodal breast parenchymal patterns correlation using a patient-specific biomechanical model. *IEEE Transactions on Medical Imaging*. 2017; 37(3) 712-723

Bernal, J.; Escobar, J. W.; Linfati R. A granular tabu search algorithm for a real case study of a vehicle routing problem with a heterogeneous fleet and time windows. *Journal of Industrial Engineering and Management* . 2017; 10: 646-662

Mata, C.; Oliver, A.; Lalande, A.; Walker, P.; Martí, J. On the Use of XML in Medical Imaging Web-Based Applications. *Irbm*. 2017; 38: 3-12

Current grants

Project: New technologies applied to clinical practice for obtaining biomarkers of atrophy and lesions in magnetic resonance images of patients with multiple sclerosis (BiomarkEM.cat)

Funding agency: La Marató TV3 Foundation

Duration: 2015-2019

Coordinator: University of Girona

Lead Researcher: Xavier Lladó Bardera

Project: Herramientas de neuroimagen para mejorar el diagnóstico y el seguimiento clínico de los pacientes con esclerosis múltiple (NICOLE)

Funding agency: Ministerio de Economía y Competitividad

Duration: 2015-2019

Coordinator: University of Girona

Lead Researcher: Xavier Lladó Bardera / Joaquim Salvi Mas

Project: Scattered radiation reduction tool to improve computer-aided diagnosis performance in digital breast tomosynthesis (SCARtool)

Funding agency: Comissió Europea

Duration: 2015-2017

Coordinator: University of Girona

Lead Researcher: Joan Martí / Oliver Díaz

Project: Análisis de Imágenes Inteligente para los retos en el cribado de cáncer de mama (SMARTER)

Funding agency: MECO - Ministerio de Economía y Competitividad

Duration: 2016-2018

Coordinator: University of Girona

Lead Researcher: Robert Martí Marly

Project: Segmentación automática de las estructuras cerebrales para su uso como biomarcadores de imagen (WASSABI)

Funding agency: Ministerio de Economía y Competitividad

Duration: 2017-2020

Coordinator: University of Girona

Lead Researcher: Arnau Oliver / Xavier Lladó

Project: Erasmus + Joint Master Degree in Medical Imaging and Applications (MAIA)

Funding agency: Comissió Europea

Duration: 2016-2020

Coordinator: University of Girona

Lead Researcher: Robert Martí

Theses

Title: Tools for 3D point cloud registration

Doctoral student: Ferran Roura Garcia

Thesi director: Dr. Joaquim Salvi Mas and Dr. Yago Díez Donoso

University: University of Girona

Faculty/School: Escola Politècnica Superior

Date: 08-03-2017

Title: Case-level detection of mammographic masses

Doctoral student: Meritxell Tortajada Giménez

Thesi director: Dr. Robert Martí Marly and Dr. Jordi Freixenet Bosch

University: University of Girona

Faculty/School: Escola Politècnica Superior

Date: 17-07-2017

Control engineering and intelligent systems - Medicine and health

University of Girona

Group members

Group leader

Beatriz López

Pre-doctoral researchers

Natàlia Mordvanyuk

Established researchers

Bianca Innocenti

Joaquim Meléndez

Carles Pous

Miquel Rustullet

Technicians

Eduard Feliu

Alejandro Pozo

Ramón Viñas

Post-doctoral researchers

Ferran Torrent

Support

Roberto Petite

Sara Murlà

Pablo Gay

Overview

The main research activity of the group is focused on the application of artificial intelligence principles (data mining and knowledge discovery, qualitative reasoning, case based reasoning, auctions, etc.) and machine learning to support decision-making processes. This research is being conducted in mainly two application domains: medicine/Healthcare and Smart cities/smart grids.

The members of the group participate in academic activities of The inter-university Doctorate Program in Bioinformatics and lead doctoral thesis in the PhD Program in Technology at the same University.

Research topics

Regarding the research line of Medicine and Healthcare, the eXiT group focuses on the incorporation of intelligent systems and biomedical engineering in health management and on the development of innovative medical technologies. During 2016, eXiT-Health is working intensively on the following activities:

- Dyslipidaemia and familial hypercholesterolemia: development of an integrated system for the detection of patients and treatment recommendations.
- Diabetes: intelligent decision support system for recommending insulin bolus; monitoring physical activity through wearables to improve the recommendation.
- Epilepsy: development of machine learning algorithms for seizure detection and prediction from EEG.
- Emergency department attendance prediction: application of machine learning methods; use of exogenous variables.

Publications

Editorials:

Pau Herrero, Beatriz Lopez, and Clare Martin (eds). Proc. AIME Workshop on Artificial Intelligence for Diabetes 2017

Originals:

C.Martin, A. Aldea, D. Brown, D. Duce, J.M. Fernández-Real, P. Gay, P. Georgiou, R. Harrison, P. Herrero, B. López, Y. Leal, L. Nita, P. Pesl, R. Petite, M. Reddy, J. Shapley, F. Torrent-Fontbona, M. Waite, M. Wos and N. Oliver: Personalised Clinical Decision Support Using Real-Time Data. International Conference on Advanced Technologies & Treatments for Diabetes (ATTD), Paris, February, 15-18, 2017. Abstracts published in: Diabetes Technology & Therapeutics, Volume 19, Supplement 1, 2017, pp. A-64.

Albert Pla, Natalia Mordvanyuk, Beatriz López, Marco Raaben, Taco J. Blokhuid, Herman R. Holstlag: Bag-of-steps: Predicting Lower-limb Fracture Rehabilitation Length. Neurocomputing, Volume 268, 13 December 2017, Pages 109-115.

Beatriz López, Ferran Torrent-Fontbona, Ramon Viñas, José Manuel Fernández-Real. Single Nucleotide Polymorphism relevance learning with Random Forests for Type 2 diabetes risk prediction. Artificial Intelligence in Medicine, Available online 22 September 2017

Natalia Mordvanyuk, Ferran Torrent-Fontbona, and Beatriz Lopez. Prediction of Glucose Level Conditions from Sequential Data. In Aguiló et al (Eds): Recent Advances in Artificial Intelligence Research and Development, Frontiers in Artificial Intelligence and Applications, volume 300, pages 227-232.

Current Grants

Project: PEPPER – Patient Empowerment through Predictive PERsonalised decision support..

Funding agency: European Commission (H2020 PHC-28-2015, Grant Agreement 689810)

Duration: 2016-2019

Coordinator: Oxford Brookes (UK)

Lead Researcher (UdG): Beatriz López

Project: 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.

Funding agency: ACC10 (Ref. TECDTP15-1-0009)

Duration: 2016-2018

Lead Researcher: Joaquim Meléndez, Joan Colomer

Project: Mejora a la productividad eXiT

Funding agency: UdG (Ref MPCUdG2016/075)

Duration: 2016-2018

Lead Researcher: Joaquim Meléndez, Joan Colomer

Project: Improving quality of life for people with epilepsy using SERAS (Seizure Risk Assessment device) and personal data

Funding agency: Fundación Barcelona Mobile World Capital, in collaboration with MJN Neuroserveis, S.L., Clínica Corachán S.A., Rebert Espai S.L.

Duration: Dec 2017-Sept 2018

Lead Researcher: Beatriz López

Project: Anàlisi i proves de models d'intel·ligència artificial que permetin anticipar crisis d'epilèpsia amb minuts d'antelació fent servir dades clíniques de pacients reals.

Funding agency: MJN Neuroserveis, S.L.

Duration: Nov 15th, 2017 – Jan 15th, 2018

Lead Researcher: Beatriz López

Project: Predicción de la afluencia de urgencias y la hospitalización que se deriva.

Funding agency: Fundación Hospital de Palamós

Duration: 2015 to date

Lead Researcher: Beatriz López

Health and healthcare

University of Girona

Recognised as a consolidated research group

Group members

Group leader

Dolors Juvinyà

Cristina Bosch

Josep Olivet

Maria del Carmen Malagon

Established researchers

Carme Bertran

David Ballester

Maria Rosa Suñer

Concepció Fuentes

Bernat Carles Serdà

Pre-doctoral researchers

Almerinda Domingo

Technicians

Cristina Vilarò

Post-doctoral researchers

Marta Vilanova

Overview

The Research Group in Health and Healthcare is a multidisciplinary group made up of professionals from nursery, psychology, anthropology and physiotherapy, with the aim to boost the research in the field of health, specifically in Health Promotion, The elderly and carers, Health Emergencies, and Woman, Gender and Health.

It was created in 2002 and it was recognized as a Consolidated Group by the "Generalitat de Catalunya" (2009 SGR 166) in 2009. This distinction was renewed in 2014 (2014 SGR 1393) and in 2017 (2017 SGR 1767).

Besides carrying out research, the group undertakes different activities to increase the knowledge in its field and to disseminate it into society. In that sense, they set up specific courses addressed to professionals of health and care and they participate in national and international events, associations and investigations.

The group is part of the Sectorial Campus of Health of the Universitat de Girona.

Research topics

The research 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 of both management and clinical 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 and salutogenesis.
- Healthcare and quality of life of people in critical condition; with neurological problems; with mental health problems or with cancer.

Elders and carers

Research is carried out on healthy ageing and in 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 actions to revert the discriminatory elements of the healthcare system that affect the health professions, the health professionals and the 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 (ParcUdG).

Publications

Originals:

Corominas Barnadas JM, López-Pousa S, Vilalta-Franch J, Calvó-Perxas L, Juvinyà Canal D, Garre-Olmo J. [MESGI50 study: description of a cohort on Maturity and Satisfactory Ageing]. *Gac Sanit*. 2017 Nov - Dec;31(6):511-517.

Fontova-Almató, Aurora; Suñer-Soler, Rosa. "La importancia del triaje en los servicios de urgencias." *Emergencias*. 2017; 29: 205-206.

Suner-Soler R, Grau-Martin A, Terceno M, Silva Y, Davalos A, Sanchez JM, et al. Biological and Psychological Factors Associated With Smoking Abstinence Six Years Post-Stroke. *Nicotine Tob Res*. 2017.

Juvinyà-Canal D, Bertran-Noguer C, Suñer-Soler R. Alfabetización para la salud, más que información. *Gac Sanit*. 2017; 32(1):8-10

Navazo L, Joher S, Bertran C, Suñer R. Niveles de ansiedad en enfermos hospitalizados afectados de cardiopatía isquémica. *Revista Rol de enfermería*. 2017; 40 (9): 64-9

Juvinyà-Canal, Dolors. Evolución de la investigación en enfermería en España. *Revista Rol de enfermería*. 2017; 40 (6): 14-6.

Juvinyà Canal D. Salud mental, promoción de la salud y salutogénesis. *Rev Enfermería y Salud Mental*. 2017;(7): 3-4.

Iniesta C, Santiñà Ma, Simon RM, Brioso M, Ferret A, Juvinyà-Casals D, Perez Anna C, Ramón I, Serra M. The action plan to implement the strategic lines of the HPH in the Catalan Healthcare organizations. *Clinical Health Promotion*

Bertran-Noguer C, Juvinyà-Canal D, Casals-Alonso C, Ferrer Ramió LI, Garrido Badosa C. Empowering people with cancer in the management of their disease. *Clinical Health Promotion*

Serdà BC, Alsina À. Efectos de la clase magistral frente al aprendizaje autónomo autorregulado en el aprendizaje de los estudiantes universitarios. *FEM Rev la Fund Educ Médica*. 2017;12-3.

C. Fuentes Pumarola, C. Malagón Aguilera, A. Castanera Duro, L. Bordonado Pérez, R. Güell Baróc, M.L. Fortes del Valle, M. Llauredó Serra, I. Sandalinas, M. Pi y M.F. Jiménez Herrera "El sentido de coherencia de las enfermeras de unidades de cuidados intensivos y semicríticos.." *Enfermería intensiva* 28 (2017): 17-18.

C. Fuentes Pumarola, C. Malagón Aguilera, A. Castanera Duro, E. Planella Albi, A. Lobo Civico, V. Cruz Díaz, J.A. Borralló López, I. Martín Girón "El sentido de coherencia de las enfermeras de las unidades de críticos/semicríticos versus enfermeras de hospitalización." *Enfermería intensiva* 28 (2017): 18-18.

Cunill M, Serdà BC, Royo J, Aymerich M. Modelo IDA para la intervención en duelo infantil. *Psicosomática y Psiquiatr*. 2017;1:6-14.

Pellicer MG, Lusa AC, Casanovas JM, Ferrer B-CS. Effectiveness of a multimodal exercise rehabilitation program on walking capacity and functionality after a stroke. *J Exerc Rehabil*. 2017;13(6):666-75.

Reig Garcia G, Figa Vaello J, Vila Vendrell A, Juvinyà-Canals D. How do Catalan Nurses See the Continuity of Care? *Biomed J Sci Tech Res*. 2017;2:1-2.

Book chapters:

Juvinyà-Canal D, Hernán M, Gallego-Diéguez J. Perspectives on Salutogenesis of Scholars Writing in Spanish. En: Mittelmark MB, Sagy S, Eriksson M, Bauer GF, Pelikan JM, Lindström B, et al., editors. *The Handbook of Salutogenesis*. Cham: Springer International Publishing; 2017. p. 423-9.

Bosch Farré C, Bonmatí Tomàs A, Malagón Aguilera M, Gelabert Vilella S, Rascón Hernán C, Raurell Torredà M. Aprendizaje de la planificación de cuidados mediante una plataforma informática: Visión de los estudiantes. Libro de ponencias XXI Encuentro internacional de investigación en cuidados. Madrid (ESP): Instituto de Salud Carlos III. Unidad de Investigación en Cuidados de Salud (Investen-isciii), 2017.

Pons-Baños J, Riesco Miranda L, Martín Rodríguez AC, Ballester-Ferrando D, Serra Millàs M, Escoté Llobet S. "Diferencias clínicas en los pacientes con conducta suicida." *Actas VIII Encuentros en Psiquiatría: conducta suicida*. Madrid (ESP): Biblioteca de Salud Mental, 2017.

Current grants

Project: Gestió integral dels tallers demostratius i les carpes del programa 'Girona, territori cardioprotegit'

Funding agency: Organisme de Salut Pública de la Diputació de Girona (DIPSALUT)

Lead Researcher: Josep Olivet Pujol - Dolor Juvinyà Canal

Project: Salut i apoderament de les persones

Funding agency: VUDG- University of Girona

Duration: 2016-2018

Lead Researcher: Dolor Juvinyà Canal- Carme Bertran Nogué

Project: Innovació i transferència en les tecnologies de la informació i la comunicació en hospitalització domiciliària. TICH

Funding agency: European Comission

Duration: 2014-2017

Lead Researcher: Dolors Juvinyà Canal

Project: Prospectiva transfronteriza sanitaria y social / Prospective transfrontalière sanitaire et sociale. ProspeCTsaso

Funding agency: European Comission

Duration: 2016-2019

Lead Researcher: Anna Planas

Project: Promoció de la Salut, Gènere, Envelliment i Qualitat de Vida

Funding agency: University of Girona

Duration: 2016-2018

Lead Researcher: Concepció Fuentes Pumarola

Project: Pla de Salut Sant Joan de Vilatorrada 2016- 2020.

Funding agency: Ajuntament de Sant Joan de Vilatorrada

Duration: 2016-2017

Lead Researcher: Marta Vilanova Vila

Project: Veïns amb veu

Funding agency: Avancem Santa Clara SCCL

Duration: 2016 - 2017

Lead Researcher: Dolors Juvinyà Canal, Carme Bertran Noguier

Theses

Title: Sentido de coherencia, resiliencia y salud mental positiva en los profesionales del sistema de emergencias médicas

Doctoral student: Susana Mantas Jiménez

Thesi director: Lluch Canut, M. Teresa i Juvinyà Canal, Dolors

University: University of Girona

Faculty/School: Faculty of Nursing

Date: 06/06/2017

Title: Efecto en la calidad de vida, el afrontamiento y las conductas de salud de los pacientes con ictus isquémico agudo tratados con neurointervencionismo endovascular

Doctoral student: Sílvia Reverté Villaroya

Thesi director: Rosa Suñer Soler, Antonio Dávalos Errando, Sílvia Font-Mayolas

University: University of Girona

Faculty/School: Faculty of Psychology

Date: 27/04/2017

Title: El aprendizaje autodirigido en la educación superior. Percepción de los estudiantes de grado de ciencias de la salud

Doctoral student: Carolina Rascón Hernán

Thesi director: Judit Fullana Noell, Concepció Fuentes Pumarola, David Ballester Ferrando

University: University of Girona

Faculty/School: Instituto de Investigación Educativa

Date: 22/05/2017

Health psychology

University of Girona

Recognised as a consolidated research group

Group members

Group leader

M^a Eugènia Gras
Montserrat Planes

Established researchers

Sílvia Font-Mayolas
Armand Grau
Maria Aymerich
Josefina Patiño
Mònica Cunill
Olga Hernández

Post-doctoral researchers

Natàlia Cebrián
Laura Fàbregas
Anna Salamó
Anna Belén Gómez
Francesc Prat

Overview

The research group on Health Psychology was founded at the UdG in 1994. In the first stage of its development, its studies focused on analysing factors influencing risk and prevention behaviours in the spheres of sexuality and driving. The range of subjects was later expanded by incorporating drug use, pain, stress and burn-out, aging and death, and mourning.

The group's researchers come from different fields of knowledge within the subjects of Psychology, Nursing and Medicine, and their research is interdisciplinary in nature.

The members of the group teach on the undergraduate and Master's degree programmes in their fields. One of the main tasks of the group's activity is the training of new researchers.

The research group has received recognition from the Catalan Autonomous Government by the following means and calls:

- Recognized as a Consolidated Research Group by the Catalan Autonomous Government in the 2014-2016 call. Call No.: 2014 SGR 322.
- Recognized as a Consolidated Research Group by the Catalan Autonomous Government in the 2009-2013 call. Call No.: 2009 SGR 618.

The group has also implemented knowledge transfer actions for public and private institutions in relation to the preparation and evaluation of preventive programmes.

Wherever possible, researchers from the group have disseminated the results of their research through different media.

Research topics

- Risky sexual behaviours.
- Risky behaviours on public roads.
- Substance addiction.
- Stress, pain and quality of life.
- Quality of life during aging.
- Loss and mourning processes.
- Research into Health Psychology teaching.

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.

Publications

Originals:

Pawlowsky-Glahn, V., Egozcue, J. J. and Planes-Pedra, M. (2017): Survey data on perceptions of contraceptive measures as compositional tables. Dins Karel Hron and Raimon Tolosana-Delgado (Eds. CoDa-Association) Proceedings of The 7th International Workshop on Compositional Data Analysis, (pp. 229-237). ISBN: 978-84-947240-0-8, 2017

Prat, F., Gras, M.E., Planes, M., Font-Mayolas, S., and Sullman, M.J.M. (2017). Driving distractions: An insight gained from roadside interviews on their prevalence and factors associated with driver distraction. *Transportation Research Part F: Traffic Psychology and Behaviour*, 45, 194-207. (Impact Factor 2015: 1.444; ranked 36/79 in Psychology, Applied, Q2 and ranked 18/32 in Transportation, Q3.)

Suñer-Soler, R., Grau-Martín, A., Terceno, M., Silva, Y., Dávalos, A., Font-Mayolas, S., Gras, M.E., Rodrigo, J., Kazimierczak, M., Malagón, C. and Serena, J. (2017). Biological and Psychological Factors Associated With Smoking Abstinence Six Years Post-Stroke. *Nicotine & Tobacco Research*, doi: 10.1093/ntr/ntx151. (FI any 2016: 4,609). Substance abuse. Rang 2 de 18, Q1.

Vilugron, F., Hidalgo-Rasmussen, C.A., Molina G., T., Gras, M.E. and Font-Mayolas, S. (2017). Uso de sustancias psicoactivas y calidad de vida relacionada con la salud en adolescentes escolarizados. *Revista de Medicina de Chile*, 145, 1525-1534. (SJR FI any 2016: 0,213). Medicine: Q3.

González, M., Casas, F., Viñas, F., Malo, S., Gras, M.E., and Bedin, L. (2017). What leads subjective well-being to change throughout adolescence? An exploration of potential factors. *Child Indicators Research*, 10(1), 33-56. doi: 10.1007/s12187-015-9359-6. (FI 2016: 1.194) Q2 en Social Sciences. Rang 36 de 96.

Cunill, M., Carles, C., Royo, J. and Aymerich, M. (2017). Modelo IDA para la intervención en duelo infantil. *Psicosomática y Psiquiatría*, 1, 6-14.

Current grants

Project: Comportaments de risc, salut i qualitat de vida. Programa de Millora de la Productivitat Científica, codi MPCUdG2016/032

Funding agency: University of Girona

Duration: 2016-2018

Lead Researcher: Montserrat Planes- M^a Eugènia Gras

Theses

Title: Elaboración y aplicación de un programa de formación de formadores para la prevención sexual del VIH: efectos sobre la asertividad, la autoeficacia y la conducta.

Doctoral student: Ana Belén Gómez Lima

Thesi director: Dra. Montserrat Planes

University: University of Girona

Faculty/School: Faculty of Education and Psychology

Date: 24/03/2017

Title: Efecto en la calidad de vida, el afrontamiento y las conductas de salud de los pacientes con ictus isquémico agudo tratados con neurointervencionismo endovascular.

Doctoral student: Sílvia Reverté Vilarroya

Thesi director: Dra. Rosa Suñer, Dr. Antoni Dávalos & Dra. Sílvia Font-Mayolas

University: University of Girona

Faculty/School: Faculty of Education and Psychology

Date: 27/04/2017

MICELab - Modelling, identification and control engineering

University of Girona

Recognised as a consolidated research group

Group members

Group leader

Josep Vehí

Established researchers

Joaquim Armengol

Inès Ferrer

Remei Calm

Ningsu Luo

Post-doctoral researcher

Iván Contreras

Pre-doctoral researchers

Charrise Ramkisson

Silvia Oviedo

Arthur Bertachi

Aleix Beneyto

Lyvia Biaggi

Adrià Parcerisas

Support

Anna C. Comas

Overview

The Modelling, Identification and Control Engineering research group (MICELab), led by Dr. Josep Vehí, was founded in 2000. The team is composed of experienced researchers from the control engineering field with expertise in systems and control theory, modelling and control of biomedical systems, uncertain dynamical systems, robust and predictive control and decision support systems. Since 2005 the group is recognized by the Generalitat de Catalunya as "consolidated research group" (2005SGR00296 / 2017SGR1551).

Since January 1st 2018 the group belongs to the Centre for biomedical research: "Centro de Investigación Biomédica en Red de Diabetes y Enfermedades Metabólicas Asociadas (CIBERDEM)", being the only engineering group accepted until now in the centre.

Research topics

The MiceLab group is researching technologies for diabetes since 2004. The group has worked on modeling and control in type 1 diabetes, including glucose prediction uncertainty and intra-patient variability, optimization of insulin therapy, identifying patterns of carbohydrate absorption and gastric emptying, calibration algorithms for continuous glucose monitors development of control algorithms for closed type 1 diabetic patients, and also for critical patients and fault detection in continuous monitors and insulin-pumps loop.

Over the past few years the group has promoted and conducted several clinical studies in collaboration with leading researchers at the University Hospital Dr. Josep Trueta, the University Hospital of

Valencia and the Clinical Hospital of Barcelona, and in collaboration with major companies in diabetes technologies (Medtronic, Dexcom, Abbott Diabetes Care and Tandem).

Expertise:

- Modeling complex systems with uncertainty and intra-patient variability
- Diabetes medical devices. Artificial pancreas
- Fault detection and risk assessment
- Smart healthcare and m-health

Research lines:

- Continuous Glucose Monitoring
 - Calibration algorithms
 - Detection of wrong measurements
- Modelling and simulation
 - Intra-patient variability modelled using interval models
 - Postprandial 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 postprandial control. Enhanced and safer algorithms
 - Fault detection and supervision: fault detection for insulin pumps. Monitoring of patient condition

Publications

Originals:

Rossetti P, Quirós C, Moscardó V, Comas A, Giménez M, Ampudia-Blasco FJ, León F, Montaser E, Conget I, Bondia J, Vehí J. Closed-Loop Control of Postprandial Glycemia Using an Insulin-on-Board Limitation Through Continuous Action on Glucose Target. *Diabetes Technol Ther.* 2017 Jun;19(6):355-362.

Contreras I, Kiefer S, Vehi J. Adaptive Workflows for Diabetes Management: Self-Management Assistant and Remote Treatment for Diabetes. *Stud Health Technol Inform.* 2017;237:151-156.

Biagi L, Ramkissoon CM, Facchinetti A, Leal Y, Vehi J. Modeling the Error of the Medtronic Paradigm Veo Enlite Glucose Sensor. *Sensors (Basel).* 2017 Jun 12;17(6).

Biagi L, Hirata Bertachi A, Conget I, Quirós C, Giménez M, Ampudia-Blasco FJ, Rossetti P, Bondia J, Vehí J. Extensive Assessment of Blood Glucose Monitoring During Postprandial Period and Its Impact on Closed-Loop Performance. *J Diabetes Sci Technol.* 2017 Nov;11(6):1089-1095.

Contreras I, Oviedo S, Vettoretti M, Visentin R, Vehí J. Personalized blood glucose prediction: A hybrid approach using grammatical evolution and physiological models. *PLoS One.* 2017 Nov 7;12(11):e0187754.

Bertachi A, Ramkissoon CM, Bondia J, Vehí J. Automated blood glucose control in type 1 diabetes: A review of progress and challenges. *Endocrinol Diabetes Nutr.* 2017 Dec 24. pii: S2530-0164(17)30269-0.

Reviews:

Oviedo S, Vehí J, Calm R, Armengol J. A review of personalized blood glucose prediction strategies for T1DM patients. *Int J Numer Method Biomed Eng.* 2017 Jun;33(6).

Ramkissoon CM, Aufderheide B, Bequette BW, Vehi J. A Review of Safety and Hazards Associated with the Artificial Pancreas. *IEEE Rev Biomed Eng.* 2017;10:44-62.

Current grants

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

Funding agency: MICINN

Duration: 2016-2019

Lead Researcher: Josep Vehí

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

Funding agency: FP7-PEOPLE-2012-COFUND

Duration: 2016-2018

Lead Researcher: Josep Vehí

Project: SITES: Smart IT Engineering and Solutions (2017 SGR 1551)

Funding agency: AGAUR. Generalitat de Catalunya

Duration: 2017-2019

Lead Researcher: Josep Vehí

Project: Socialdiabetes Data Strategy

Funding agency: Private

Duration: 2017-2018

Lead Researcher: Josep Vehí

Patents

Number of application: PCT/ES2012/070358

Title: System and method for estimating blood glucose in plasma

Holder: Universidad Politécnica de Valencia (83%), University of Girona (17%)

Inventor: Bondia Company, Jorge; Barceló Rico, Fátima; Diez Ruano, José Luis; Rossetti, Paolo; Vehi Casellas, Josep; Leal Moncada, Yenny Teresa

Number of application: PCT/ES2016/070051

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

Inventor: Josep Vehí, Fabián León, Fabricio Garelli, Hernán de Battista

Protein engineering

University of Girona

Recognised as a consolidated research group

Group members

Group leaders

Antoni Benito
Marc Ribó

Pre-doctoral researchers

Veronica Gordo
Alejandro Romero

Established researchers

Maria Vilanova

Technician

Imma Guardiola

Post-doctoral researchers

Jessica Castro
Gerard Torrent

Overview

Our research group is interested in the development of new effective antitumor drugs and in the study of protein oligomerization processes that are linked to proteinopathies. Specifically, we are developing new antitumor drugs based on nuclear-directed ribonucleases, on apoptin and on organometallic compounds of ruthenium, manganese and iron. The protein cytotoxic drugs developed here are non-mutagenic compounds that exert their cytotoxic action on different targets allowing to combat the malignant phenotype at multiple levels. TDP43 is associated with the amyotrophic lateral sclerosis (ALS) and with the frontotemporal lobar degeneration (FTLD), which constitute the third more important neurodegenerative disease. The use of inteins to selectively isotopically label different internal domains of the proteinopathic TDP43 protein allows to study the molecular determinants involved in its aggregation as well as the interactions to other cellular partners related to its function

Research topics

- Development of new antitumor drugs based on proteins that target RNA in the cell nucleus
- Development of new antitumor drugs based on the viral apoptosis-inducing protein apoptin
- Development of new delivery carriers for antitumor proteins
- Characterization of the molecular determinants of aggregation of TDP43 by isotopic labeling of internal sequences using intein methodology

Publications

Originals:

Fagagnini A, Montioli R, Caloiu A, Ribó M, Laurents DV, Gotte G. Extensive deamidation of RNase A inhibits its oligomerization through 3D domain swapping. *Biochim Biophys Acta*. 2017 Jan;1865(1):76-87.

Ruiz-Martínez S, Pantoja-Uceda D, Castro J, Vilanova M, Ribó M, Bruix M, Benito A, Laurents DV. Insights into the mechanism of Apoptin's exquisitely selective anti-tumor action from atomic level characterization of its conformation and dynamics. *Arch Biochem Biophys*. 2017 Jan 15;614:53-64.

Vert A, Castro J, Ribó M, Benito A, Vilanova M. Activating transcription factor 3 is crucial for antitumor activity and to strengthen the antiviral properties of Onconase. *Oncotarget*. 2017 Feb 14;8(7):11692-11707.

Ruiz-Martínez S, Castro J, Vilanova M, Bruix M, Laurents DV, Ribó M, Benito A. A truncated apoptin protein variant selectively kills cancer cells. *Invest New Drugs*. 2017 Jun;35(3):260-268.

Current grants

Project: Ribonucleasas e inteínas como herramientas moleculares para el desarrollo de fármacos antitumorales y estudio de proteinopatías. Referència: BIO2013-43517-R

Funding agency: Ministerio de Economía y Competitividad

Duration: 2014-2017

Lead Researcher: Marc Ribó -Antoni Benito

Project: Eines per al desenvolupament de fàrmacs antitumorals i per a l'estudi de proteinopaties Referència: MPCUdG2016-18

Funding agency: University of Girona

Duration: 2016-2017

Lead Researcher: Antoni Benito -Jessica Castro

Statistics and data analysis

University of Girona

Grup de recerca en Estadística i Anàlisi de Dades Composicionals (GR-EADC)

Group members

Group leader

Josep Antoni Martín- Fernández

Established researchers

Carles Barceló

Pepus Daunis Estadella

M. Glòria Mateu

Vera Pawlowsky

Santiago Thió Fernández

Pre-doctoral researchers

Marc Comas

Iván Galván

Technician

Álvaro Franquet

Overview

Compositional Data Analysis (CoDA) refers to the analysis of compositional data (CoDa), which have been defined historically as random vectors with strictly positive components whose sum is constant (e.g., 100, one, a million). More recently, the term covers all those vectors representing parts of a whole which only carry relative information, thus including not only parts per unit or percentages, but also molar compositions.

Typical examples in different fields are: geology (geochemical elements), economy (income/expenditure distribution), medicine and health (body composition: fat, bone, lean; microbiome; physical activities), questionnaire surveys (ipsative data), food industry (food composition: fat, sugar, etc), chemistry (chemical composition), ecology (abundance of different species), paleontology (foraminifera taxa), agriculture (nutrient balance ionomics), sociology (time-use surveys), environmental sciences (soil contamination), and genetics (genotype frequency). This type of data appears in most applications, and the interest and importance of consistent statistical methods cannot be underestimated. Although the concern of the problems related to them was kept alive mainly by researchers from the field of Geosciences, in particular by members of the International Association for Mathematical Geosciences, the awareness of

coherent methods is growing in the environmental, the medicine and the biological sciences.

This hot topic of research has nowadays a broad impact in these fields. However, it took a long time to find a solution to the problem of how to perform a proper statistical analysis of this type of data, i.e. to solve the problem of the spurious correlation, as it was named by Karl Pearson back in 1897, or the closure problem as called by Felix Chayes in the 1960's. Because standard statistical techniques loose their applicability and classical interpretation when applied to compositional data, new techniques were needed. No theoretically sound solution was proposed until the 1980's, when John Aitchison set forth a consistent theory based on log-ratios. Later developments have shown that the mathematical foundation of a proper statistical analysis for this type of data is based on the definition of a specific geometry on the simplex (the sample space of compositional data). Based on it, is possible to rigorously develop any statistical analysis (cluster analysis, discriminant analysis, factor analysis, regression models, to mention just a few).

Research topics

Current multivariate methods for the analysis and modeling of compositional data (CoDa) are the result of more than a century of efforts. K. Pearson already identified the difficulties in the statistical analysis of CoDa at the end of the 19th century. In the decade of the eighties, J. Aitchison presented a clever way for the statistical analysis of CoDa. He stated that the information contained in this type of data is in the ratio of the different parts and, in particular, in the logratios. Besides, he defined the simplex as the sample space for CoDa. The simplex is formed by vectors of positive components with constant sum (1 for proportions, 100 for percentages, one million for ppm). Despite the efforts of J. Aitchison and some of his co-authors, the methods for the CoDa analysis did not have a strong impact in the applied sciences.

In the beginning of the 21st century, as a consequence of the works of the members of UdG's CoDa Research Group, a theoretical consolidation of the compositional methods took place. They established the mathematical and statistical bases according to the geometry of the simplex. Two key results were responsible for this consolidation: the definition of a composition as an equivalence class of vectors of proportional positive components; and the structure of the simplex as a Euclidean space. This opens the way to the principle of working on coordinates for the analysis of compositions and the identification of the hypotheses of the analysis.

Nowadays, the main challenge that emerges is the diffusion of the compositional methods in other fields of applied science and technology. The current aim of the group activities is to spread and transfer the CoDa methods in other scientific fields and, in particular, in the fields identified as societal challenges: climate change, health, wellness, and food quality. The final objective of the current group research lines is to obtain results by using compositional methods and to transfer them to involved entities, that is, to promote its social and economic impact. This spread of results will be carried out by means of the following activities proposed: organisation of seminars, workshops (CoDaWork), and courses (CoDaCourse); development of statistical packages (CoDaPack and R), and a specific website for CoDa (CoDaWeb); as well as the edition of specialized publications.

Publications

Originals:

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. Health-Related Quality of Life and Lifestyle Behavior Clusters in School-Aged Children from 12 Countries. *J Pediatr*. 2017 Apr;183:178-183.e2.

Dumuid D, Olds T, Martín-Fernández JA, Lewis LK, Cassidy L, Maher C. Academic Performance and Lifestyle Behaviors in Australian School Children: A Cluster Analysis. *Health Educ Behav*. 2017 Dec;44(6):918-927.

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Raurell-Torredà M, Romero-Collado A, Bonmati-Tomas A, Olivet-Pujol J, Baltasar A, Solà M, Mateu-Figueras G. Objective Structured Clinical Examination: an assessment method for academic-practice partnerships. *Clinical Simulation In Nursing*. 2017. ISSN: 1876-1399.

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Munuera J, Blasco G, Hernández-Pérez M, Daunis-I-Estadella P, Dávalos A, Liebeskind DS, Wintermark M, Demchuk A, Menon BK, Thomalla G, Nael K, Pedraza S, Puig J. Venous imaging-based biomarkers in acute ischaemic stroke. *J Neurol Neurosurg Psychiatry*. 2017 Jan;88(1):62-69.

Current grants

Project: Statistical Methods in restricted spaces (METRICS: Métodos Estadísticos en Espacios Restringidos)

Funding agency: Ministerio de Ciencia e Innovación (MICINN) / MTM2012-33236

Duration: 2013-2017

Lead Researcher: Jose Antonio Martín

Project: Compositional Data Analysis and RElated meThOdS (CODA-RETOS).

Funding agency: Ministerio de Economía y Competitividad-MTM2015-65016-C2-1-R

Duration: 2016-2018

Lead Researcher: Josep Antoni Martín/ G. Mateu Figueras

Statistics, econometrics and health (GRECS)

University of Girona

Team involved in "Centro de Investigación Biomédica en Red en Epidemiología y Salud Pública" (CIBEResp)
Recognised as a consolidated research group



Group members

Group leader

Marc Saez

Post-doctoral researchers

Gemma Osca

Established researchers

Maria Antònia Barceló

Germà Coenders

Lluís Coromina

Gemma Renart

Carme Saurina

Laura Vall.Ilosera

Diego Varga

Pre-doctoral researchers

Marta Solans

Overview

The central area of research is statistical modelling in different areas. The first is epidemiology and statistics in health sciences. In epidemiology, our interest is focused on environmental epidemiology, on clinical epidemiology (cardiovascular diseases, neurodegenerative diseases -amyotrophic lateral sclerosis, ALS, in particular-, development disorders - attention deficit and hyperactivity disorder, ADHD, in particular-, on cancer epidemiology and on social epidemiology (inequalities and economic determinants of health, in particular). Health Econometrics is the second area. It could be defined as the application of econometrics and other quantitative approaches in Health Economics. But it is not just the mere application of econometric instruments to some data from the field of health sciences, but it has developed specific new statistical tools to analyse emerging issues. That's why this field contains theoretical-methodological research, and applied research. The third area, in order of importance, is Statistics, Econometrics and Data Quality Survey, which is developed from a more theoretical and methodological aspect. First, the structural equation models with latent variables, where it is estimated relationships between variables measured with error. Our research aims at extending the methodology to treat as ordinal scales, the missing data, hierarchical structures and nonlinear relationships. This line of work leads to a more general improvement of the design and analysis of questionnaires, which we applied to measure quality of life, quality of products and services, and social networks values and welfare of children, and the economic evaluation of diseases.

Research topics

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. Crisi's 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:

Aguilar-Palacio I, Martínez-Beneito MA, Rabanaque MJ, Borrell C, Cirera L, Daponte A, Domínguez-Berjón MF, Gandarillas A, Gotsens M, Lorenzo-Ruano P, Marí-Dell'Olmo M, Nolasco A, Saez M, Sánchez-Villegas P, Saurina C, Martos C; other MEDEA members. Diabetes mellitus mortality in Spanish cities: Trends and geographical inequalities. *Prim Care Diabetes*. 2017 Oct;11(5):453-460

Blanco-Silvente L, Castells X, Saez M, Barceló MA, Garre-Olmo J, Vilalta-Franch J, Capellà D. Discontinuation, Efficacy, and Safety of Cholinesterase Inhibitors for Alzheimer's Disease: a Meta-Analysis and Meta-Regression of 43 Randomized Clinical Trials Enrolling 16 106 Patients. *Int J Neuropsychopharmacol*. 2017 Jul 1;20(7):519-528.

Sicras A, Ferrer V, Collar JM, Navarro R, Sáez M. [Persistence to treatment by type of inhaler device in patients with asthma and chronic obstructive pulmonary disease]. *Semergen*. 2017 Jul - Aug;43(5):375-386.

Arroyo-Borrell E, Renart-Vicens G, Saez M, Carreras M. Hospital Costs of Foreign Non-Resident Patients: A Comparative Analysis in Catalonia, Spain. *Int J Environ Res Public Health*. 2017 Sep 14;14(9).

Talmoudi K, Bellali H, Ben-Alaya N, Saez M, Malouche D, Chahed MK. Modeling zoonotic cutaneous leishmaniasis incidence in central Tunisia from 2009-2015: Forecasting models using climate variables as predictors. *PLoS Negl Trop Dis*. 2017 Aug 25;11(8):e0005844

Fuentes-Raspall R, Solans M, Roca-Barceló A, Vilardell L, Puigdemont M, del Barco S, Comas R, García-Velasco A, Astudillo A, Carmona-García MC, Marcos-Gragera R. Descriptive epidemiology of primary malignant and non-malignant central nervous tumors in Spain: results from the Girona Cancer Registry (1994-2013). *Cancer Epidemiology* 2017; 50:1-8.

Abásolo I, Saez M, López-Casasnovas G. Financial crisis and income-related inequalities in the universal provision of a public service: the case of healthcare in Spain. *Int J Equity Health*. 2017 Jul 24;16(1):134.

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. [Contextual indicators to assess social determinants of health and the Spanish economic recession]. *Gac Sanit*. 2017 May - Jun;31(3):194-203.

Barceló MA, Rodríguez-Poncelas A, Saez M, Coll-de-Tuero G. The dynamic behaviour of metabolic syndrome and its components in an eight-year population-based cohort from the Mediterranean. *PLoS One*. 2017 May 18;12(5):e0176665.

Arroyo-Borrell E, Renart G, Saurina C, Saez M. Influence maternal background has on children's mental health. *Int J Equity Health*. 2017 Apr 18;16(1):63.

Ferrer-Batallé M, Llop E, Ramírez M, Aleixandre RN, Saez M, Comet J, de Llorens R, Peracaula R. Comparative Study of Blood-Based Biomarkers, α 2,3-Sialic Acid PSA and PHI, for High-Risk Prostate Cancer Detection. *Int J Mol Sci*. 2017 Apr 17;18(4). pii: E845

Salamanca CA, Fiol N, González C, Saez M, Villaescusa I. Extraction of espresso coffee by using gradient of temperature. Effect on physicochemical and sensorial characteristics of espresso. *Food Chem*. 2017 Jan 1;214:622-630.

Ferrer-Rosell B, Coenders G. Airline type and tourist expenditure: Are full service and low cost carriers converging or diverging? *J Air Transp Manag*. 2017 Aug; 63: 119-125.

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Sicras-Mainar A, Navarro-Artieda R, Ruiz-Torrejón A, Saez M, Coll-de Tuero G, Sánchez L. [A retrospective, observational and multicentre study on patients with hyperactive bladder on treatment with mirabegron and oxybutinine under usual clinical practice conditions]. *Semergen*. 2017 May - Jun;43(4):277-288.

M Blasco-Duatis, N Fernández García, I Cunha (2017): "Opinar de política en la prensa escrita española. Análisis del período Elecciones Generales en España, 2015". *Revista Latina de Comunicación Social*, 72, pp. 349 a 373

Coenders G, Martín-Fernández JA, Ferrer-Rosell B. When relative and absolute information matter. Compositional predictor with a total in generalized linear models. *Statistical Modelling* 2017; 17(6): 494–512

Cabrera-León A, Ferri-García R, Navarro S, Saez M, Daponte A. Comparabilidad de las ediciones 2006/2007 y 2011/2012 de la Encuesta de Salud de España. *Revista Española de Salud Pública* 2017; 91. pii: e201711044.

Books / Books chapters:

Barceló M., Sáez M, Coenders G. Introducció a l'entorn R-STUDIO. Girona: Documenta Universitaria, 2017. ISBN: 978-84-9984-387-2.

Sáez M, Barceló M. Efecto de la crisis sobre la inserción laboral de los graduados en las universidades catalanes. En Parellada M (Director), Solé Parellada F (Supervisión), Álvarez M, Krüger K, Mediavilla A. INFORME CYD 2016. ISBN: 978-84-16989-84-3. Barcelona: Fundación Conocimiento y Desarrollo, 2017, pp. 139-140.

Current grants

Project: Ajut per a la millora de la productivitat científica dels grups de recerca de la Universitat de Girona 2016-2018 (MPCUdG2016/69)

Funding agency: University of Girona

Duration: 2016-2018

Lead Researcher: Marc Saez

Project: Ajut del programa foment de la Transferència de la Universitat de Girona TRANSFERUdG2016 (TRANSFER2016/24)

Funding agency: University of Girona

Duration: 2017-2019

Lead Researcher: Marc Saez

Project: Project H2020 European Union Funding for Research & Innovation (topic SFS-39-2017: Sustainable Food Security – Resilient and resource efficient value) 'Science and technology in childhood obesity policy (STOP)'.
Funding agency: European Union

Duration: 2018-2012

Lead Researcher: Marc Saez

Coordinator: Franco Sassi, Imperial College of Science Technology and Medicine (London, UK)

Project: España 'Microclima, habitabilidad y salud urbana (HABITA)'

Funding agency: Acciones de dinamización 'Redes de Excelencia', Convocatoria 2016, Red Temática BIA2016-81749-REDT. Programa Estatal de Investigación Científica y Técnica de Excelencia, Subprograma Estatal de Generación del Conocimiento, Ministerio de Economía y Competitividad, Gobierno de España

Duration: 2016-2017

Lead Researcher: Marc Saez

Coordinator: F. Javier Neila González (Universidad Politécnica de Madrid)

Patents

Number of application: P 2014 31022

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

Holder: University of Girona

Inventor: Peracaula R, Ferri Mj, Saez M, Figueras J, Fort E, Aleixandre Rn, De Llorens R

OUTREACH ACTIVITIES

Seminars and visits

Seminars organized in 2017 by IDIBGI
are listed below:

• Given by external staff:

- 4th March 2017.

The sperm cell: complexity within simplicity across mammalian species.

Dr. Marc Yeste, Institut de Tecnologia Agroalimentària, Grup de Recerca Technosperm.

- 22th May 2017.

Chasing subcellular cardiac physiology and pathology at the intact heart level.

Dr. Ariel L. Escobar. Professor, School of Engineering University of California, Merced

- 23th May 2017.

Deep Learning for microRNA & isomiR target prediction.

Dr. Albert Pla- Scientia-Marie Curie postdoctoral fellow at the department of medical genetics of the University of Oslo.

Conferences organized by IDIBGI:

- 26th May 2017.

Health and Social Impact of Borderline Intellectual Functioning.

Dr. Jordi Cid, Service of Psicosocial rehabilitation psicosocial, Programme Coordinator and Care Director of Institut d'Assistència Sanitària de Girona and Dr. Ramon Novell, Head of the Service of Psiquiatria and Intel·lectual Disability of Girona. Organized in collaboration with Institut d'Assistència Sanitària (IAS).

- 09th June 2017.

"Jornada Provincial del Trauma Obstètric Perineal".

Dr. Fernando Montero, Gynecology and Obstetrics Department, Hospital Dr. Josep Trueta. Co-organized with Hospital Universitari de Girona Doctor Josep Trueta.

- 6-7th October 2017.

"VII Jornades del Mediterrani en Escleròsi Múltiple".

Dr. Lluís Ramió Torrentà (PI Neurodegeneration and neuroinflammation research group Grup, Head of the Service of Neurology at Hospital Universitari Doctor Josep Trueta and IAS.

- 6th October 2017.

"II Jornada Catalana d'Infectologia Pediàtrica".

Dr. Borja Guarch, Department of Pediatrics, Hospital Universitari de Girona Dr. Josep Trueta.

- 7th November 2017.

"Curs d'actualització en Endocrinologia".

Dra. Lidia Sojo, Department of Endocrinology, Hospital Universitari de Girona Doctor Josep Trueta. Organized in collaboration with Hospital Universitari de Girona Doctor Josep Trueta.

- 24th November 2017.

"XII Jornada dels Comitès d'Ètica de Catalunya".

Co-organized with "Societat Catalana de Bioètica" and Hospital Universitari de Girona Doctor Josep Trueta.

Courses organized by IDIBGI:

- 30th March 2017.

"Curs Incorporació de la perspectiva de gènere a la recerca en salut".

Dra. Maria del Mar García-Calvente, Public Health Specialist- Escuela Andaluza de Salud Pública, Instituto de Investigación Biosanitaria de Granada. Organized in collaboration with "Càtedra de Promoció de la Salut" of the University of Girona.

- 29th June- 21st September- 30th November 2017.

"Curs Gestió del Temps": "Les bases de l'organització personal; Gestió i programació del temps; Organització de la documentació digital i gestió del correu electrònic".

Oriol Güell Custodia.

- 4th October 2017.

"II Curs de cirurgia colorectal".

Dr. Pere Planelles, Department of General Surgery, Hospital Universitari Dr. Josep Trueta. Co-organized with the Colorectal Surgery Unit of Hospital Universitari de Girona Doctor Josep Trueta.

- 29th November 2017.

"II Curs d'actualització proctologia".

Dr. Pere Planelles, Department of General Surgery, Hospital Universitari Dr. Josep Trueta. Co-organized with the Colorectal Surgery Unit of Hospital Universitari de Girona Doctor Josep Trueta.

Visits

La Marató Foundation:

The Fundació La Marató de TV3 was created in 1996 by the Catalan Audiovisual Media Corporation with the mission of fostering and promoting biomedical research of excellence, as well as raising social awareness about the diseases dealt with in the television programme La Marató de TV3, by means of campaigns involving the public and also through publicity and educational events.

Every year, IDIBGI offers the opportunity to know first hand the research that is being carried out at IDIBGI thanks to the projects financed by this Marathon so popular among Catalan people. This year the visit took place on May 2, 2017 and welcomed 15 visitors.

Jove Campus de Recerca:

IDIBGI has become an annual meeting for the "Jove Campus de Recerca", or the Young Campus of Research, organized by the University of Girona. The purpose of this activity is to show the research carried out at IDIBGI to 1st-year high school students. For two weeks the students are distributed by areas and visit research centers. This year IDIBGI received 20 students in its facilities.

Finally, IDIBGI also received the visit of two groups of students from the "Institut de Sils (17/01/2017 and 22/11/2017).



Winners of the IDIBGI award 2017

The IDIBGI Award for the best final year project of the Nursing School. Undergraduates (ex aequo) was awarded to:

Zayra Reyes Amargant.

"Assetjaments/abusos/agressions sexuals en estudiants d'infermeria en context de festa i sota el consum de toxics".

Asmaa Bouras Rahou.

"Avaluació de l'impacte d'un programa de salut en dones marroquines en període climatèric".

The IDIBGI Award for the best final year project of the Nursing School Master:

Aina Roca Barceló.

"Inequities in health: Social inequities in the survival of women diagnosed with an invasive breast cancer in the Girona Province".

Fundraising

During 2017, the Fundraising Department of IDIBGI underwent the following activity:

- **Companies:** 89 companies contacted, 15 of them conducted an official visit. Output: 10 new companies
→ "Empresaris per la Recerca"
- **Professional bodies:** 18 professional bodies contacted, 15 of them conducted an official visit. Output: 2 solidarity initiatives
- **Cultural sector:** 14 entities contacted, 7 of them conducted an official visit in IDIBGI. Output: 4 charity concerts

- **Mass media:** 5 mass media contacted. New media partners
- **Municipal market:** 9 markets contacted. Output: 2017 solidarity calendar
- **Solidarity initiatives:** 30 people/entities contacted, 29 conducted a visit in IDIBGI. Output: 13 solidarity initiatives



Annexes

Annex 1. List of Clinical Trials

CARDIOLOGY

SOC-ICH-2015-01. Xavier Oliva. "Registro prospectivo multicéntrico para evaluar el rendimiento inicial y tardío de un sistema de stent inerte coronario CoCr".

CLCZ696B3301. Julia Roure. "Estudio multicéntrico, aleatorizado, doble ciego, prospectivo para evaluar el efecto de sacubitril/valsatrán vs. Enalapril en la actividad física diaria utilizando un actígrafo de muñeca en pacientes adultos con insuficiencia cardíaca crónica"

DIGESTIVE DEPARTMENT

CT-P13 1.6. Xavier Aldeguer. "Estudio en fase 1 abierto, aleatorizado, de grupos paralelos para evaluar la farmacocinética, la eficacia y la seguridad de ct-p13 subcutáneo y ct-p13 intravenoso en pacientes con enfermedad activa de Crohn y pacientes con colitis ulcerosa activa".

ST10-01-304. Xavier Aldeguer. "A phase 3b, randomized, controlled, multicentre study with oral ferric maltol (Feraccru) or intravenous iron (ferric carboxymaltose; FCM), for the treatment of iron deficiency anaemia in subjects with inflammatory bowel disease".

ENDOCRINOLOGY

NN1218-4113. Lidia Sojo. "Onset® 9: Eficacia y seguridad de insulina aspart de acción más rápida en comparación con NovoRapid®, ambas en combinación con insulina degludec con o sin metformina en adultos con diabetes tipo 2".

INTENSIVE MEDICINE

1424R2131. Josep Maria Sirvent. "A Multicenter, Randomized, Open-label Clinical Study of S-649266 or Best Available Therapy for the Treatment of Severe Infections Caused by Carbapenem-resistant Gram-negative Pathogens".

NEUROLOGY

MS200527-0086. Lluís Ramió. "Estudio en fase II aleatorizado, doble ciego y controlado con placebo sobre M2951 con un grupo de control activo, paralelo y abierto (Tecfidera) en pacientes con esclerosis múltiple recidivante para evaluar la eficacia, seguridad, tolerabilidad, farmacocinética y actividad biológica".

AC-058B302. Lluís Ramió. "Multicenter, randomized, double-blind, parallel-group, add-on, superiority study to compare the efficacy and safety of ponesimod to placebo in subjects with active relapsing multiple sclerosis who are treated with dimethyl fumarate (Tecfidera®)".

CL2-RTCCAR-001. Joaquín Serena. "Evaluación de la cinética plasmática del inhibidor activo de la fibrinólisis activable por trombina (TAFIa) en pacientes con ictus isquémico en fase aguda: Estudio prospectivo de biomarcadores, multicéntrico, abierto, no aleatorizado".

MD1003CT2016-01MS-SP12. Lluís Ramió. "Effect of MD1003 in progressive multiple sclerosis: a randomized double blind placebo controlled study".

D5134C00003. Joaquín Serena. "Ensayo Fase III, aleatorizado, doble ciego, internacional, multicéntrico, controlado con placebo, para evaluar la eficacia y seguridad de ticagrelor y AAS, comparado con AAS en la prevención de ictus y muerte en pacientes con ictus isquémico agudo o accidente isquémico transitorio".

CL02-ORY-2001MS. Lluís Ramió. "Randomized, double-blind, placebo-controlled, 3-arm, 36 weeks parallel-group study to evaluate the safety and tolerability of ORY-2001 in patients with Relapsing-Remitting Multiple Sclerosis (RRMS) and Secondary Progressive Multiple Sclerosis (SPMS)".

BN29553. Immaculada Pericot. "Estudio en fase iii, multicéntrico, aleatorizado, doble ciego, controlado con placebo y grupos paralelos para evaluar la eficacia y seguridad de crenezumab en pacientes con enfermedad de alzheimer de prodromica a leve".

IG1002. Secundino López-Pousa. "Estudio multicéntrico, aleatorizado y controlado para evaluar la eficacia y seguridad del intercambio plasmático a corto plazo seguido de plasmaféresis a largo plazo con infusiones de albumina humana combinada con inmunoglobulina intravenosa en paciente con enfermedad de Alzheimer leve a moderada".

OPHTHALMOLOGY

DUOPAN-EPAM. Santiago López-Ben. **LT4020-302.** Teresa Torrent. "Performance and Safety Assessment of T4020 combined with standard post-operative therapy versus standard post-operative therapy in Managing Corneal Epithelial Defect Following Epi-off Accelerated Crosslinking".

MEDICAL ONCOLOGY

PR-30-5017-C. Pilar Barretina. "A phase 3, randomized, double-blind, placebo-controlled, multicenter study of niraparib maintenance treatment in patients with hrd-positive advanced ovarian cancer following response on front-line platinum-based chemotherapy".

CO-338-043. Pilar Barretina. "ARIEL4 (Assessment of Rucaparib In Ovarian CancEr Trial): A Phase 3 Multicenter, Randomized Study of Rucaparib versus Chemotherapy in Patients with Relapsed, BRCA Mutant, High Grade Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer".

X396-CLI-301. Joaquim Bosch. "A Phase 3 Randomized Study Comparing X-396 to Crizotinib in Anaplastic Lymphoma Kinase (ALK) Positive Non-Small Cell Lung Cancer (NSCLC) Patients".

MedOPP107. Joan Dorca. "Ensayo fase ii, abierto y multicéntrico para evaluar la eficacia y seguridad de nal-iri en pacientes con cáncer de mama her2 negativo con metástasis cerebrales en progresión".

INCB54828-201. Nuria Sala. "A Phase 2, Open-Label, Single-Agent, Multicenter Study to Evaluate the Efficacy and Safety of INCB054828 in Subjects With Metastatic or Surgically Unresectable Urothelial Carcinoma Harboring FGF/FGFR".

AFT-05 ABCSG 42 BIG 14-03. Sonia del Barco. "Ensayo de fase iii aleatorizado de palbociclib con tratamiento endocrino adyuvante estándar frente a monoterapia con tratamiento endocrino adyuvante estándar en cáncer de mama precoz con receptores hormonales positivos (rh+) y her2-negativo".

INCB54828-202 Adelaida Garcia. "A Phase 2, Open-Label, Single-Arm, Multicenter Study to Evaluate the Efficacy and Safety of INCB054828 in Subjects With Advanced/Metastatic or Surgically Unresectable Cholangiocarcinoma Including FGFR2 Translocations Who Failed Previous Therapy".

ONCOS C719. Joaquim Bosch. "A randomised Phase II open-label study with a Phase Ib safety lead-in cohort of ONCOS 102, an immune-priming GM-CSF coding oncolytic adenovirus, and pemetrexed/cisplatin in patients with unresectable malignant pleural mesothelioma".

4010-01-001. Pilar Barretina. "A Phase 1 Dose Escalation and Cohort Expansion Study of TSR-042, an anti-PD-1 Monoclonal Antibody, in Patients with Advanced Solid Tumors".

ABT-C5-2016. Joaquim Bosch. "Ensayo clínico de fase i/ii abierto para evaluar la eficacia y seguridad de abt10812 en combinación con paclitaxel y carboplatino en pacientes con cáncer de endometrio avanzado o nsccl escamoso".

CLEE011A2404. Gemma Viñas. "COMPLEEMENT-1: Estudio de fase IIIb, abierto, multicéntrico, para evaluar la seguridad y la eficacia de ribociclib (LEE011) en combinación con letrozol en el tratamiento de hombres y mujeres pre/postmenopáusicas con cáncer de mama avanzado (CMA) con receptor hormonal positivo (HR+) y HER2 negativo (HER2-) que no hayan recibido tratamiento hormonal para la enfermedad avanzada".

3475-564. Pilar Barretina. "Ensayo clínico de fase III, aleatorizado, doble ciego y controlado con placebo de pembrolizumab (MK-3475) en monoterapia para el tratamiento adyuvante del carcinoma renal tras una nefrectomía (KEYNOTE-564)".

MedOPP096. Gemma Viñas. "Trastuzumab y pertuzumab sin quimioterapia en cáncer de mama HER2 positivo: estrategia adaptada en función de la respuesta evaluada por FDG-PET. estudio PHERGain".

ADX001-02 Pilar Barretina. "Phase 3 study of adxs11-001 administered following chemoradiation as adjuvant treatment for high risk locally advanced cervical cancer: aim2cerv".

ENGOT-EN3-NGSO/PALEO. Pilar Barretina. "A randomized, double-blind, placebo-controlled phase II trial of Palbociclib in combination with Letrozole versus Letrozole in combination with placebo for patients with Estrogen Receptor Positive advanced or recurrent Endometrial cancer".

D081FC00001. Adelaida Garcia. A Phase III, Randomised, Double Blind, Placebo Controlled, Multicentre Study of Maintenance Olaparib Monotherapy in Patients with gBRCA Mutated Metastatic Pancreatic Cancer whose Disease Has Not Progressed on First Line Platinum Based Chemotherapy".

ColoAd1-2001. Pilar Barretina. "A clinical study of enadenotucirev: dose finding and proof of concept in platinum-resistant epithelial ovarian cancer".

D0816R00012. Gemma Viñas. "BREAKOUT -International Breast Cancer Biomarker, Standard of Care and Real World Outcomes Study".

GINECO-OV236b-GEICO 1701. Pilar Barretina. "A randomized, double blinded, phase iii study of atezolizumab versus placebo in patients with late relapse of epithelial ovarian, fallopian tube, or peritoneal cancer treated by platinum-based chemotherapy and bevacizumab".

Annexes

B9991016. Jordi Rubio. "A randomized double-blind phase 3 study of avelumab in combination with standard of care chemoradiotherapy cisplatin plus definitive radiation therapy) versus standard of care chemoradiotherapy in the front-line treatment of patients with locally advanced squamous cell carcinoma of the head and neck".

B7461006. Joaquim Bosch. "A Phase 3, randomized, open label study of lorlatinib (pf 06463922) monotherapy versus crizotinib monotherapy in THE first line treatment of patients with advanced alk positive non small cell lung cancer".

D081DC00007. Pilar Barretina. "Ensayo Clínico Fase III, abierto, aleatorizado, para evaluar la eficacia y la seguridad de Olaparib (Lynparza®)".

DIV-SCLC-301. Joaquim Bosch. "A Two-Part, Open-Label, Randomized, Phase II/III Study of Dinutuximab and Irinotecan versus Irinotecan for Second Line Treatment of Subjects with Relapsed or Refractory Small Cell Lung Cancer".

MO39171. Joaquim Bosch. "Estudio de fase iii/iv multicéntrico, con un solo grupo de tratamiento, para investigar la seguridad a largo plazo y la eficacia de atezolizumab (tecentriq) en pacientes con cáncer de pulmón no microcítico localmente avanzado o metastásico, tratados previamente (tail)".

MM-121-02-02-10. Joan Dorca. "A Double-blind, Placebo-controlled, Phase 2 trial of Seribantumab Plus Fulvestrant in Postmenopausal Women with Hormone Receptor-positive, Heregulin Positive (HRG+), HER2 Negative Metastatic Breast Cancer Whose Disease Progressed After Prior Systemic Therapy".

CLINICAL HEMATOLOGY

AC220-A-U302. Ramon Guardia. "A Phase 3, Double-Blind, Placebo-controlled Study of Quizartinib (AC220) Administered in Combination with Induction and Consolidation Chemotherapy, and Administered as Maintenance Therapy in Subjects 18 to 75 Years Old with Newly Diagnosed FLT3-ITD (+) Acute Myeloid Leukemia (QuANTUM First)".

KO-TP-002. José Maria Roncero. "An Open Label Phase II Study of Tipifarnib in Subjects with Relapsed or Refractory Peripheral T-Cell Lymphoma".

PNEUMOLOGY

CQVM149B2302. Gladis Sabater. "Estudio multicéntrico, aleatorizado, doble ciego, de grupos paralelos, con control activo de 52 semanas de duración para comparar la eficacia y la seguridad de QVM149 con QMF149 en pacientes con asma".

200879. Sonia Belda. "Estudio fase IIb, aleatorizado (estratificado), doble ciego (abierto para promotor), de grupos paralelos, controlado con placebo, de búsqueda de dosis de nemalisib (GSK2269557) añadido al estándar de tratamiento frente solo al estándar de tratamiento, en pacientes diagnosticados con una exacerbación aguda moderada o grave de su enfermedad pulmonar obstructiva crónica (EPOC)".

Observational assays:

CARDIOLOGY

SOC-DES-2017-01. Xavier Oliva. "Registro de ihtdestiny bd, sistema de stent coronario liberador de sirolimus abluminal".

MAGMARIS-ES. Joan Bassaganyas. "Registro Observacional prospectivo de pacientes con implante de stent bioabsorbible de magnesio – MAGMARIS -ES en la práctica clínica habitual".

CIRURGIA ORTOPÈDICA I TRAUMATOLOGIA

ALS-Gd64/001. Miguel Angel Froufe. "Exploratory evaluation of the potential for long-term retention of Gadolinium in the bones of patients who have received Gadolinium based Contrast Agents according to their medical history".

DIGESTIVE DEPARTMENT

MK8259-042-00. Xavier Aldeguer. "A Post-Authorization Safety Study of Golimumab in UC Using the Spanish ENEIDA Registry".

ENDOCRINOLOGY

CSOM230CIC05. Gemma Xifra. "Estudio europeo, observacional, de pasireotida LAR en acromegalia – Estudio ACRONIS".

INTENSIVE MEDICINE

FKD-CBS-2016-01. Carolina Lorencio. "Observational retrospective analysis assessing the influence of three chamber bags compared to hospital compounded parenteral nutrition bags on blood stream infections".

NEUROLOGY

Z7219N02 Berta Solano. "Estudio europeo multicéntrico de cohortes retrospectivo y prospectivo para observar el perfil de seguridad de safinamida y la pauta de uso en la práctica clínica durante la primera fase posterior a la comercialización".

IMA0602. Lluís Ramió. "TOP: TYSABRI® Observational Program".

HMRI2012101. Joaquin Serena. "Tenecteplase versus Alteplase for Stroke Thrombolysis Evaluation (TASTE) Trial".

FJD-ESL-2016-01. Albert Molins. "Estudio observacional multicéntrico y retrospectivo para evaluar la efectividad del acetato de eslicarbazepina (ESL) en monoterapia como tratamiento de la epilepsia parcial en la práctica clínica habitual en España".

MEDICAL ONCOLOGY

GEIS 46. Jordi Rubió. "Estudio observacional, retrospectivo y multicéntrico para identificar el papel pronóstico y posibles implicaciones terapéuticas del receptor de la somatostatina (SSTR) en el tumor de estroma gastrointestinal (GIST) localizado (SOMAGIST)".

GECP 16/01. Joaquim Bosch. "Observacional no-epa registro de tumores torácicos".

C13-1. Bernardo Queral. "Seguimiento del estudio AVANT hasta 8 y 10 años (mediana de seguimiento) en pacientes con carcinoma de colon".

IBCSG 48-14/BIG 8-13. Sonia del Barco. Estudio para evaluar los desenlaces del embarazo y la seguridad de la interrupción del tratamiento endocrino de mujeres jóvenes con cáncer de mama y respuesta al tratamiento endocrino que deseen quedarse embarazadas".

1199223. **Joaquim Bosch.** "Estudio de biomarcadores no intervencionista en pacientes con cáncer de pulmón no microcítico (NSCLC) del tipo histológico adenocarcinoma elegibles para el tratamiento con Vargatef® según la ficha técnica autorizada".

RUT-GEM-2017-01. Adelaida Garcia. "Estudio clínica observacional, retrospectivo, multicéntrico, para analizar el manejo de paciente con adenocarcinoma ductal de páncreas en la práctica clínica habitual".

PFI-ITK-2015-01/A 6181218. Nuria Sala. "Estudio observacional, prospectivo y multicéntrico de calidad de vida en relación con la fatiga y el síndrome mano-pie de los pacientes con carcinoma renal metastásico tratados con un inhibidor de la tirosina quinasa en primera línea (Estudio TROYA)".

Annexes

AJT-ACO-2016-01. Ruth Porta. "Caracterización del Riesgo de Trombosis en Pacientes con Cáncer (Estudio CARTAGO)".

01/16. Joaquim Bosch. "Estudio de la dinámica mutacional en pacientes de cáncer de pulmón no microcítico avanzado con mutación en EGFR en primera línea de tratamiento".

GEICO 1702. Pilar Barretina. "Estudio español no intervencional, multicéntrico y retrospectivo para analizar la eficacia y seguridad de trabectedina en el tratamiento de pacientes con leiomioma uterino avanzado recidivante".

CLINICAL HEMATOLOGY

TAK-MMR-2017-01. Yolanda González. "Realización del estudio postautorización de tipo observacional (epa-od) "caracterización clínico-sociodemográfica de los pacientes con mieloma múltiple en recaída sintomática y/o refractarios en España".

RADIOTHERAPIC ONCOLOGY

1308-ROG-BTG. Rafael Fuentes. "Radiation versus Observation following surgical resection of Atypical Meningioma: a randomised controlled trial (The ROAM trial)".

Q-DIOseo. Jordi Marruecos. "Evaluación de la calidad de vida y satisfacción del paciente con dolor irruptivo oncológico asociado a la enfermedad metastásica ósea en unidades de dolor, oncología radioterápica y cuidados paliativos".

PSIQUATRY

ARI-MGD-2016-01. René Ricardo Morgan. "Aripiprazol una vez al mes frente al tratamiento antipsicótico atípico oral una vez al día en pacientes con esquizofrenia de aparición reciente: estudio observacional, no intervencionista".

031-307-00162. Domenec Serrano. "Estudio observacional postautorización epa-od predictores de persistencia en pacientes con esquizofrenia tratados con aripiprazol inyectable de liberación prolongada en la práctica clínica española: estudio retrospectivo observacional".

UROLOGY

JAN-CPR-2017-01. Josep Comet. "Estudio observacional y transversal para la optimización del diagnóstico de metástasis en fase de CPRC M0 en la práctica clínica habitual en España".

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